2024 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: May 2024

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Report Reference number	COL/ASR2024
Date	20th May 2024
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Executive Summary: Air Quality in Our Area

The 2024 Annual Status Report 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 2023, 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 existing Air Quality Management Area (AQMA) 1 Central Corridors.

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. In the UK, it is estimated that the reduction in healthy life expectancy caused by air pollution is equivalent to 29,000 to 43,000 deaths a year[1].

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Additionally, people living in less affluent areas are most exposed to dangerous levels of air pollution[2].

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.

[1] UK Health Security Agency. Chemical Hazards and Poisons Report, Issue 28, 2022.

[2] Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

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.

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.

Due to measured improvements in air quality, Colchester City Council has undertaken consideration of the current AQMAs and has approved the following recommendations:

- Amend AQMA1 into three small AQMA
    - Brook Street AQMA
    - Mersea Road AQMA
    - Osborne Street & St John's Street AQMA
- Revoke AQMA 2 & 4

At the time of completing this report the AQMA has been revoked.

The proposed AQMAs are set out in maps shown in Appendices G, H and I.

The general trend across Colchester is of improved air quality. However, Brook Street and Mersea Road have showed slight increases in measured nitrogen dioxide.

Actions to Improve Air Quality

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

The Environmental Improvement Plan[3] sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant of most harmful to human health. The Air Quality Strategy[4] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero[5] details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Colchester City Council have lots of projects that are being undertaken to improve air quality and here are three notable examples:

St Botolph's Circus Improvements

The proposed improvements at St Botolph's Circus in Colchester aim to simplify the roundabout, making it easier to navigate for all modes of transport. This is expected to alleviate congestion and enhance safety for vulnerable road users such as pedestrians and cyclists. The area is adjacent to Mersea Road where air quality is a significant concern. The redesign is intended to facilitate smoother traffic flow, which could potentially improve the local air quality. Initial air quality modelling for the current design identfies:

- Modelling of the current design proposal shows a reduction in annual mean NO2 concentrations along Mersea Road compared to the existing junction.
- There are no modelled exceedances of the annual mean NO2 air quality objective of 40ug/m3 with the current design proposal in place.

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

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

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

eCargo Bike Service

The Colchester eCargo bikes delivery [service](#) is focussed on a green, clean, eco-friendly approach. We are trying to help reduce vehicle emissions pollution and reduce congestion across Colchester.

What is an eCargo bike?

It is a specially designed, small battery & pedal powered 2, 3 or 4 wheeled vehicle, made to transport loads quickly and efficiently.

Where can we deliver?

We deliver pretty much all across Colchester, we go out to Wivenhoe, Rowhedge and Fingringhoe in one direction, then out as far as Copford the other direction, then up as far as Great Horkesley and then down as far as Layer de la Haye, and then all the areas included within. Basically, anywhere we can ride to up to around 5.5miles/8.5km.

We work with retailers and businesses across Colchester from local independents to national chains, supporting our local economy and getting you what you need quickly and with a tiny carbon footprint.

We promise to have your local delivery with you quickly - all our deliveries can be next day, even same day, or even booked a few days in advance, and always delivered at a time that suits you.

Clean Air for Colchester

Clean Air Colchester are local people who are deeply committed to making the air in Colchester safe to breathe. The website provides information for schools, business and residents.

Since 2020, Clean Air Colchester have been partnering with Colchester City Council to develop and launch the CAReless Pollution campaign.

Click on the video below to view the Clean Air for Colchester two-minute film about air pollution in Colchester.

CAReless Pollution is a Colchester-wide campaign urging drivers to adopt better driving habits and switch off their engines while they wait at traffic lights, level crossings or outside schools. This is to improve their own health and help reduce air pollution in the town.

Find out more about the [CAReless Pollution Campaign](#)

Conclusions and Priorities

Colchester City Council have concluded that:

- One exceedance of the air quality objectives has been identified at relevant exposure in 2023.

- In 2024, Colchester City Council will undertake the administrative work to amend AQMA 1 into three small AQMA:
    - Brook Street AQMA
    - Mersea Road AQMA
    - Osborne Street & St John's Street AQMA

- In 2024, Colchester City Council will undertake the administrative work to revoke AQMA 2 & 4

- Colchester City Council's priority is to develop a new air quality action plan

- Defra have provided Colchester City Council with an extension to submit a new AQAP with the following deadlines:
    - Draft AQAP 31st August 2024
    - Final AQAP 31st December 2024

- There are no new developments that will have a significant impact on air quality.

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:

Telephone: 01206 282222

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Local Engagement and How to get Involved

Essex Air

Colchester City Council is a member of the Essex Air Quality consortium which along with Essex County Council launched the new Essex Air [website](#) on 28th November 2023 to raise awareness about air pollution in Essex. The 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.

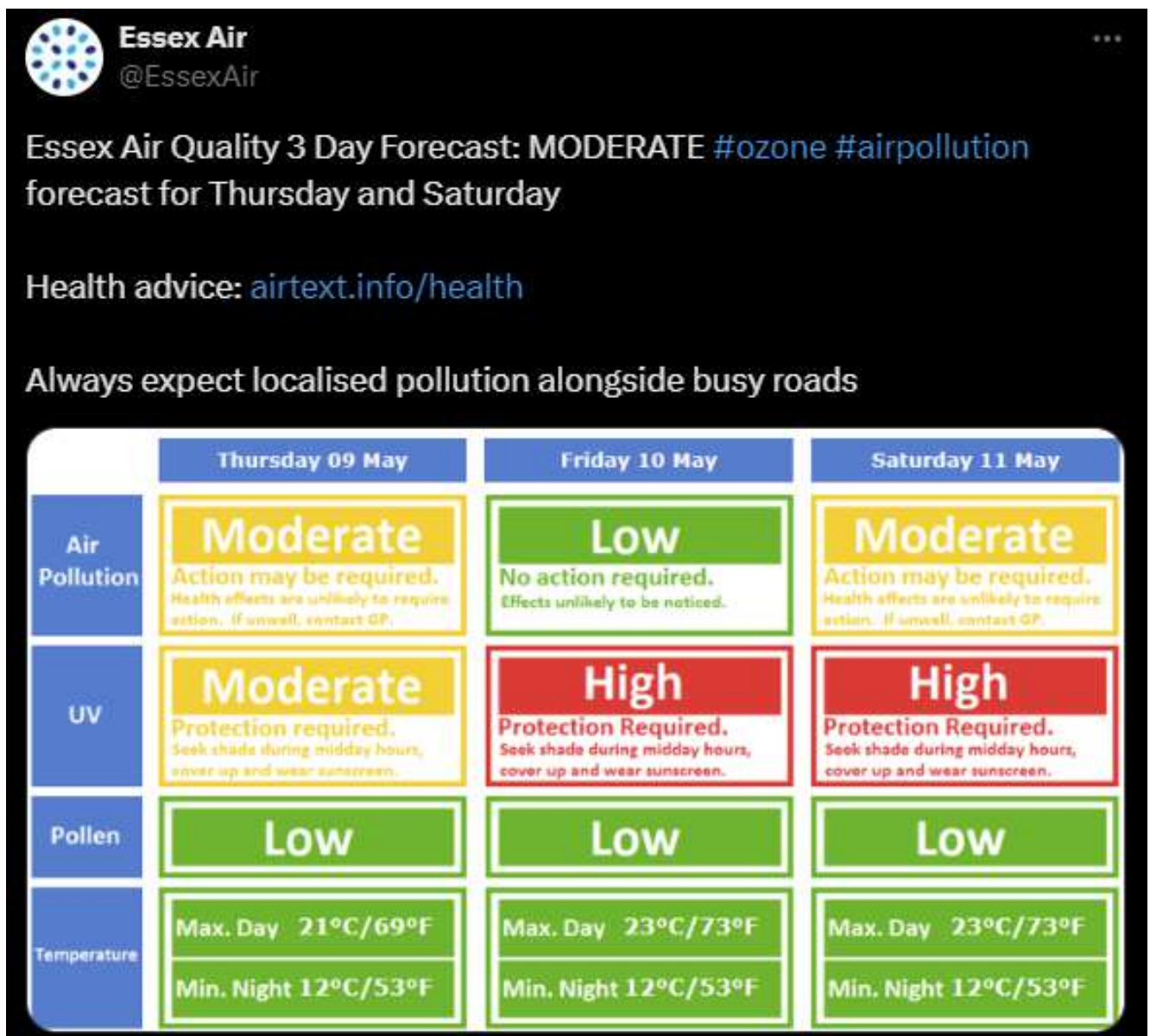The [@EssexAir](#) feed provides localised weekly air pollution, weather and pollen forecasts.

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1 Local Air Quality Management

This report provides an overview of air quality in Colchester during 2023. 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.

A summary of AQMAs declared by Colchester Borough Council and the amendments for 2024 can be found in Table 2.1. Appendix D: Maps of Monitoring Locations and AQMAs provides maps of 2023 AQMAs and also the air quality monitoring locations in relation to the AQMAs.

The air quality objectives pertinent to the current AQMA designations are as follows:

- NO_2 annual mean objective
- NO_2 1-hr objective

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 (at Relevant Exposure)	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Area 1 - Central Corridors	Declared May 2001, Amended February 2013	NO2 Annual Mean	High Street, Head Street, North Hill, Queen Street, St Botolph's Street, St Botolph's Circus, Osborne Street, Magdalen Street, Military Road, Mersea Road, Brook Street, East Street and St Johns Street	NO	65.9	41.0	N/A	Healthier Air for Colchester – Air Quality Action Plan 2016-2021	
Area 1 - Central Corridors	Declared May 2001, Amended February 2013	NO2 1 Hour Mean		NO	Annual Mean > 60 ug/m3	No Exceedance	9	Healthier Air for Colchester – Air Quality Action Plan 2016-2021	https://cbccrmdata.blob.core.windows.net/noteattachment/Colchester%20Air%20Quality%20Action%20Plan%2018-03-16.pdf
Area 2 - East Street and the adjoining lower end of Ipswich Road	Amended June 2018	NO2 Annual Mean	East Street and Ipswich Road	NO	45.2	No Exceedance	4	Healthier Air for Colchester – Air Quality Action Plan 2016-2021	
Area 4 - Lucy Lane North, Stanway	Declared January 2012, Amended February 2013 Revoked	NO2 Annual Mean	Lucy Lane North, Stanway	YES	55.3	No Exceedance	4	Healthier Air for Colchester – Air Quality Action Plan 2016-2021	

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

Colchester City Council are in the process of submitting a new draft AQAP to Defra in line with the extension to the AQAP deadline issued by Defra

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

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

Details of all current measures completed, in progress or planned are set out in Table 2.2. Thirteen measures are included within Table 2.2, with the type of measure and the progress Colchester City Council have made during the reporting year of 2023 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

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	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Development of a new Air Quality Action Plan	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2022	2024	Colchester City Council	Colchester City Council	NO	Funded	< £10k	Planning	Not quantified	Adoption of AQAP	Baseline Air Quality & Traffic Data being collected in AQMA	
2	St Botolphs Circus Roundabout	Transport Planning and Infrastructure	Other	2019	2025	Essex County Council	Essex County Council	NO	Funded	£1 million - £10 million	Autumn 2021	Not quantified	Reduced Congestion	Consultation complete. Further works likely to be included within Colchester Future Transport Strategy	
3	CAReless Pollution Campaign	Public Information	Other	2019	2025	Colchester City Council	Colchester City Council / Defra Air Quality Grant Funding	YES	Funded	<£30k	Implementation	Not quantified	N/A	Ongoing	Phase 3 underway with active travel being added to school toolkit, business elearning module developed & engagment carried out
4	Active Travel Project	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2021	2024	Colchester City Council	Colchester City Council	NO	Funded	< £10k	Implementation	Not quantified	N/A	The first phase of this work is an evaluation of Bikeability which is offered in schools. We will be looking at how it currently works and exploring ways to enhance it so we can get more children cycling and cycling more often.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
5	Colchester Future Transport Strategy	Traffic Management	Strategic highway improvements, Re-prioritising 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	£500k - £1 million	Implementation	Not quantified	N/A	Public Engagement	
6	Collection and analysis of Air Quality and transport data to develop traffic management measures	Traffic Management	UTC, Congestion management, traffic reduction	2016	2024	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	
7	Shared transport services	Alternatives to private vehicle use	Other	2021	2024	Colchester City Council	Defra air quality grant 2020/21	YES	Funded	£50k - £100k	Implementation	Not quantified	Take up of sustainable travel /reduction in car use	Car club and ebike/ecargo bike payg hire services now implemented and are being promoted and monitored.	
8	City to Home ecargo bike service	Freight and Delivery Management	Freight Partnerships for city centre deliveries	2022	2025	Colchester City Council	Colchester City Council with Defra grant 21/22	YES	Funded	£100k - £500k	Implementation	Not quantified	Take up of sustainable travel /reduction in car use	Project being restructured for delivery by Colchester eCargo, development of app, micro distribution centre and city to home delivery	
9	Package to support cycling Cycle Colchester website, map and engagement with schools, businesses and community	Alternatives to private vehicle use	Other	2023	2025	Colchester City Council	Colchester City Council with Defra grant 22/23	YES	Funded	£100k - £500k	Implementation	Not quantified	Take up of sustainable travel /reduction in car use	Cycle Colchester website and map under development. Community focused officer recruited.	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														Engagement taking place through events and with groups	
10	Walk with Words - wayfinding City Centre to University/student accomodation	Alternatives to private vehicle use	Other	2020	2024	Colchester City Council	Colchester City Council	NO	Funded	£100k - £500k	Implementation	Not quantified	Take up of sustainable travel /reduction in car use	16 Wayfinding posts due to be installed this year. Digital interactive content accessed from each post submitted by community and curated by Colchester Institute	
11	Phase 2 Fixing the Link	Alternatives to private vehicle use	Other	2022	2024	Colchester City Council	Colchester City Council	NO	Partially Funded	£100k - £500k	Implementation	Not quantifed	Take up of sustainable travel /reduction in car use	Roundabout and planting due this year to enhance the walking route from train station to city centre	
12	Try before you buy services eBikes and eCargo Bikes	Alternatives to private vehicle use	Other	2022	2025	Colchester City Council	Colchester City Council	YES	Funded	£10k - 50k	Implementation	Not quantified	Take up of sustainable travel /reduction in car use	Hire scheme for residents about to be launched. Currently being soft tested.	
13	City Centre Secure Bike Park and Bike Wise campaign	Alternatives to private vehicle use	Other	2022	2023	Colchester City Council	Colchester City Council/Essex County Council	NO	Partially Funded	£100k - £500k	Implementation	Not quantified	Take up of sustainable travel /reduction in car use	3 year trial launched in 2023 to give people cycling into city centre secure paring currently being promoted and monitored and a perment home for the park being looked for.	

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[6], 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 2023 models a maximum annual mean concentration of 11.5µg/m^3 in the Local Authority area.

The Public Health Outcomes Framework indicator D01 – Fraction of mortality attributable to particulate (PM$_{2.5}$) air pollution which for 2022 gave a value of 6.1%.

Figure 2.1 – Public Health Framework Indicator D01 Fraction of all-cause adult mortality attributable to anthropogenic particulate air pollution
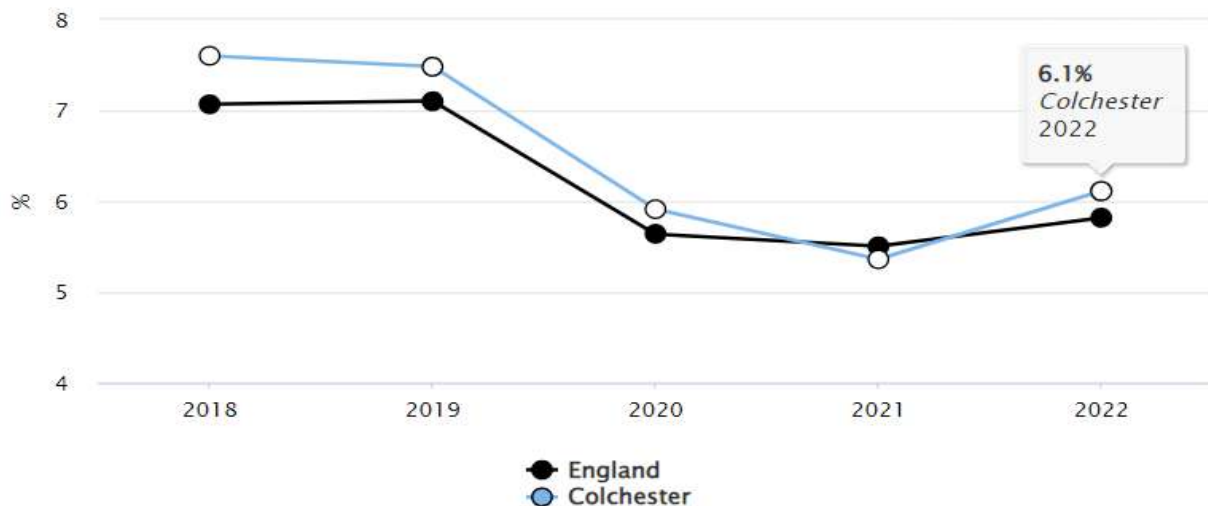
Colchester City Council is taking the following measures to address PM$_{2.5}$:

- 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.

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[6] 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 2023 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 2019 and 2023 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Colchester City Council undertook automatic (continuous) monitoring at 1 site during 2023. Table A.1 in Appendix A shows the details of the automatic monitoring sites.

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

Colchester City Council are considering discontinuing the automatic monitoring site in Brook Street at the end of 2024. The monitoring site will not be within the proposed AQMA and the diffusion tube sites and air quality sensor in Brook Street will 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 diffusion tube) monitoring of NO_2 at 59 sites during 2023. Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on 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.

In 2024, the diffusion tube monitoring network will be reduced in size from 59 sites to 38 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.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO$_2$ annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

The automatic monitoring station did not identify an exceedance of the 1-hr mean air quality objective and no diffusion tubes measured an annual mean in excess of 60µg/m^3. This provides evidence for the proposed revocation of the 1-hr NO2 component of AQMA1.

For diffusion tubes, the full 2023 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.

Figure A.2 – Trends in Annual Mean NO$_2$ Concentrations Brook Street in Appendix A compares the ratified continuous monitored NO$_2$ hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

Measured NO2 concentrations are continuing to fall and in 2023 there was only one marginal exceedance measured at relevant exposure. As described elsewhere in this report, Colchester City Council will be undertaking amendment of the AQMAs due to the improvements measured by the monitoring network.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Inlet Height (m)
CBC Auto1	Brook Street	Roadside	600571	225141	NOx, NO, NO2	Yes AQMA1	Chemiluminescent	0	3	1.5

Notes:

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

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Tube Co-located with a Continuous Analyser?	Tube Height (m)
CBC2	Fairfax Road, 1	Urban Background	599981	224633	NO2	NO	2.0	1.1	No	2.5
CBC3A, CBC3B, CBC3C	Mersea Road, 21	Roadside	599914	224643	NO2	YES AQMA1	0.3	1.9	No	2.5
CBC8	Shrub End Road, 105/107	Roadside	597640	223661	NO2	NO	17.0	1.2	No	2.5
CBC20	Papillon Road	Urban Background	599063	225097	NO2	NO	4.0	1.2	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)
CBC43	Magdalen Street	Roadside	600356	224763	NO2	YES AQMA1	9.0	0.4	No	2.5
CBC45A, CBC45B, CBC45C	Brook Street, 28/30	Roadside	600560	225181	NO2	YES AQMA1	0.0	1.0	No	2.5
CBC48	Queen Street, 35 (Chez Afrique)	Roadside	599908	224942	NO2	YES AQMA1	0.0	1.5	No	2.5
CBC54	Mersea Road, 10	Roadside	599922	224728	NO2	YES AQMA1	1.6	1.8	No	2.5
CBC62, CBC62A, CBC62B	Mersea Road, 9	Roadside	599923	224738	NO2	YES AQMA1	0.0	2.9	No	2.5
CBC63	Mersea Road, 12	Roadside	599921	224711	NO2	YES AQMA1	0.0	1.8	No	2.5
CBC65	Maldon Road, 99	Roadside	598797	224489	NO2	NO	8.0	0.4	No	2.5
CBC66	Brook Street RAB	Roadside	600622	224881	NO2	YES AQMA1	16.0	1.2	No	2.5
CBC68	Brook Street 60 (56)	Roadside	600589	225113	NO2	YES AQMA1	0.0	10.4	No	2.5
CBC69, CBC69A, CBC69B	Brook Street 23 (25)(21)	Roadside	600545	225205	NO2	YES AQMA1	0.0	1.1	No	2.5
CBC71	Osborne Street, 6	Roadside	599818	224924	NO2	YES AQMA1	0.0	2.1	No	2.5
CBC72	Ipswich Road. Old Coach House.	Roadside	600885	225441	NO2	YES AQMA2	9.0	1.9	No	2.5
CBC76	Harwich Road, 53	Roadside	601162	225471	NO2	NO	2.0	2.0	No	2.5
CBC88, CBC88A, CBC88B	Brook Street 48 (Auto Monitor)	Roadside	600571	225151	NO2	YES AQMA1	0.0	2.6	Yes	1.5

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)
CBC90	London Rd 170 Marks Tey	Roadside	591312	223431	NO2	NO	12.0	2.0	No	2.5
CBC91	Blackberry Rd 2	Urban Background	595239	223936	NO2	NO	3.0	2.0	No	2.5
CBC93	Butt Road 129	Roadside	599031	224427	NO2	NO	5.0	1.5	No	2.5
CBC94	Elmstead Rd 6	Roadside	601925	224652	NO2	NO	11.0	2.5	No	2.5
CBC97	Mill Rd 87	Roadside	599452	227884	NO2	NO	6.0	1.2	No	2.5
CBC98	Cowdray Av 154 (152)	Roadside	600086	226157	NO2	NO	4.0	1.0	No	2.5
CBC99	Ipswich Rd 130 (128)	Roadside	600891.32	225956.98	NO2	NO	0.0	15.5	No	2.5
CBC100	Harwich Road 175	Roadside	601252	225627	NO2	NO	12.0	1.5	No	2.5
CBC101	Ipswich Rd 50	Roadside	600868	225452	NO2	YES AQMA2	2.0	1.3	No	2.5
CBC102	East St 72	Roadside	600752	225313	NO2	YES AQMA2	0.0	1.0	No	2.5
CBC103	Brook St 74	Roadside	600607	225049	NO2	YES AQMA1	6.0	2.0	No	2.5
CBC104	Military Rd 37	Roadside	600193	224653	NO2	YES AQMA1	0.0	4.5	No	2.5
CBC105	East Hill 4A	Roadside	600224	225255	NO2	NO	1.0	1.0	No	2.5
CBC106	Mersea Rd 29 (Junc. with Lucas Road)	Roadside	599911	224558	NO2	YES AQMA1	1.5	0.1	No	2.5
CBC107	North Hill 49	Roadside	599389	225373	NO2	YES AQMA1	2.3	0.1	No	2.5
CBC108	North Station Rd 39	Roadside	599354	225802	NO2	NO	2.5	0.1	No	2.5
CBC109	North Hill, Strada (Middletons)	Roadside	599398	225432	NO2	YES AQMA1	0.0	1.5	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)
CBC110	Queen St Showboat (Slots)	Roadside	599891	225021	NO2	YES AQMA1	0.0	2.0	No	2.5
CBC111	St John's Street, Lemon Tree	Urban Centre	599473	224982	NO2	YES AQMA1	0.0	1.5	No	2.5
CBC112	High St George Hotel	Urban Centre	599730	225232	NO2	YES AQMA1	0.0	2.5	No	2.5
CBC113	Orchard Gardens	Roadside	600845	225671	NO2	NO	15.0	3.0	No	2.5
CBC115	Harwich Road 18 (24)	Roadside	601083	225387	NO2	NO	0.0	7.0	No	2.5
CBC116	Harwich Road 19	Roadside	601115	225355	NO2	NO	0.0	12.0	No	2.5
CBC117	High Street 71	Roadside	599984	225238	NO2	NO	0.0	2.0	No	2.5
CBC118	North Station Road 120	Roadside	599269	226122	NO2	NO	0.0	2.0	No	2.5
CBC119	Claremont Heights	Roadside	599230	226272	NO2	NO	0.0	2.0	No	2.5
CBC123	Bergholt Road 131	Roadside	598938	226707	NO2	NO	0.0	3.8	No	2.5
CBC124	East Hill 58	Roadside	600516	225277	NO2	YES AQMA1	0.0	2.0	No	2.5
CBC125	Bergholt Road 6	Roadside	599226.52	226508.71	NO2	NO	0.0	1.0	No	2.5
CBC127	Brook St. West side Jun with East Hill (Hairdresser)	Roadside	600537.22	225241.99	NO2	YES AQMA1	0.0	1.0	No	2.5
CBC128	Brook St. East side jun with East Hill	Roadside	600546.54	225244.33	NO2	YES AQMA1	0.0	1.0	No	2.5
CBC129	Brook Street 33/35	Roadside	600550	225183	NO2	YES AQMA1	0.0	1.0	No	2.5
CBC130	Osbourne Street 43 (Taxi)	Roadside	599701	224964	NO2	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)
CBC131	Lucy Lane North Tree	Roadside	595025	225166	NO2	YES AQMA4	0.0	12.0	No	2.5
CBC132	Lucy Lane South Lampost	Roadside	595106.06	225123	NO2	NO	0.0	15.0	No	2.5
CBC135	Coggeshall Rd 11 Bridge Farm	Roadside	591366	223679	NO2	NO	0.0	9.0	No	2.5
CBC136	Coggeshall Rd 85	Roadside	590444	223502	NO2	NO	1.0	1.0	No	2.5
CBC137	Coggeshall Rd 93B	Roadside	590325	223495	NO2	NO	0.0	3.0	No	2.5
CBC21, CBC138, CBC139	Head Street	Roadside	599413	225056	NO2	YES AQMA1	2.0	0.6	No	2.5
CBC144	Mill Rd 237	Roadside	599896	228282	NO2	NO	0.0	5.5	No	2.5
CBC145	Halstead Road 53 (The Chase - spur)	Roadside	596040	225284	NO2	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.3 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2023 (%) [2]	2019	2020	2021	2022	2023
CBC Auto1	600571	225141	Roadside	98.9	98.9	26.44	21.76	23	23	20.9

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

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

☒ **Where exceedances of the NO₂ annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2023**

Notes:

The annual mean concentrations are presented as µg/m³.

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

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%).

Table A.4 – 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 2023 (%) [2]	2019	2020	2021	2022	2023
CBC2	599981	224633	Urban Background	90.38461538	90.4	30.0	24.3	23.6	19.8	21.8
CBC3A, CBC3B, CBC3C	599914	224643	Roadside	90.38461538	90.4	**55.4**	**43.9**	**46.4**	**41.3**	**42.0**
CBC8	597640	223661	Roadside	90.38461538	90.4	22.1	15.5	16.8	15.3	16.3
CBC20	599063	225097	Urban Background	82.69230769	82.7	19.5	14.1	17.1	11.9	12.7
CBC43	600356	224763	Roadside	90.38461538	90.4	32.5	25.4	25.0	22.1	22.7
CBC45A, CBC45B, CBC45C	600560	225181	Roadside	90.38461538	90.4	**44.0**	35.3	38.4	35.5	36.5
CBC48	599908	224942	Roadside	90.38461538	90.4	39.9	30.3	30.9	26.3	29.6
CBC54	599922	224728	Roadside	90.38461538	90.4	**42.8**	35.1	37.8	33.0	31.1
CBC62, CBC62A, CBC62B	599923	224738	Roadside	90.38461538	90.4	**40.7**	31.8	35.2	30.8	31.8
CBC63	599921	224711	Roadside	74.45054945	74.5	**45.0**	37.4	39.7	35.5	36.7
CBC65	598797	224489	Roadside	84.89010989	84.9	23.4	17.6	18.3	16.0	18.0
CBC66	600622	224881	Roadside	90.38461538	90.4	25.6	19.5	18.7	16.2	19.5
CBC68	600589	225113	Roadside	90.38461538	90.4	26.8	19.1	21.8	17.1	18.8
CBC69, CBC69A, CBC69B	600545	225205	Roadside	68.95604396	69.0	**45.0**	38.3	34.5	33.5	37.8
CBC71	599818	224924	Roadside	80.76923077	80.8	**46.5**	37.8	**40.2**	36.2	36.2
CBC72	600885	225441	Roadside	90.38461538	90.4	29.2	21.4	24.3	22.7	23.9
CBC76	601162	225471	Roadside	90.38461538	90.4	30.6	23.8	25.9	21.0	22.3
CBC88, CBC88A, CBC88B	600571	225151	Roadside	90.38461538	90.4	25.9	22.2	20.7	18.2	19.5
CBC90	591312	223431	Roadside	90.38461538	90.4	26.7	17.5	17.5	16.3	17.5

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 2023 (%) [2]	2019	2020	2021	2022	2023
CBC91	595239	223936	Urban Background	90.38461538	90.4	21.2	16.6	15.9	14.1	15.0
CBC93	599031	224427	Roadside	74.45054945	74.5	20.4	14.4	14.5	12.6	14.4
CBC94	601925	224652	Roadside	90.38461538	90.4	26.8	20.3	21.1	17.2	19.3
CBC97	599452	227884	Roadside	90.38461538	90.4	26.8	19.8	19.3	16.7	18.7
CBC98	600086	226157	Roadside	90.38461538	90.4	21.9	16.7	18.7	16.0	15.9
CBC99	600891.32	225956.98	Roadside	90.38461538	90.4	22.7	16.5	15.3	15.7	15.3
CBC100	601252	225627	Roadside	90.38461538	90.4	28.5	22.0	20.3	17.8	18.6
CBC101	600868	225452	Roadside	90.38461538	90.4	32.7	24.5	28.0	25.3	29.3
CBC102	600752	225313	Roadside	80.76923077	80.8	**40.8**	31.3	36.2	29.0	30.3
CBC103	600607	225049	Roadside	90.38461538	90.4	26.8	20.3	23.6	18.1	20.7
CBC104	600193	224653	Roadside	90.38461538	90.4	29.7	22.9	21.9	20.0	21.4
CBC105	600224	225255	Roadside	74.45054945	74.5	34.0	26.0	26.1	23.1	27.9
CBC106	599911	224558	Roadside	90.38461538	90.4	35.9	34.2	33.4	29.8	31.3
CBC107	599389	225373	Roadside	90.38461538	90.4	32.3	28.3	24.1	22.6	23.3
CBC108	599354	225802	Roadside	90.38461538	90.4	29.9	23.5	25.0	21.2	21.1
CBC109	599398	225432	Roadside	90.38461538	90.4	34.5	29.9	29.6	25.1	23.6
CBC110	599891	225021	Roadside	74.45054945	74.5	32.4	24.2	26.7	20.9	23.9
CBC111	599473	224982	Urban Centre	90.38461538	90.4	**44.2**	37.3	37.3	30.7	32.2
CBC112	599730	225232	Urban Centre	90.38461538	90.4	30.4	19.2	19.9	22.2	23.9
CBC113	600845	225671	Roadside	90.38461538	90.4	26.2	19.2	21.0	19.5	20.0
CBC115	601083	225387	Roadside	90.38461538	90.4	27.5	20.4	20.1	19.4	20.4
CBC116	601115	225355	Roadside	90.38461538	90.4	21.1	16.2	14.5	13.1	14.4
CBC117	599984	225238	Roadside	59.34065934	59.3	**41.7**	33.5	31.8	30.3	27.8
CBC118	599269	226122	Roadside	90.38461538	90.4	30.1	25.2	23.6	20.2	22.5
CBC119	599230	226272	Roadside	90.38461538	90.4	22.1	15.6	15.7	13.7	16.5
CBC123	598938	226707	Roadside	90.38461538	90.4	22.0	17.0	16.3	13.9	15.5
CBC124	600516	225277	Roadside	82.69230769	82.7	39.0	28.4	32.1	29.2	31.3
CBC125	599226.52	226508.71	Roadside	90.38461538	90.4	34.7	26.8	26.6	24.5	26.8
CBC127	600537.22	225241.99	Roadside	90.38461538	90.4	**43.2**	35.1	32.9	32.0	28.2
CBC128	600546.54	225244.33	Roadside	90.38461538	90.4	31.4	24.4	25.7	20.8	23.7
CBC129	600550	225183	Roadside	66.75824176	66.8	**45.3**	**40.0**	**41.3**	36.0	38.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2023 (%) [2]	2019	2020	2021	2022	2023
CBC130	599701	224964	Roadside	82.69230769	82.7	**41.0**	34.2	**N/A**	30.3	34.7
CBC131	595025	225166	Roadside	90.38461538	90.4	**41.0**	34.2	27.6	24.5	28.5
CBC132	595106.06	225123	Roadside	90.38461538	90.4	39.8	31.7	26.9	22.6	28.5
CBC135	591366	223679	Roadside	74.45054945	74.5	32.5	25.6	23.8	19.6	18.2
CBC136	590444	223502	Roadside	84.89010989	84.9	30.6	22.2	24.4	23.2	20.3
CBC137	590325	223495	Roadside	90.38461538	90.4	37.9	28.5	33.3	22.4	21.9
CBC21, CBC138, CBC139	599413	225056	Roadside	68.95604396	69.0	**44.6**	32.4	39.1	33.0	34.9
CBC144	599896	228282	Roadside	90.38461538	90.4	**N/A**	**N/A**	**N/A**	**N/A**	13.3
CBC145	596040	225284	Roadside	90.38461538	90.4	**N/A**	**N/A**	**N/A**	**N/A**	20.5

☒ **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%).

Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2023 (%) [2]	2019	2020	2021	2022	2023
CBC Auto1	600571	225141	Roadside	98.9	98.9	0	0	0	0	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m³ have been recorded.

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

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

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

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

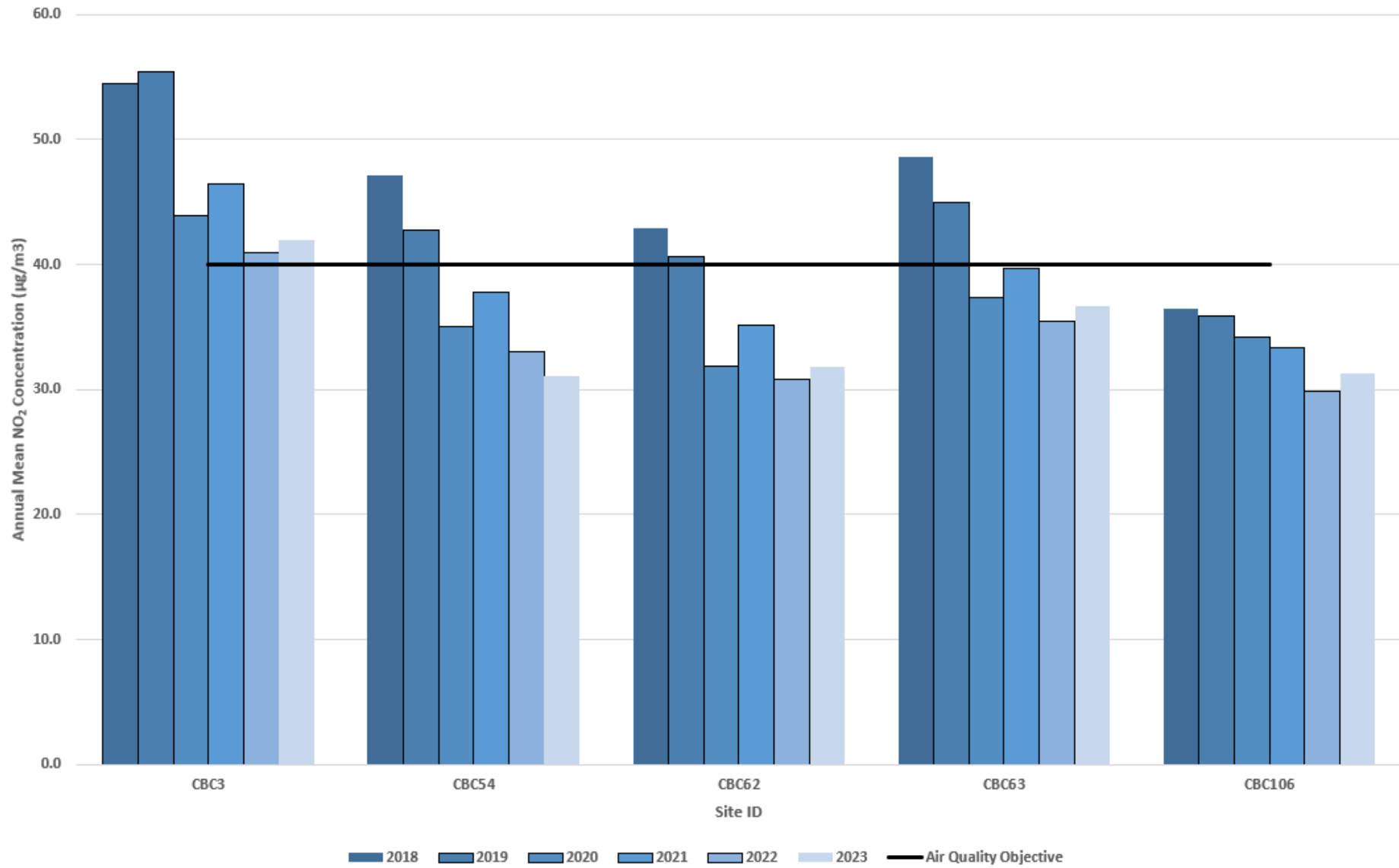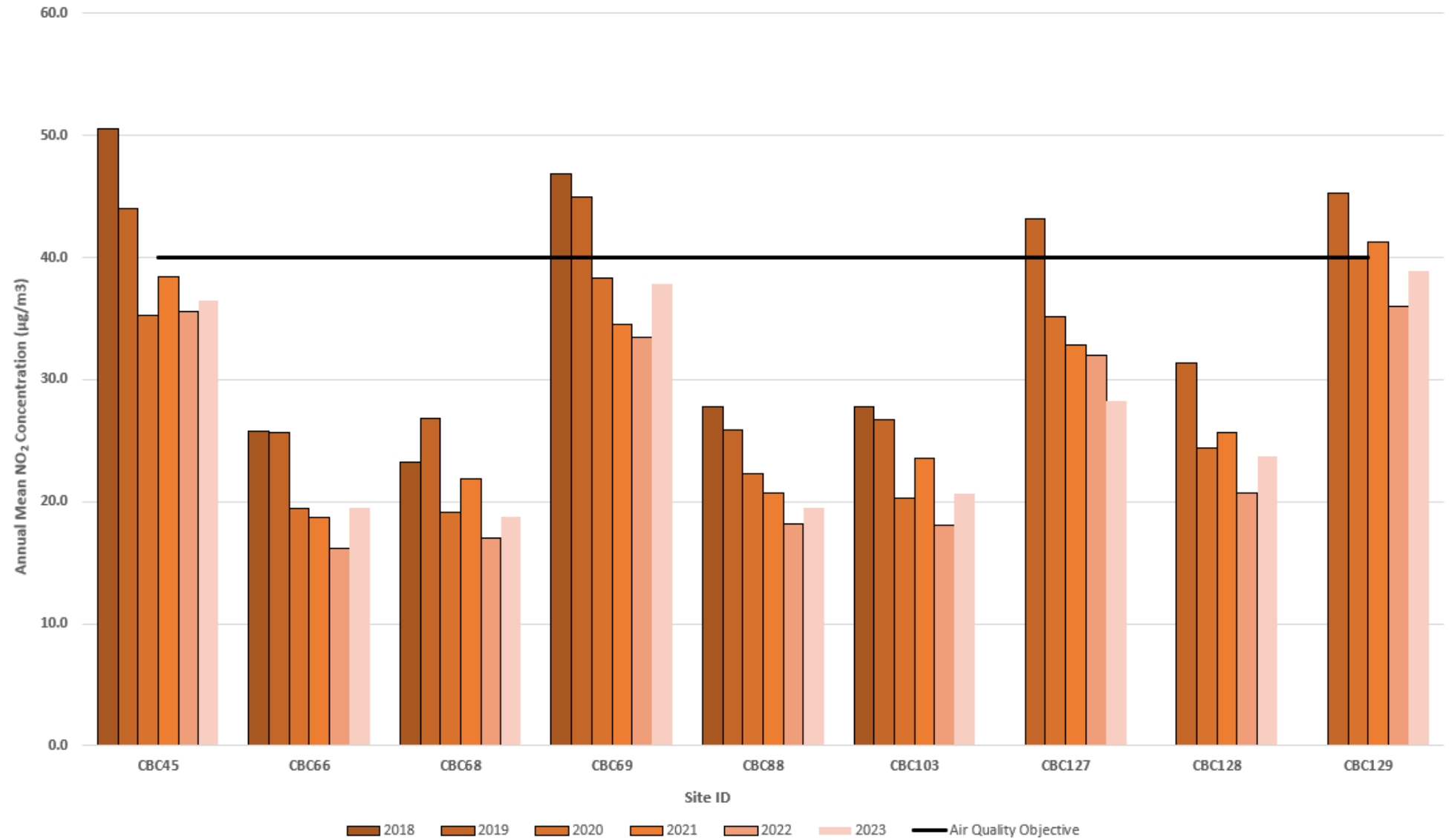**Figure A.1 – Trends in Annual Mean NO₂ Concentrations Mersea Road**

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

Appendix B: Full Monthly Diffusion Tube Results for 2023

Table B.1 – NO₂ 2023 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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
CBC2	599981	224633	38.8	36.2	Lost In Post	17.9	19.6	18.9	23.5	23.9	32.0	35.3		32.6	28.3	21.8	-	
CBC3A	599914	224643	47.8	55.7	Lost In Post	51.4	59.2	64.3	53.4	59.7	70.4	41.5		34.0	-	-	-	Triplicate Site with CBC3A, CBC3B and CBC3C - Annual data provided for CBC3C only
CBC3B	599914	224643	52.4	51.5	Lost In Post	47.4	56.3	61.1	55.5	58.5	Erroneous Data Point Removed	55.5		33.8	-	-	-	Triplicate Site with CBC3A, CBC3B and CBC3C - Annual data provided for CBC3C only
CBC3C	599914	224643	52.5	54.6	Lost In Post	56.6	52.9	53.1	52.6	39.1	76.1	51.3		34.2	54.5	**42.0**	**41.0**	Triplicate Site with CBC3A, CBC3B and CBC3C - Annual data provided for CBC3C only
CBC8	597640	223661	26.2	21.2	Lost In Post	16.2	15.6	16.4	18.2	18.3	25.3	26.2		22.4	21.1	16.3	-	
CBC20	599063	225097	21.5	18.0	Lost In Post	15.3	Missing	12.3	10.1	11.8	17.7	22.4		14.3	16.5	12.7	-	
CBC21	599413	225056	43.3	53.4	Lost In Post	29.2	53.3	50.1	32.4	41.9	36.6	Missing		Missing	-	-	-	Triplicate Site with CBC21, CBC138 and CBC139 - Annual data provided for CBC139 only
CBC43	600356	224763	36.0	26.4	Lost In Post	30.5	27.0	22.3	26.4	28.2	37.1	31.5		23.8	29.4	22.7	-	
CBC45A	600560	225181	51.2	56.5	Lost In Post	52.7	58.2	56.0	23.7	46.2	61.6	43.7		26.6	-	-	-	Triplicate Site with CBC45A, CBC45B and CBC45C - Annual data provided for CBC45C only
CBC45B	600560	225181	50.2	56.2	Lost In Post	54.9	57.1	59.0	37.4	44.8	57.1	47.3		23.9	-	-	-	Triplicate Site with CBC45A, CBC45B and CBC45C - Annual data provided for CBC45C only
CBC45C	600560	225181	48.3	47.9	Lost In Post	34.8	57.0	55.6	34.6	41.8	58.2	33.6		26.3	47.4	36.5	-	Triplicate Site with CBC45A, CBC45B and CBC45C - Annual data provided for CBC45C only
CBC48	599908	224942	43.6	41.8	Lost In Post	39.0	38.6	20.1	33.9	37.2	46.5	44.9		30.1	38.4	29.6	-	
CBC54	599922	224728	47.2	46.1	Lost In Post	43.2	41.8	46.9	38.4	25.3	36.8	43.5		34.1	40.5	31.1	-	
CBC62	599923	224738	37.7	35.2	Lost In Post	43.7	45.9	47.5	33.3	34.9	53.5	37.1		28.4	-	-	-	Triplicate Site with CBC62, CBC62A and CBC62B - Annual data provided for CBC62B only
CBC62A	599923	224738	34.6	48.0	Lost In Post	45.4	44.7	43.5	32.2	40.1	54.6	42.0		20.5	-	-	-	Triplicate Site with CBC62, CBC62A and CBC62B - Annual data provided for CBC62B only

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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
CBC62B	599923	224738	33.9	43.5	Lost In Post	44.7	44.4	44.1	37.0	41.1	59.5	38.4		21.8	41.3	31.8	-	Triplicate Site with CBC62, CBC62A and CBC62B - Annual data provided for CBC62B only
CBC63	599921	224711	37.2	54.9	Lost In Post	58.2	52.1	47.0	41.9	47.1	55.5	Missing		26.2	47.7	36.7	-	
CBC65	598797	224489	32.5	30.0	Lost In Post	19.6	21.7	20.4	16.3	17.5	26.2	25.1		Missing	23.4	18.0	-	
CBC66	600622	224881	30.9	33.0	Lost In Post	16.8	19.0	36.7	19.2	19.4	28.1	25.4		19.9	25.3	19.5	-	
CBC68	600589	225113	31.7	31.0	Lost In Post	21.8	23.6	23.6	16.5	19.9	27.8	26.1		17.5	24.4	18.8	-	
CBC69	600545	225205	53.8	48.7	Lost In Post	41.0	41.0	41.5	46.1	42.6	55.8	Missing		Missing	-	-	-	Triplicate Site with CBC69, CBC69A and CBC69B - Annual data provided for CBC69B only
CBC69A	600545	225205	57.2	58.8	Lost In Post	31.9	39.4	42.9	45.3	43.2	76.1	Missing		Missing	-	-	-	Triplicate Site with CBC69, CBC69A and CBC69B - Annual data provided for CBC69B only
CBC69B	600545	225205	57.7	56.6	Lost In Post	41.4	37.9	41.0	52.6	42.1	58.2	Missing		Missing	48.5	37.8	-	Triplicate Site with CBC69, CBC69A and CBC69B - Annual data provided for CBC69B only
CBC71	599818	224924	44.7	57.8	Lost In Post	49.6	49.7	49.1	37.5	missing	52.9	46.1		28.4	47.0	36.2	-	
CBC72	600885	225441	36.4	34.4	Lost In Post	25.5	31.2	27.1	22.6	27.7	38.5	34.4		25.9	31.0	23.9	-	
CBC76	601162	225471	39.5	35.9	Lost In Post	20.1	28.5	25.4	21.3	22.3	31.6	34.3		24.3	28.9	22.3	-	
CBC88	600571	225151	28.1	34.3	Lost In Post	22.0	19.5	22.3	21.5	20.3	29.9	28.2		25.1	-	-	-	Triplicate Site with CBC88, CBC88A and CBC88B - Annual data provided for CBC88B only
CBC88A	600571	225151	35.5	31.2	Lost In Post	21.6	20.6	19.8	20.5	22.8	30.5	25.9		19.0	-	-	-	Triplicate Site with CBC88, CBC88A and CBC88B - Annual data provided for CBC88B only
CBC88B	600571	225151	21.3	33.9	Lost In Post	21.9	20.9	20.6	19.4	21.8	36.8	28.9		Missing	25.3	19.5	-	Triplicate Site with CBC88, CBC88A and CBC88B - Annual data provided for CBC88B only
CBC90	591312	223431	20.1	24.2	Lost In Post	18.7	20.1	23.6	20.7	24.3	30.0	22.0		19.3	22.7	17.5	-	
CBC91	595239	223936	24.9	22.3	Lost In Post	14.3	15.3	13.9	14.8	14.4	31.6	20.6		18.9	19.5	15.0	-	
CBC93	599031	224427	23.4	23.8	Lost In Post	14.8	12.5	14.4	13.3	12.1	30.9	Missing		20.2	18.7	14.4	-	
CBC94	601925	224652	31.5	32.7	Lost In Post	20.4	22.6	20.4	19.3	21.3	28.1	27.1		26.7	25.1	19.3	-	
CBC97	599452	227884	33.6	34.3	Lost In Post	22.5	19.6	19.4	17.8	19.3	30.0	25.0		19.8	24.3	18.7	-	
CBC98	600086	226157	28.7	25.8	Lost In Post	14.4	15.1	14.6	17.7	17.9	25.9	23.2		19.2	20.6	15.9	-	
CBC99	600891	225957	24.9	25.5	Lost In Post	17.5	15.9	18.3	16.2	16.5	25.4	17.9		22.1	19.9	15.3	-	

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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
CBC100	601252	225627	34.0	27.4	Lost In Post	21.0	19.7	19.2	21.6	17.6	25.9	27.8		25.1	24.1	18.6	-
CBC101	600868	225452	44.8	47.0	Lost In Post	33.3	34.9	31.6	33.6	32.2	41.1	43.7		32.6	38.1	29.3	-
CBC102	600752	225313	45.9	45.3	Lost In Post	36.2	49.8	Missing	34.1	39.3	30.9	40.7		32.6	39.4	30.3	-
CBC103	600607	225049	32.9	33.2	Lost In Post	24.5	23.7	39.9	18.2	22.2	29.9	23.5		19.6	26.9	20.7	-
CBC104	600193	224653	33.4	38.1	Lost In Post	25.2	21.5	21.3	27.1	24.1	38.5	25.8		20.5	27.8	21.4	-
CBC105	600224	225255	37.3	40.2	Lost In Post	27.9	25.2	29.7	29.7	30.5	63.3	Missing		31.4	36.2	27.9	-
CBC106	599911	224558	47.8	50.2	Lost In Post	33.2	33.3	36.3	37.0	34.9	47.8	45.7		32.3	40.7	31.3	-
CBC107	599389	225373	32.0	41.6	Lost In Post	21.5	21.6	29.6	28.3	24.7	37.1	35.2		21.5	30.3	23.3	-
CBC108	599354	225802	31.8	24.9	Lost In Post	25.0	30.9	33.5	21.0	24.7	34.6	24.8		19.9	27.5	21.1	-
CBC109	599398	225432	33.1	34.3	Lost In Post	30.6	29.8	31.3	27.6	29.8	21.8	37.6		25.4	30.6	23.6	-
CBC110	599891	225021	37.5	40.7	Lost In Post	26.3	24.9	22.6	36.5	25.0	37.7	Missing		27.4	31.0	23.9	-
CBC111	599473	224982	50.9	52.8	Lost In Post	40.1	53.3	15.6	37.7	43.5	53.1	34.8		45.6	41.8	32.2	-
CBC112	599730	225232	37.9	43.1	Lost In Post	25.7	27.4	26.6	21.8	29.1	34.0	32.7		31.1	31.1	23.9	-
CBC113	600845	225671	29.7	30.3	Lost In Post	25.3	20.8	21.0	22.5	24.4	34.6	27.2		17.4	25.9	20.0	-
CBC115	601083	225387	37.1	34.0	Lost In Post	21.9	23.2	19.6	21.0	21.9	30.3	30.0		21.5	26.5	20.4	-
CBC116	601115	225355	24.4	28.3	Lost In Post	14.3	15.4	15.0	12.2	14.0	22.6	21.0		17.0	18.7	14.4	-
CBC117	599984	225238	43.8	32.8	Lost In Post	29.1	29.5	Missing	28.0	39.0	47.8	Missing		Missing	36.5	27.8	-
CBC118	599269	226122	31.5	39.5	Lost In Post	22.0	24.2	23.0	26.6	24.5	37.1	31.6		29.3	29.3	22.5	-
CBC119	599230	226272	21.2	22.3	Lost In Post	16.0	16.5	16.5	13.4	17.6	48.4	18.8		14.1	21.4	16.5	-
CBC123	598938	226707	25.0	26.2	Lost In Post	19.2	18.6	17.8	13.0	15.5	23.1	23.2		15.7	20.1	15.5	-
CBC124	600516	225277	41.8	45.0	Lost In Post	37.1	45.0	43.7	Missing	36.0	48.7	37.5		28.1	40.7	31.3	-
CBC125	599227	226509	36.5	37.2	Lost In Post	31.4	37.9	36.4	26.9	31.0	45.3	35.8		20.7	34.8	26.8	-
CBC127	600537	225242	47.8	40.7	Lost In Post	43.2	38.1	41.3	43.2	38.9	28.8	21.7		43.0	36.7	28.2	-
CBC128	600547	225244	40.0	37.7	Lost In Post	22.4	25.0	23.2	20.9	22.8	31.6	44.0		28.6	30.8	23.7	-
CBC129	600550	225183	43.6	60.7	Lost In Post	39.4	Missing	47.1	47.4	46.5	63.8	Missing		50.8	50.4	38.9	-
CBC130	599701	224964	48.2	54.2	Lost In Post	Missing	43.1	40.6	40.9	42.2	51.2	43.4		41.4	45.1	34.7	-
CBC131	595025	225166	41.2	37.8	Lost In Post	34.2	28.3	30.9	47.5	39.0	30.9	42.0		36.3	37.0	28.5	-
CBC132	595106	225123	36.6	44.6	Lost In Post	31.1	40.3	35.2	34.7	29.6	53.1	30.1		38.0	37.1	28.5	-

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 (0.77)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
CBC135	591366	223679	22.7	29.2	Lost In Post	15.1	22.7	23.1	20.1	24.6	30.6	Missing		20.1	23.6	18.2	-	
CBC136	590444	223502	30.5	36.4	Lost In Post	18.2	28.6	25.0	23.1	29.6	19.9	27.1		Missing	26.3	20.3	-	
CBC137	590325	223495	31.5	34.1	Lost In Post	24.0	25.7	24.2	26.0	28.2	33.8	29.6		23.4	28.5	21.9	-	
CBC138	599413	225056	41.8	36.3	Lost In Post	48.1	53.0	50.6	31.5	40.5	52.4	Missing		Missing	-	-	-	Triplicate Site with CBC21, CBC138 and CBC139 - Annual data provided for CBC139 only
CBC139	599413	225056	41.6	49.4	Lost In Post	47.5	55.3	50.3	34.5	43.6	54.1	Missing		Missing	44.9	34.9	-	Triplicate Site with CBC21, CBC138 and CBC139 - Annual data provided for CBC139 only
CBC144	599896	228282	23.6	23.8	Lost In Post	15.1	15.1	15.7	13.6	15.6	20.4	14.9		16.1	17.2	13.3	-	
CBC145	596040	225284	35.0	26.9	Lost In Post	26.7	32.0	26.9	21.1	23.1	32.8	23.5		15.8	26.6	20.5	-	

☒ **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 confirms that all 2023 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 2023

Colchester City Council has not identified any significant new sources relating to air quality within the reporting year of 2023.

Additional Air Quality Works Undertaken by Colchester City Council During 2023

Essex Highways have installed nine air quality sensors within the city centre AQMAs 1 and 2. These sensors are colocated with Vivacity traffic monitoring sensors which can detect and classify a wide range of transport modes, from pedestrians, cyclists and e-scooters to cars, buses and HGVs. The air quality data, combined with traffic data and meteorological data will enable advanced air quality analysis using the OpenAir software package to identify potential traffic management interventions.

Table C.1 – 2022 – 2023 Air Quality Sensor Monitoring (NO2)

Site ID	2023 Valid Data Capture	2022 Annual Mean Concentration ($\mu g/m^3$)	2023 Annual Mean Concentration ($\mu g/m^3$)
A	100.0%	**23.9**	20.7
B	68.6%	33.0	**30.2**
C	100.0%	31.4	32.3
D	92.4%	20.6	21.6
E	100.0%	21.4	23.3
F	100.0%	30.7	27.7
G	6.1%	**44.5**	31.1
H	100.0%	28.0	26.8
I	100.0%	13.3	10.8
* Bold & italics indicates value is annualised due to having data capture below 75% for the year.			

Site location B had low valid data capture due to issues with the power supply. Site locations G and I had low valid data capture due to issues with noise generated by the sensors causing complaints from local residents. Sensor G was removed due to ongoing complaints.

2023 Air Quality Management Area (AQMA) Revocation & Amendment Report

Colchester currently has three declared Air Quality Management Areas (AQMA). The AQMA order can be viewed in Appendix 1.

The designated areas incorporate (either fully or in part):

- Area 1 – High Street Colchester, Head Street, North Hill, Queen Street, St. Botolph's Street, St. Botolph's Circus, Osborne Street, Magdalen Street, Military Road, Mersea Road, Brook Street, East Street and St. Johns Street.
- Area 2 – East Street and Ipswich Road
- Area 4 – Lucy Lane North, Stanway

Areas 1, 2, and 4 are designated in relation to a likely breach of the nitrogen dioxide annual mean objective as specified in the Air Quality Regulations 2000.

The Local Air Quality Management (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.

Colchester City Council undertakes air quality monitoring to comply with LAQM duties set out by Defra. This monitoring has identified significant reductions in monitored NO2.

The Defra Technical Guidance TG.22 sets out that the revocation of an AQMA should be considered following three consecutive years of compliance, which for diffusion tubes would be 10% below the relevant objective at the point of exposure (i.e., following fall off with distance adjustment). Where there have been no exceedances for the past five years, local authorities must proceed with plans to revoke the AQMA.

The majority of monitoring locations across Colchester have complied with the air quality objectives and therefore the AQMA at those locations should be revoked. For those areas where exceedances have been measured more recently, the 2023 Air Quality Management Area (AQMA) Revocation & Amendment Report sets out the following:

- In 2022 the maximum concentration measured in Colchester was 41.3µg/m^3 only marginally above the NO2 annual mean air quality objective of 40µg/m^3.

- In 2022 there were no exceedances in Brook Street, however the maximum monitored levels do not yet reach the threshold for considering complete revocation of the AQMA. It is proposed to reduce the AQMA in size along Brook Street where monitoring has indicated compliance.

- In 2022 there were no exceedances in Osborne Street or St Johns Street however, the monitored levels do not yet reach the threshold for considering revocation of the AQMA.

In 2022, Mersea Road did exceed the annual mean Air Quality Objectives so this has not been considered for revocation.

These findings have informed the proposal to:

- Revoke areas of AQMA 1 where exceedances have not occurred for 5 years
- Create 3 AQMAs from the remaining areas of AQMA
  - Brook Street
  - Mersea Road
  - Osborne Street & St John's Street
- Fully revoke AQMAs 2 & 4

Table C.2 – Proposed Air Quality Management Areas

AQMA Name	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	NO2 Annual Mean	Parts of Brook Street and junction with East Street and East Hill	No	No Exceedance	No Exceedance	2	In Development	N/A
Mersea Road AQMA	NO2 Annual Mean	Parts of Mersea Road	No	42µg/m3	41µg/m3	0		
Osborne Street and St John's Street AQMA	NO2 Annual Mean	Parts of Osborne Street & St Johns Street	No	No Exceedance	No Exceedance	2		

These proposed AQMAs are set out in maps shown in Appendices G, H and I.

QA/QC of Diffusion Tube Monitoring

- Colchester City Council undertook monitoring at 59 sites in 2023.

- Colchester City Council adheres with the Diffusion Tube Monitoring Calendar

- The diffusion tubes were supplied by Socotec (UKAS Testing Laboratory number 1015) with a preparation method of 50% triethanolamine (TEA) in Acetone.

- The AIR NO_2 proficiency testing scheme found that for 2023, 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.

Table C.3 – Annualisation Summary (concentrations presented in µg/m³)

Site ID	Annualisation Factor <Site 1 Name>	Annualisation Factor <Site 2 Name>	Annualisation Factor <Site 3 Name>	Annualisation Factor <Site 4 Name>	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
CBC21	0.9994	0.9736	1.0599		1.0110	-	-
CBC63	1.0153	0.9948	1.0773		1.0291	47.7	-
CBC69	0.9994	0.9736	1.0599		1.0110	-	-
CBC69A	0.9994	0.9736	1.0599		1.0110	-	-
CBC69B	0.9994	0.9736	1.0599		1.0110	48.5	49.0
CBC93	1.0153	0.9948	1.0773		1.0291	18.7	-
CBC105	1.0153	0.9948	1.0773		1.0291	36.2	-
CBC110	1.0153	0.9948	1.0773		1.0291	31.0	-
CBC117	0.9698	0.9704	1.0247		0.9883	36.5	36.1
CBC129	0.9888	0.9714	1.0417		1.0006	50.4	50.5
CBC135	1.0153	0.9948	1.0773		1.0291	23.6	-
CBC138	0.9994	0.9736	1.0599		1.0110	-	-
CBC139	0.9994	0.9736	1.0599		1.0110	44.9	45.4

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2023 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.

Colchester City Council have applied the national bias adjustment factor of 0.77 to the 2023 monitoring data to maintain consistency with Councils in Essex. A summary of bias adjustment factors used by Colchester City Council over the past five years is in Table C..

Table C.4 – Bias Adjustment Factor

Monitoring Year	Local or National	Diffusion Tube Preparation	Version of National Spreadsheet	Adjustment Factor
2023	National	Socotec 50% TEA in Acetone	03/24	0.77
2022	National	Socotec 50% TEA in Acetone	03/23	0.78
2021	National	Socotec 50% TEA in Acetone	03/22	0.77
2020	National	Socotec 50% TEA in Acetone	03/21	0.77
2019	National	Socotec 50% TEA in Acetone	03/20	0.75

NO$_2$ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO$_2$ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO$_2$ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO$_2$ concentrations corrected for distance are presented in Table B.1.

Table C.5 – Non-Automatic NO$_2$ Fall off With Distance Calculations (concentrations presented in µg/m^3)

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	42.0	13.3	**41.0**

QA/QC of Automatic Monitoring

Air quality measurements taken at the Brook Street air quality monitoring station undergo validation and ratification by the Air Quality Data Management (AQDM), adhering to the standards outlined in the Local Air Quality Management – Technical Guidance LAQM (TG16).

Validation Process

During the data collection stage, the validation process involves continuous algorithmic and manual screening of data for anomalies. Various techniques are employed to detect unusual or spurious measurements within large datasets. Anomalies may arise from equipment malfunctions, human error, power outages, interference, or other disruptions. Automatic screening can only reliably identify questionable results that warrant further manual investigation.

Analyser-generated raw data is converted into concentration values using the most recent values obtained from manual and automatic calibrations. As these instruments are not absolute and are prone to drift, both the zero baseline (background) and sensitivity can change over time. Regular calibrations with certified gas standards are used to determine

the zero and sensitivity, but these calibrations only remain valid for a brief period as the instrument continues to drift.

Several types of additional information can be crucial for accurately understanding and addressing data anomalies, such as:

• Proper data scaling

• Disregarding poor calibrations, e.g., a depleted zero scrubber

• Closely monitoring rapid drifts or discarding the data

• Comparing measurements with other pollutants and nearby sites

• Adjustments for span cylinder drift

• Adjustments for flow drifts in particulate instruments

• Corrections for ozone instrument sensitivity drifts

• Exclusion of measurements for NO2 conversion inefficiencies

• Removal of periods with calibration gas in the ambient dataset

• Identification of periods with instruments warming up after a power outage

• Detection of anomalies due to mains power surges

• Fixing issues with date and time stamps

• Observations made during site visits and services

Automatic Monitoring Annualisation

The automatic monitoring station in Colchester recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data.

NO_2 Fall-off with Distance from the Road

The automatic monitoring station in Colchester is representative of exposure. It has not been necessary to correct the automatic annual mean NO_2 concentrations for distance.

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Map of Non-Automatic Monitoring Sites: Central Colchester including AQMA1
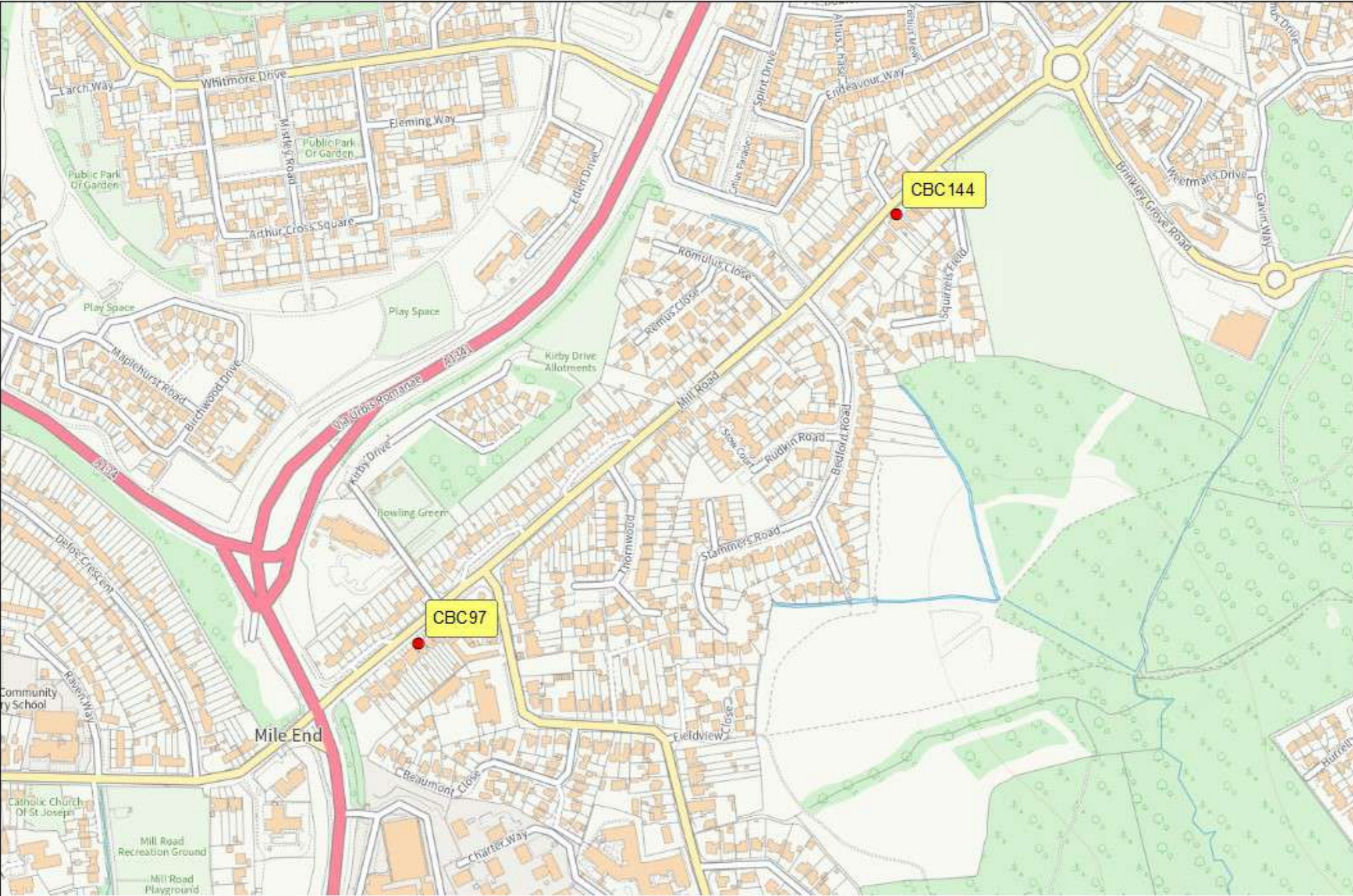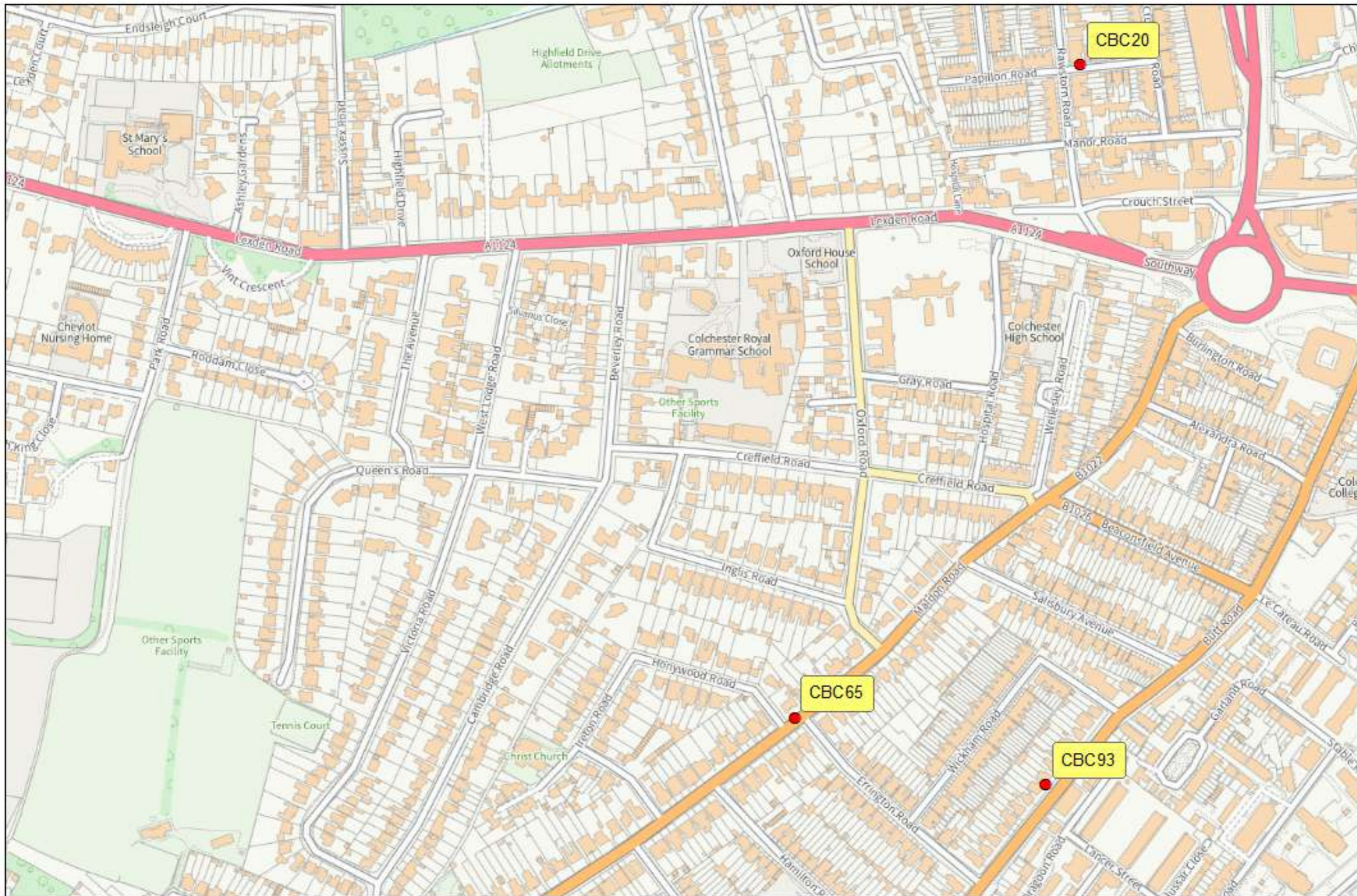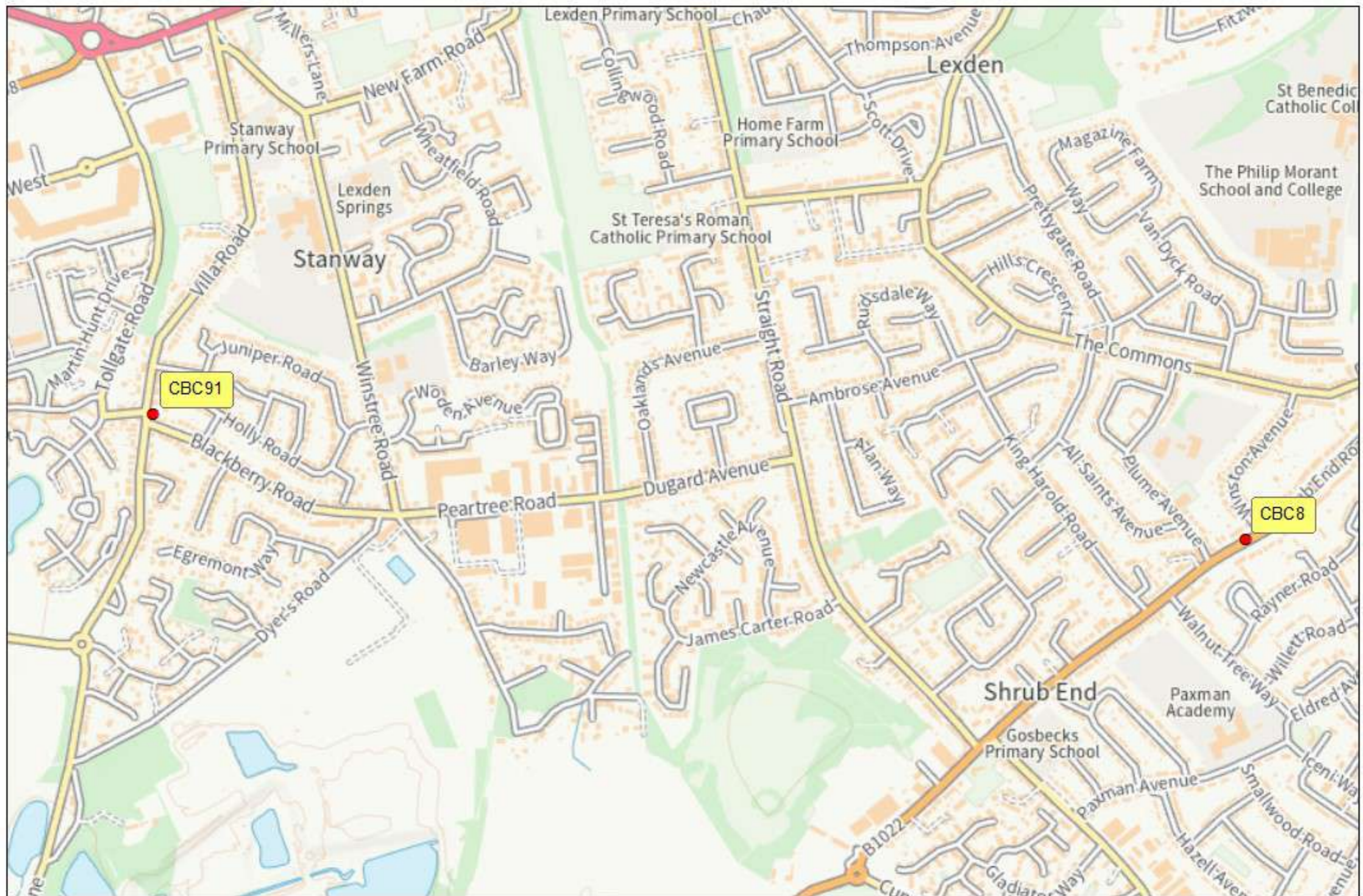

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Figure D.2 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Eastern Colchester including AQMA2
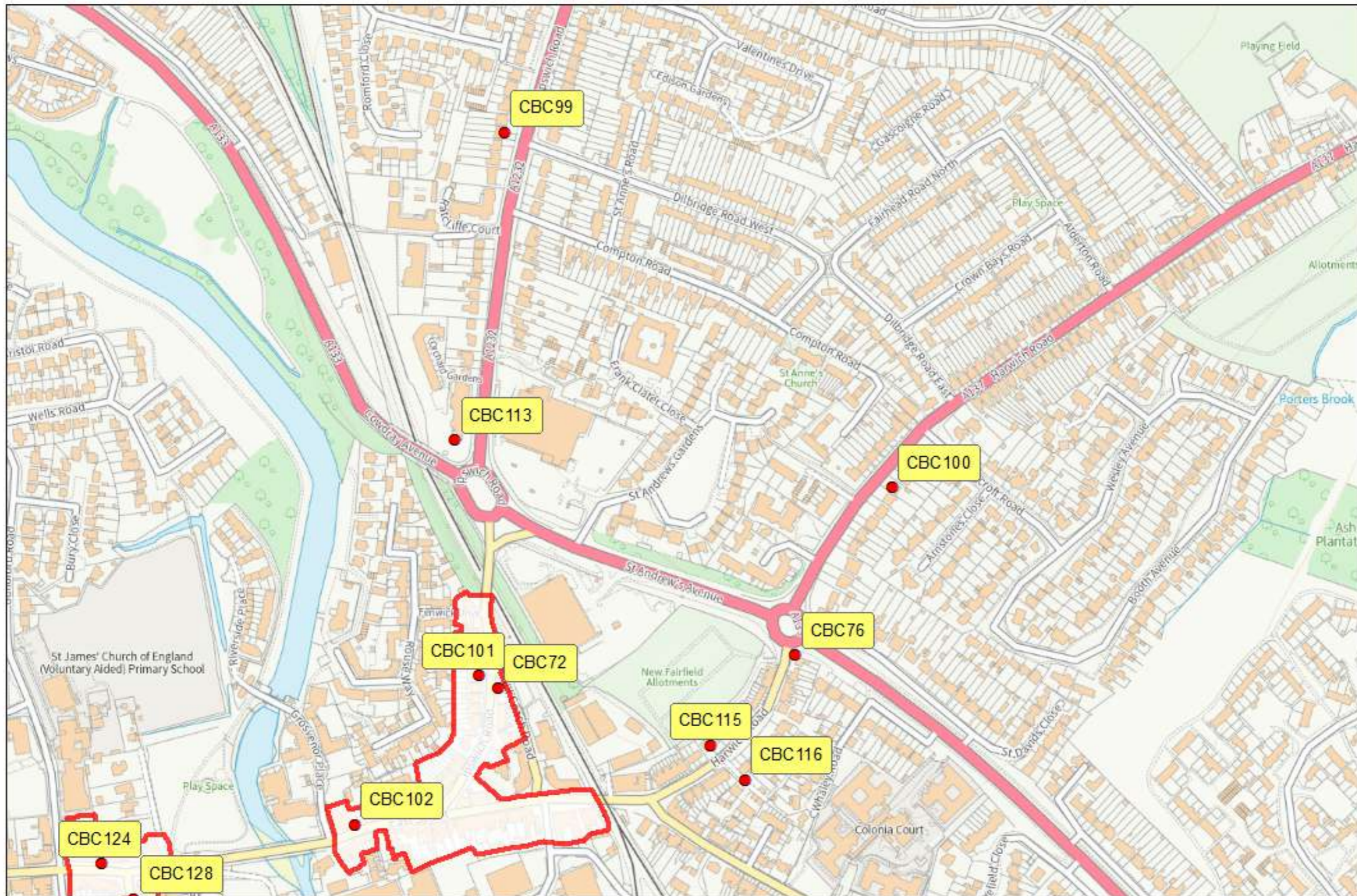
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Figure D.3 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Cowdray Avenue Area
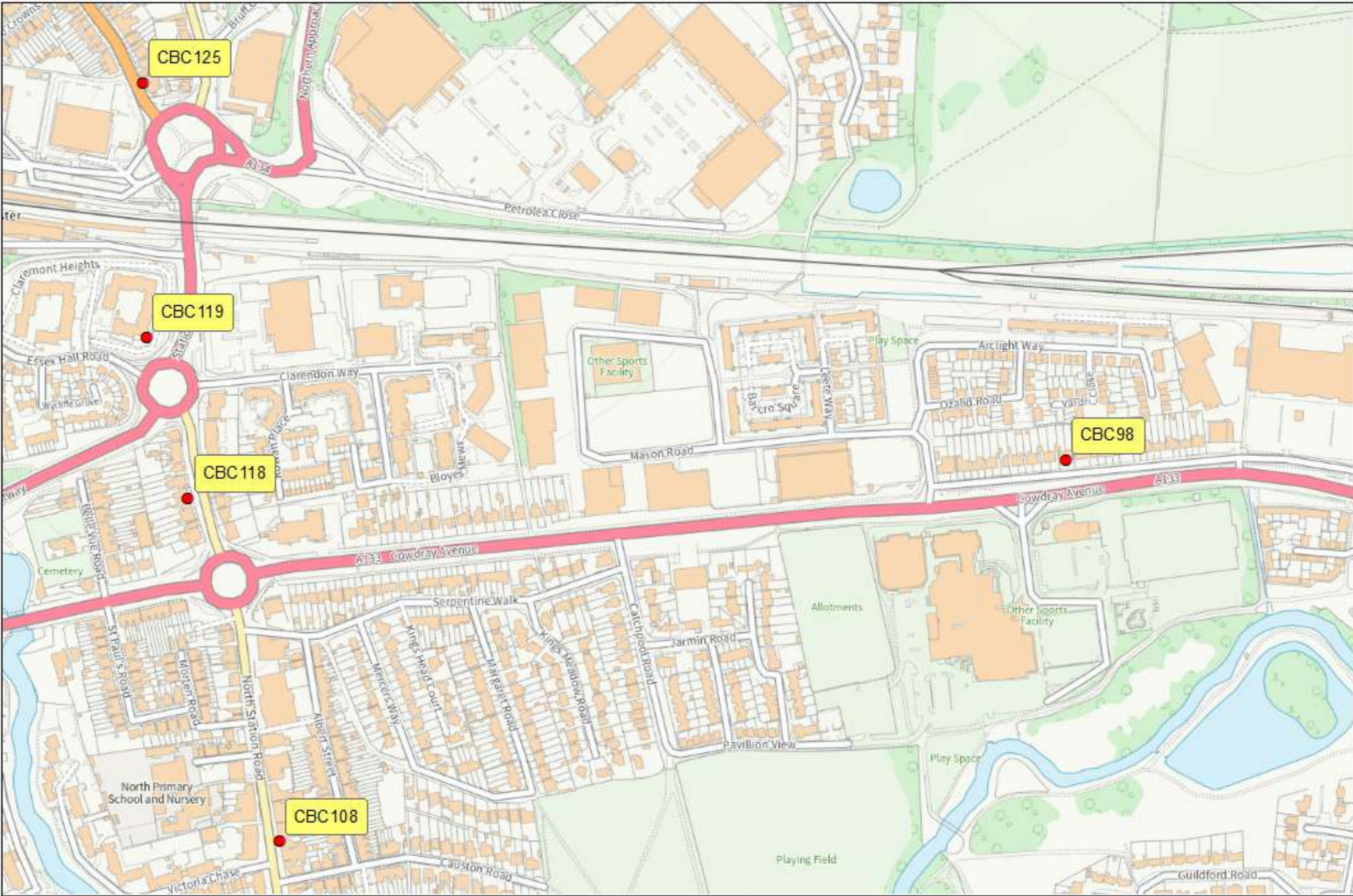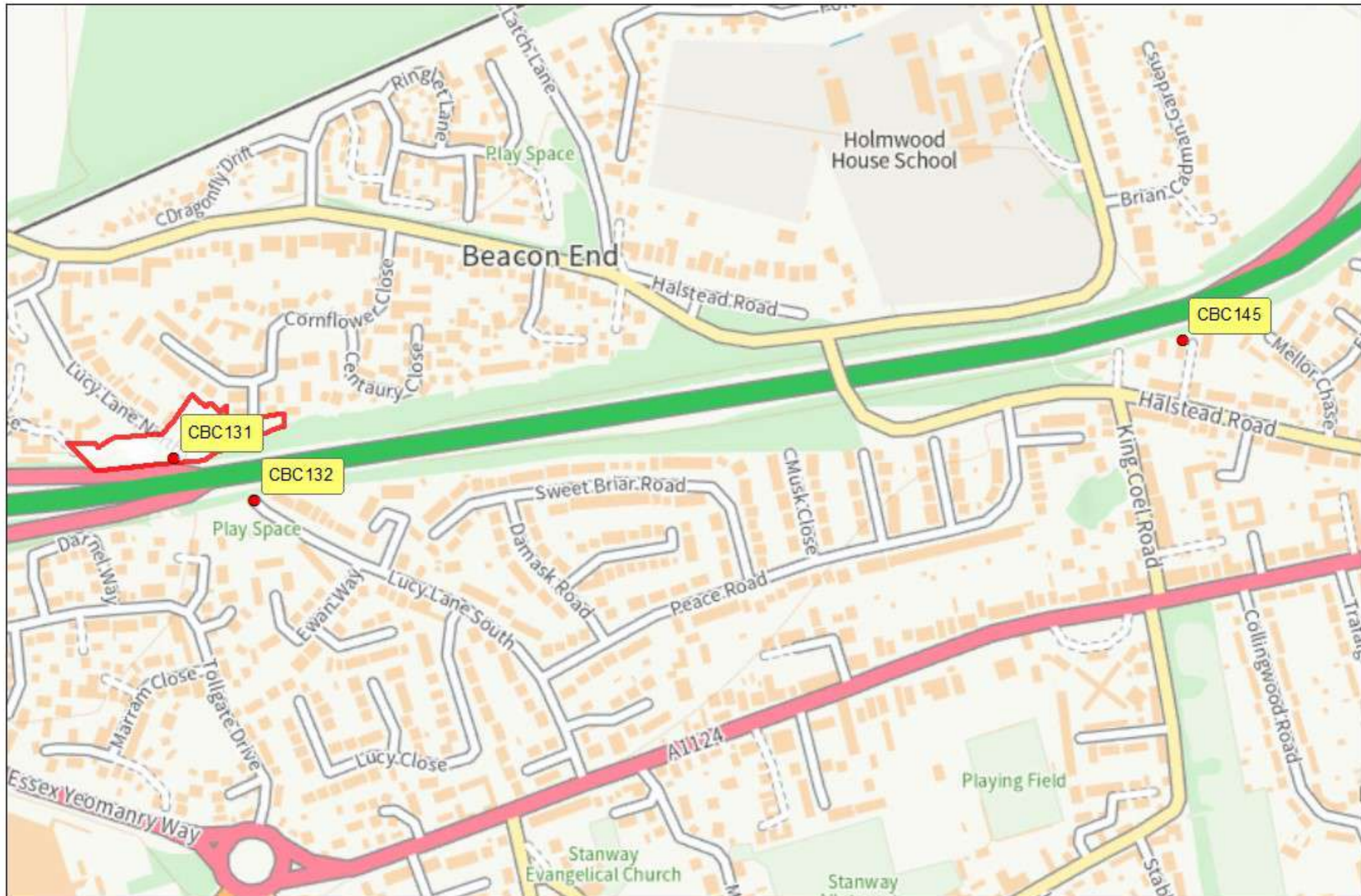

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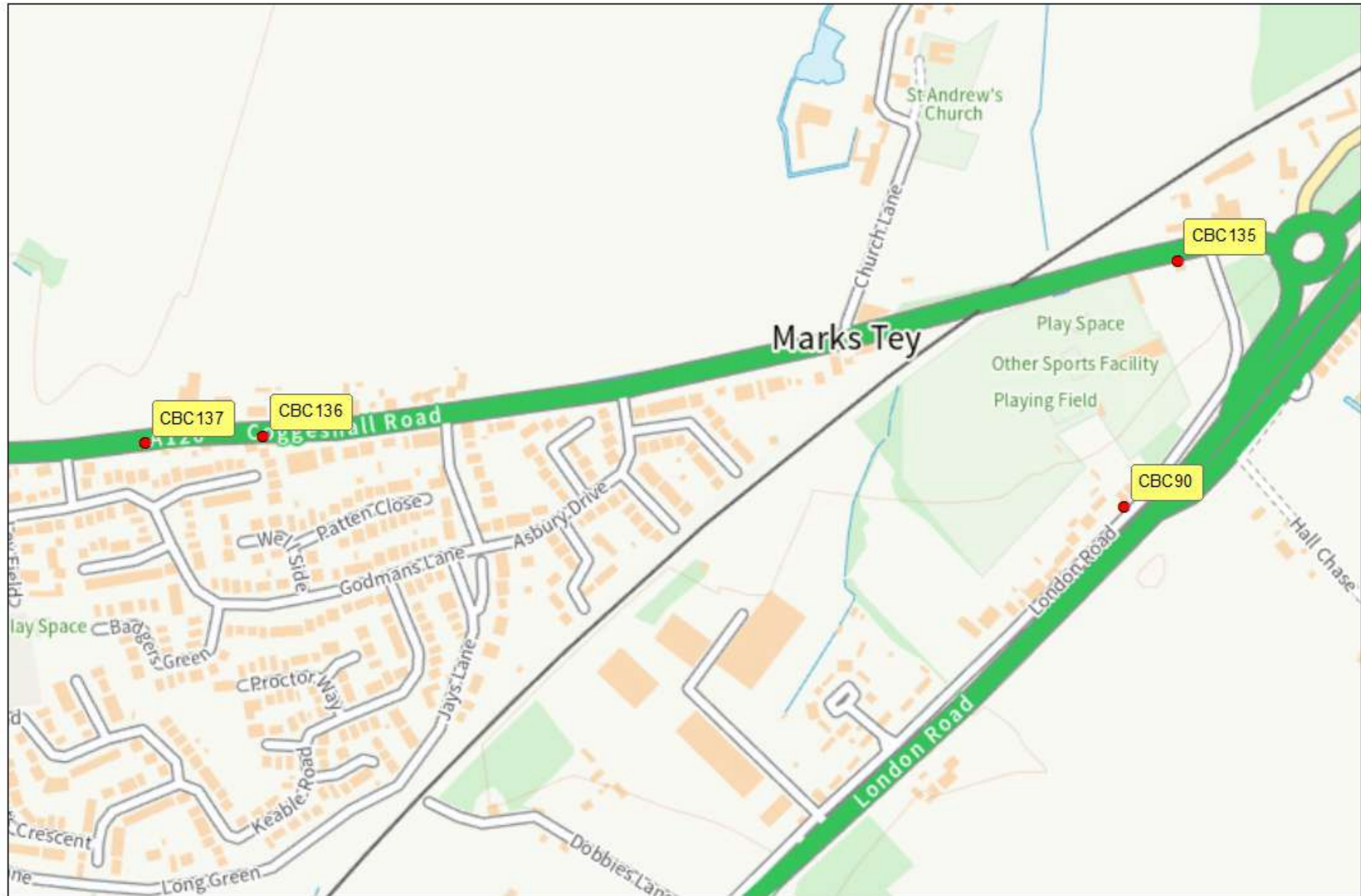**Figure D.4 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Mile End**

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Figure D.5 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Eastern Colchester

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Figure D.6 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Stanway & Shrub End
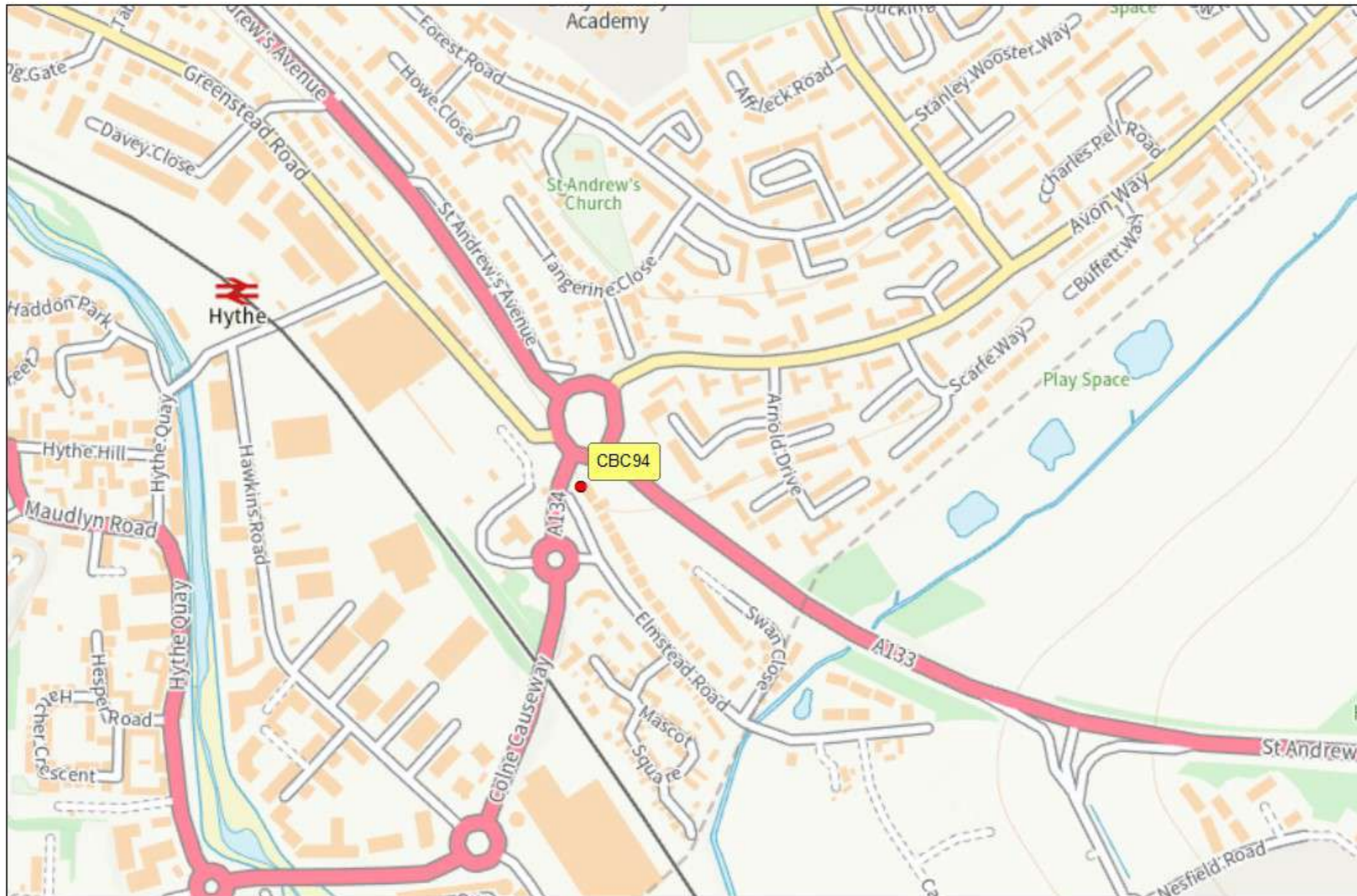

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Figure D.7 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: A12 Monitoring including AQMA4

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Figure D.8 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Marks Tey

Figure D.9 – Map of Non-Automatic Monitoring Sites: Map of Non-Automatic Monitoring Sites: Hythe

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Appendix E: Summary of Air Quality Objectives in England

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

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

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

Appendix F: Current AQMA Order

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

Colchester Borough 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 Borough Council Air Quality Management Area numbers 1, 2 and 4:

Area 1 – Central Corridors.

Area 2 – East Street and the adjoining lower end of Ipswich Road.

Area 4 – Lucy Lane North, Stanway

And shall come into effect on 30th June 2018

Area 3 – Harwich Road / St Andrew's Avenue Junction as detailed in the boroughs Air Quality Management Order dated 26 February 2013 is revoked

The areas shown on the attached maps in red are to be designated as air quality management areas (the designated areas). The designated areas incorporate (either fully or in part):

Area 1 – High Street Colchester, Head Street, North Hill, Queen Street, St. Botolph's Street, St. Botolph's Circus, Osborne Street, Magdalen Street, Military Road, Mersea Road, Brook Street, East Street and St. Johns Street.

Area 2 – East Street and Ipswich Road

Area 4 – Lucy Lane North, Stanway

The map may be viewed online and at the Council Offices.

Areas 1, 2 and 4 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.

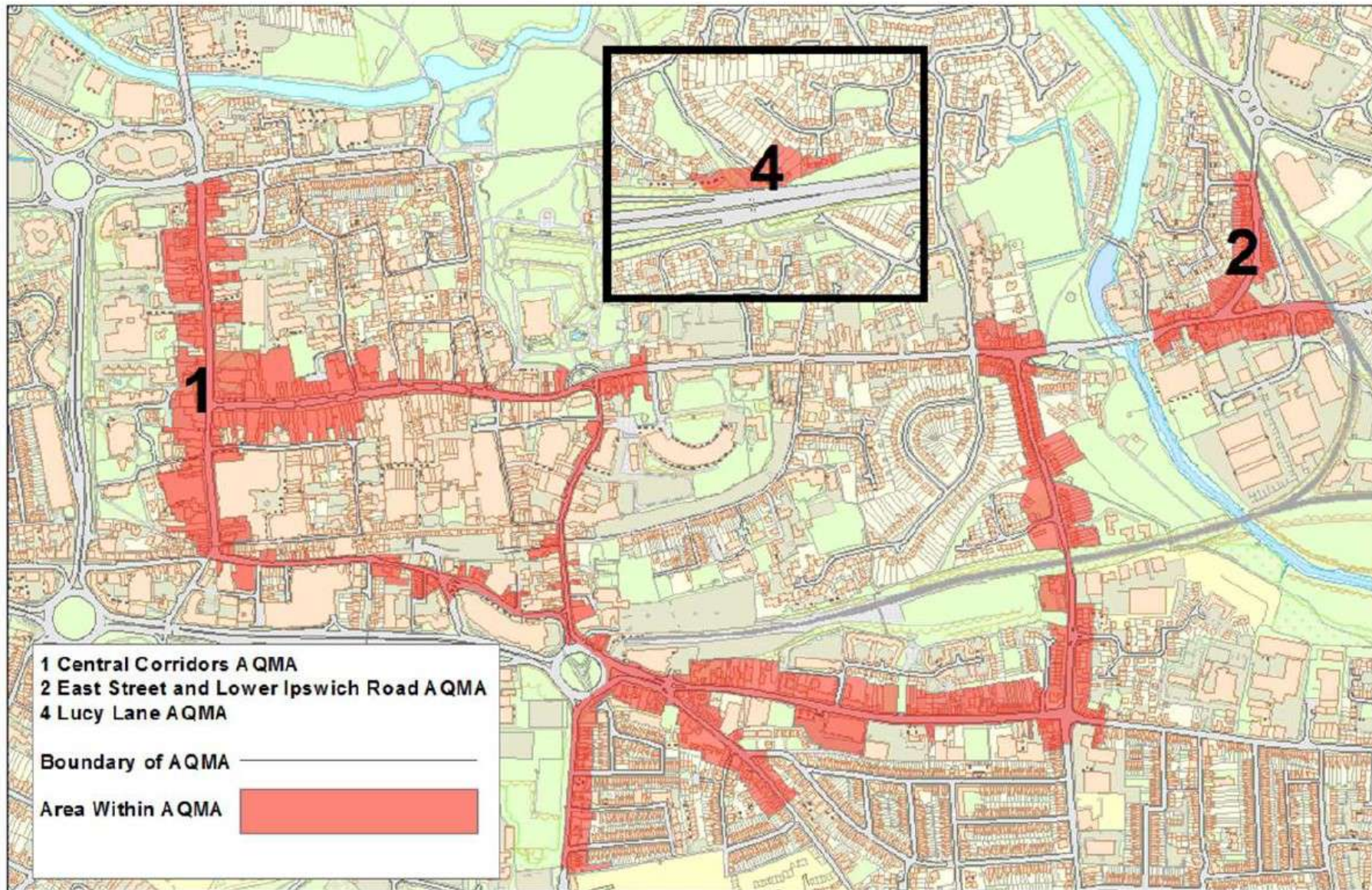This Order shall remain in force until it is varied or revoked by a subsequent order.

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

Authorised signatory

Recycled paper

1 Central Corridors AQMA
2 East Street and Lower Ipswich Road AQMA
4 Lucy Lane AQMA

Boundary of AQMA

Area Within AQMA

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1:7,000

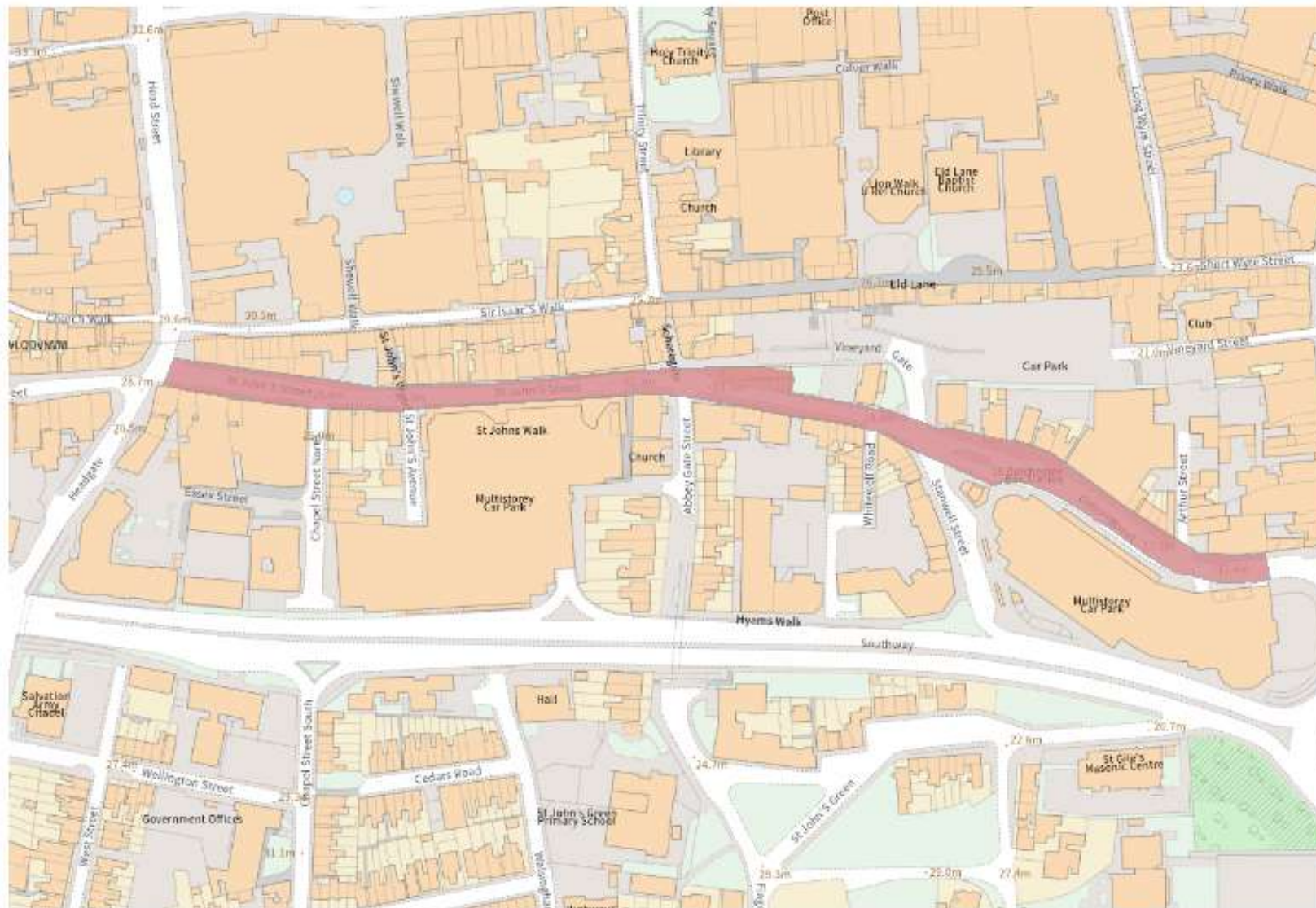# Appendix G: Proposed Brook Street AQMA

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Appendix H: Proposed Mersea Road AQMA

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Appendix I: Proposed Osborne Street & St John's Street AQMA

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Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
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
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10μm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5μm or less
QA/QC	Quality Assurance and Quality Control
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

- Clean Air for Colchester available at; https://www.cleanaircolchester.org/

- Clean Air for Colchester – Be Part Of The Change video available at; https://www.youtube.com/embed/BIDQg2iqkfw?feature=oembed

- Colchester Borough Council 2016-2021 Air Quality Action Plan available at; https://cbccrmdata.blob.core.windows.net/noteattachment/Colchester%20Air%20Quality%20Action%20Plan%2018-03-16.pdf

- Colchester City Council 2023 Air Quality Annual Status Report available at; https://cdn.cms42.com/essexair/colchester/Files/Reports/Colchester_2023_Annual_Status_Report.pdf

- Colchester City Council 2023 Air Quality Management Area (AQMA) Revocation & Amendment Report (September 2023)

- 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

- eCargo Bike Colchester available at; https://ecargobikecolchester.com/

- Essex Air website available at; https://essexair.org.uk/

- Essex Highways St Botolph's Circus Stage 2 Technical Report v1.0 (January 2024)

- 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