Colchester City Council

Colchester City Council

Draft Air Quality Action Plan 2024 - 2029

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

November, 2024

www.colchester.gov.uk

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Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to improve air quality in Colchester between 2024 and 2029.

This action plan replaces the previous action plan which was adopted in 2016.

Since 2016, funding has been secured to deliver the following successful projects:

- Brook Street and East Street Idling Signage Project
- Successful Bus Retrofitting Grants (2016 & 2018)
- CAReless Pollution campaign
- Clean Air for Colchester resident led project
- eCargo Bike Delivery Service
- Shared Transport & Try Before You Buy Services (eCars / eBikes & eCargo Bikes)
- New Cycle Colchester website and map
- Active Travel supplementary planning document (SPD)
- Air Quality & Traffic Sensor Monitoring Project
- Air Quality Backpack Monitoring Project
- Rapid Transit System – 1.2km Northern Approach Road dedicated busway & cycleway (to be completed by the end of 2024)
- Rapid Transit System – Inbound dedicated busway and cycleway improvements
- Various Active Travel Funding Schemes (ATF2)

Air pollution is associated with adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Air pollution particularly affects the most vulnerable in society: children and older people, and those with heart

and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas[1,2].

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3].

Colchester City Council is committed to reducing the exposure of people in Colchester to poor air quality in order to improve health.

We have developed actions that can be considered under seven broad topics:

- Alternatives to private vehicle use
- Freight and delivery management
- Promoting travel alternatives
- Public information
- Transport & Housing planning and infrastructure
- Traffic management
- Vehicle fleet efficiency

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.

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[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

[3] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

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.

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.

An overview of the project can be found on the Essex Highways website which includes the following video:

Further priorities are to make the Brook Street idling signage project permanent and to engage with bus operators with regard to the local bus fleet.

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.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are a large number of air quality policy areas that are outside of our influence (such as vehicle emissions standards agreed in Europe), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond Colchester City Council's direct influence.

As a council we will continue to have wider aspirations for achieving ongoing improvements in air quality beyond compliance with Defra thresholds in line with our strategic plan objectives particularly around the health, wellbeing and happiness of our community and to continue to mitigate potential increases in traffic as our local economy grows.

- Respond to the climate emergency
- Deliver modern services for a modern city
- Improve health, wellbeing and happiness
- Deliver homes for those most in need
- Grow our economy so everyone benefits
- Celebrate our city, heritage and culture

Many of our projects work with the community to support an overall shift in travel behaviour. We want to encourage less use of personal cars and a take up of walking, cycling, public transport and shared transport particularly for short journeys with the resultant benefit of improving air quality across the city and not just in the current AQMA's.

Colchester City Council is engaged with Essex County Council and other district Councils about the opportunity of producing a joint Air Quality Strategy which would provide a shared vision for air quality in Essex and define a framework to guide future action on air quality.

Responsibilities and Commitment

This AQAP was prepared by the Public Protection department of Colchester City Council with the support and agreement of the following departments:

- Public Protection, Colchester City Council
- Transport and Sustainability, Colchester City Council
- Officers from Essex County Council and Essex Highways
- Colchester Travel Plan Club, Colchester City Council
- Planning Policy, Colchester City Council

This AQAP has been approved by:

Andrew Weaver, Head of Governance and Monitoring Officer, Colchester City Council

Billy Parr, Head of Network Development, Essex County Council

Jyoti Atri, Director of Public Health, Essex County Council

This AQAP will be subject to an annual review. Progress each year will be reported in the Annual Status Reports (ASRs) produced by Colchester City Council as part of our statutory Local Air Quality Management duties.

These reports can be found on the Essex Air website.

If you have any comments on this AQAP please send them to:

Environmental.ProtectionTeam@colchester.gov.uk

Colchester City Council

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Abbreviations

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
AQS	Air Quality Strategy
ASR	Air Quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM	Particulate Matter
SPD	Supplementary Planning Document

1. Introduction

This report outlines the actions that Colchester City Council will deliver between 2024 and 2029 in order to improve air quality and reduce exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to Colchester.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within Colchester City Council's air quality ASR.

Summary of Current Air Quality in Colchester

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 (NO2).

Colchester has had Air Quality Management Areas (AQMAs) declared since 2001. These have been due to road traffic emissions causing exceedances of the NO2 air quality objectives.

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. In addition, some roads have moderate inclines which can cause vehicles to emit more pollution than on a flat road.

This Air Quality Action Plan is directly focused on reducing nitrogen dioxide (NO2) concentrations at relevant exposure within the AQMA to achieve compliance with the Air Quality Objectives while also reflecting wider aspirations for continual improvements in air quality across the city.

Colchester City Council undertook automatic (continuous) monitoring at one site and using diffusion tubes at 59 sites during 2023. Appendix F sets out the air quality monitoring data within the AQMAs.

In 2023, Colchester City Council measured one marginal exceedance (41.0µg/m3 at relevant exposure) of the annual mean NO2 air quality objective (40µg/m3). This exceedance occurred within the Mersea Road AQMA and was measured by triplicate diffusion tubes at one location. It should be noted that an Essex Highways air quality sensor that has been in operation in Mersea Road since 2022 and has not measure an exceedance.

The Brook Street AQMA and the Osborne & St John's Street AQMA are currently complying with the air quality objectives. However, there is not yet sufficient evidence to revoke the AQMAs.

The Brook Street 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 which indicates that it is likely that there was no exceedance of the 1-hr mean NO2 air quality objective.

Source apportionment is a technique used to identify and quantify the contributions of various pollution sources to ambient air pollution levels. The Source Apportionment section of this report sets out which types of vehicle are causing most pollution at each AQMA location.

The Required Reduction in Emissions section of this report sets outs how much Nitrogen Oxides (NOx) emitted by vehicles needs to be reduced in order for Nitrogen Dioxide (NO2) to comply with the Air Quality Objectives.

The Air Quality Action Plan Measures table sets out the actions that Colchester City Council along with Essex County Council propose to undertake to comply with the Air Quality Objectives.

Measure 1 sets out how compliance will be achieved in the Mersea Road AQMA.

Measures 2 and 3 sets out ways to further reduce pollution with the Brook Street and St John's Street AQMA.

Measures 4 to 15 provide public health, active travel and sustainable transport initiatives to reduce public exposure to air pollution and to provide alternatives to private vehicle use.

2. Descriptions of the AQMAs

After undertaking a review of the AQMA areas, in 2024 Colchester City Council revoked the three large Air Quality Management Areas (AQMAs) and declared three smaller AQMAs which are detailed below in Table 1. These air pollution hotspots have been declared due to emissions from road traffic either currently or historically exceeding the Nitrogen Dioxide Air Quality Objectives at relevant exposure.

In the past two years, the Mersea Road AQMA is the only location within Colchester where exceedances have been measured. In 2023, one monitoring location measured 41.0µg/m3 (at relevant exposure) marginally exceeding the annual mean nitrogen dioxide Air Quality Objective of 40.0µg/m3.

The AQMA review determined that no exceedance has been measured within the Brook Street and Osborne Street / St John's Street AQMA for two years and it was not yet appropriate to revoke the AQMAs. If an exceedance is not measured in 2024 then the Colchester City Council will review the designation of these AQMAs.

Detailed monitoring information can be found in Appendix F.

Table 1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	Level of Exceedance: Declaration	Level of Exceedance: Current Year (at Relevant Exposure)	Number of Years Compliant with Air Quality Objective	AQMA Characteristics
Brook Street	Declared 20th May 2024	NO2 Annual Mean	No Exceedance	No Exceedance	2	Street Canyon Extensive Queuing Slight Gradient
Mersea Road	Declared 20th May 2024	NO2 Annual Mean	**42.0µg/m3**	**41.0µg/m3**	N/A	Street Canyon Moderate Queuing Moderate Gradient
Osborne Street and St John's Street	Declared 20th May 2024	NO2 Annual Mean	No Exceedance	No Exceedance	2	Street Canyon Bus Station

The Air Quality Objectives and examples of where they apply are described in Appendix D.

A history of the AQMAs can be found in Appendix E.

Characteristics of the Brook Street AQMA

- It is a two-way street with a 30mph speed limit
- It is a narrow street, oriented north to south, with continuous two-storey terraced houses on both sides of the road for the majority of its length (i.e. a street canton)
- Part of the AQMA is flat and part of the AQMA contains a slight gradient on the southbound direction
- There is a traffic-light controlled junction with East Street which may result in queuing on the northbound lane
- There is a prevailing south westerly wind
- Buses are not routed along Brook Street

Characteristics of the Mersea Road

- It is a two-way street with a 30mph speed limit
- ▪ It is a narrow street, oriented north to south, with a street canyon formed by terraced houses on the eastern side and a continuous historic wall on the western side
- ▪ A steep uphill road gradient running north to south i.e. uphill in the southbound direction.
- ▪ A large four-armed roundabout located to the north where queuing traffic occurs during peak hours in the northbound direction.
- There is a prevailing south westerly wind
- Buses are routed along Mersea Road

Characteristics of the Osborne Street and St John's Street AQMA

- It is a two-way street with a 30mph speed limit with traffic mostly travelling east to west
- Osborne Street is mainly flat
- St John's Street contains an uphill road gradient approaching a traffic light-controlled junction
- Both roads contain street canyon characteristics
- Osborne Street is the site of the Colchester Bus Station
- Buses are routed along both Osborne Street and St John's Street
- St John's Street features a bus gate at the junction with Osborne Street and Stanwell Street restricting private vehicle movements East-West

Sources of Pollution within the AQMAs

Colchester is an urban centre with a good public transport system.

- Colchester Park and Ride is located off junction 28 on the A12 and offers a frequent service into Colchester City Centre.
- Colchester mainline train station
- Colchester Town branch line station
- Hythe, branch line station serving the east of the city and close to the university.
- Regular bus services in and around Colchester serving the city centre from both urban and rural areas

Colchester has a developing cycle network with an active LCWIP (2020 Local walking and cycling infrastructure plan) with an updated LCWIP being developed. Colchester has been a beneficiary of Active Travel Funding since 2020 and ECC continue to seek funding for improvements.

Despite the different public transport options and growing cycle infrastructure, Colchester remains heavily reliant on the car with over 60% of residents using it as their main method of travel. Its location on the periphery of Essex with surrounding rural areas necessitates car ownership for many residents. The need to commute longer distances for work, education, or access to amenities beyond the city centre often outweighs the convenience of public transport.

In order for effective air quality measures to be designed and implemented, it is necessary to understand the cause of pollution within each AQMA.

Colchester is not heavily industrialised and source apportionment identifies that vehicle emissions are the primary source of NOx pollution in the Colchester AQMAs.

Source apportionment has taken the localised traffic composition and modelled the emissions (g/km/s) for each portion of the vehicle fleet.

Further analysis has been undertaken using data captured from co-located air quality and traffic sensors has been undertaken to identify traffic trends within each AQMA location.

Brook Street Air Quality Analysis

Weekdays: Clear morning and evening rush hour peaks in NO2, although less pronounced than previously described.

Weekends: Similar pattern to weekdays, but with less distinct peaks. Concentrations remain elevated throughout the morning and afternoon.

The most significant peak occurs in the evening around 4-5 PM.

Weekday mornings (between 7 AM and 2 PM) show a plateau effect and no clear morning rush hour peak.

Weekly Variation:

The decline from the afternoon plateau to the evening peak is more noticeable on weekdays (Monday to Wednesday).

Weekday concentrations are very similar from Monday to Wednesday.

Thursday to Saturday show slightly higher average NO2 levels compared to the beginning of the week. Sundays have the lowest average concentration.

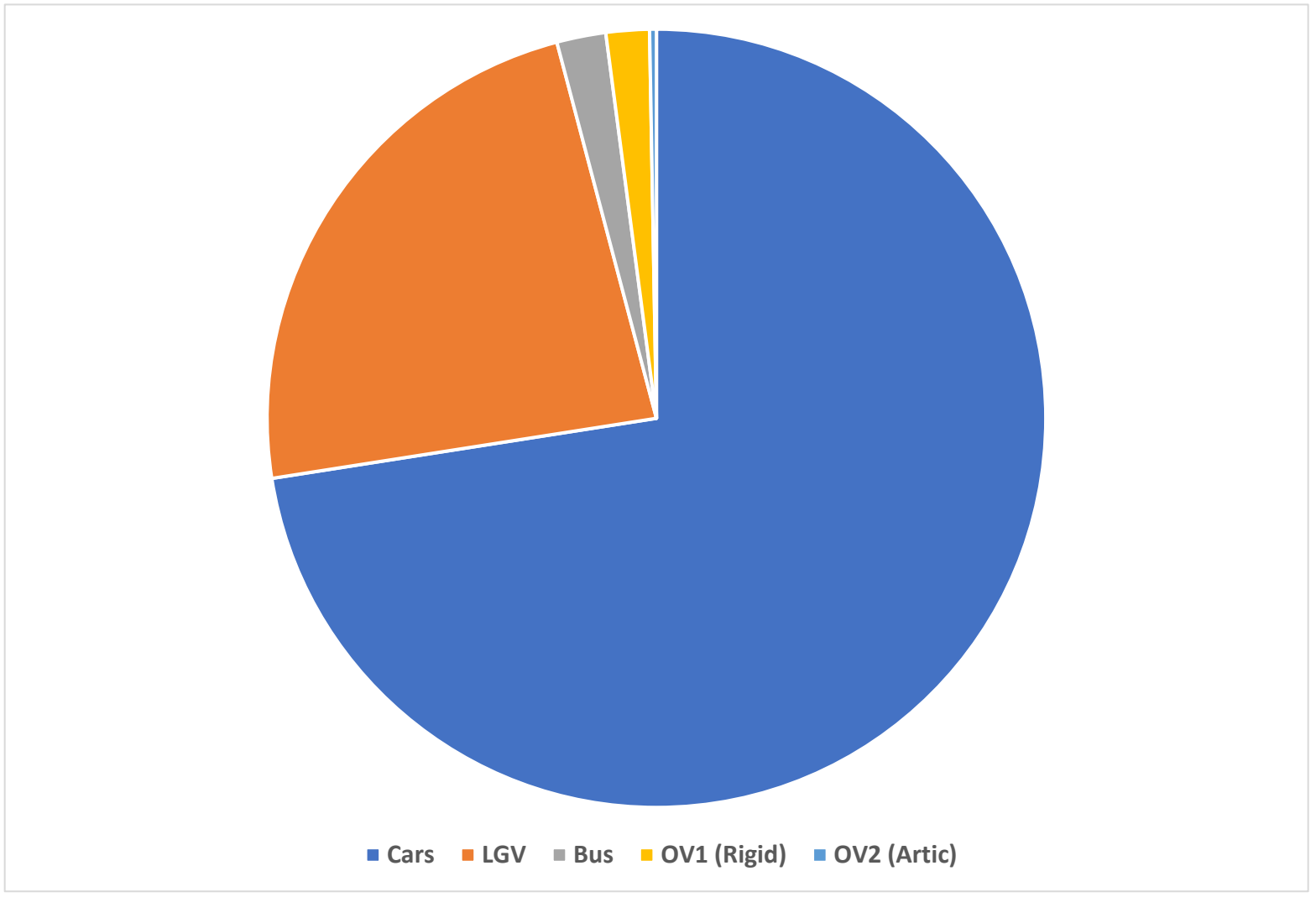
Cars have a large impact on NO2 concentrations.

Higher concentrations are measured when winds are from the west indicating the impact of the street canyon and recirculation.

Table 2 – Summary of 2023 Traffic Composition in Brook Street

Site ID	Traffic Composition				
	Car	LGV	Bus & Coach	OGV1	OGV2
Brook Street	86.8%	12.4%	0.3%	0.4%	0.1%
	Source Apportionment % Emissions (g/km/s) per vehicle fleet				
	72.5%	23.3%	2.0%	1.8%	0.3%

Figure 1 – Source Apportionment in Brook Street (% Emissions (g/km/s) per vehicle fleet)



Mersea Road Air Quality Analysis

Weekdays: Clear spikes in Nitrogen Dioxide (NO2) concentrations occur during morning and evening commutes, with less significant peaks on weekends.

This weekday traffic pattern suggests a higher volume of vehicles traveling southbound (uphill and likely away from Colchester) during afternoon rush hour. This southbound flow appears to have the strongest influence on NO2 levels measured near the monitor, positioned closest to that lane.

Weekends: NO2 levels show a midday peak that's slightly lower than the weekday lunchtime peak.

Weekly Variation:

Weekday concentrations are quite similar throughout the week.

Weekends have lower NO2 levels compared to weekdays. Sundays have the lowest average concentration, about 5 µg/m3 lower than weekdays. Buses, light goods vehicles (LGVs), and both categories of heavy goods vehicles (OGV1 & OGV2) seem to have minimal impact on NO2 concentrations.

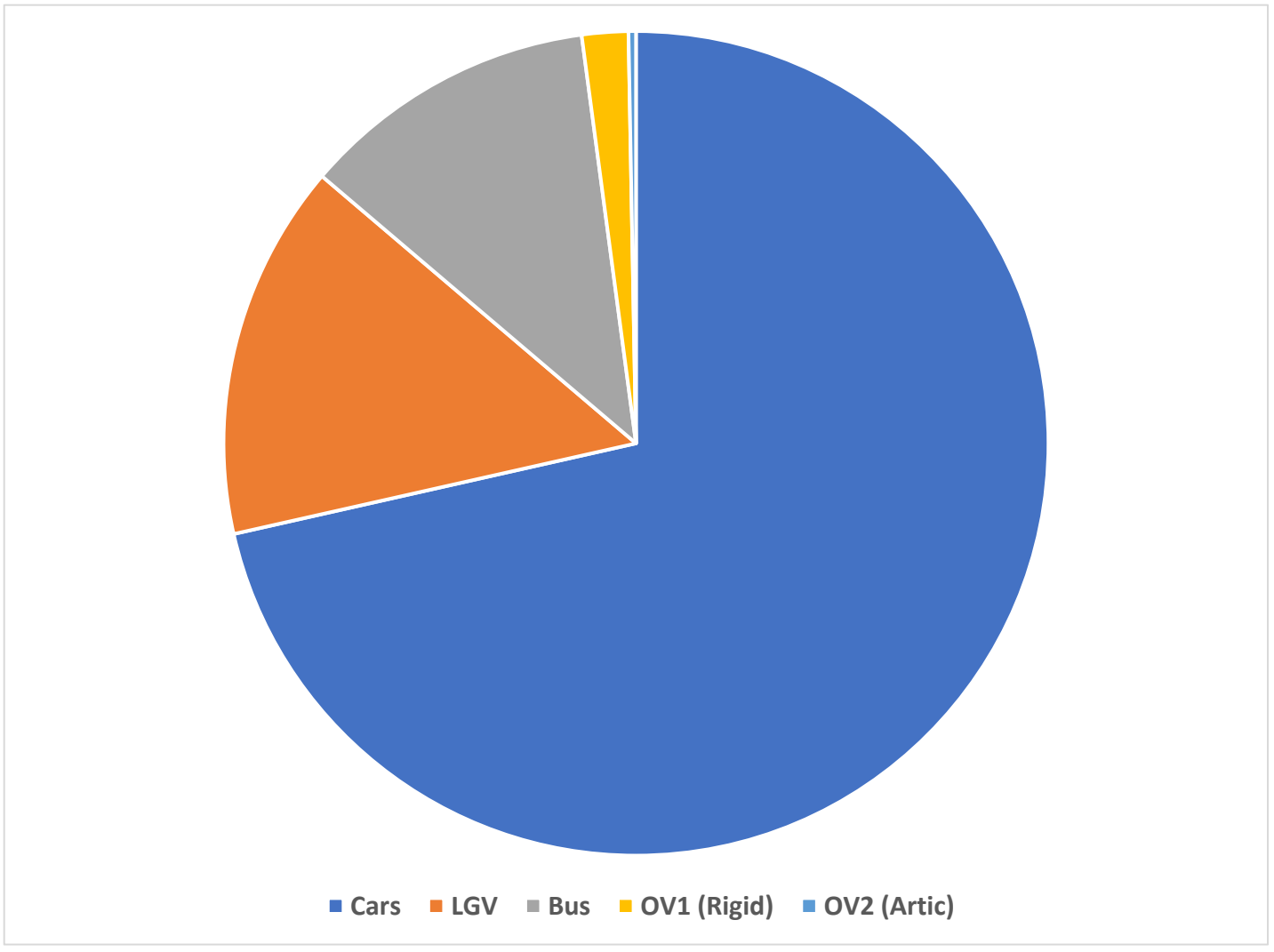
Higher concentrations are measured when winds are from the west indicating the impact of the street canyon and recirculation.

Cars going southbound on Mersea Road (accelerating up the hill) appear to make the greatest contribution to local pollution. This road lane is on the same side as the residential properties.

Table 3 – Summary of 2023 Traffic Composition in Mersea Road

Site ID	Traffic Composition				
	Car	LGV	Bus & Coach	OGV1	OGV2
Mersea Road	89.5%	8.4%	1.7%	0.4%	0.1%
	Source Apportionment % Emissions (g/km/s) per vehicle fleet				
	71.5%	14.8%	11.7%	1.8%	0.3%

Figure 2 - Source Apportionment in Mersea Road (% Emissions (g/km/s) per vehicle fleet)



Osborne Street and St Johns Street Air Quality Analysis

Weekdays: Clear morning and evening rush hour peaks in NO2 levels. Concentrations rise gradually throughout the day, with a smaller peak in the morning (between 7-8 AM) compared to the evening peak (between 4-5 PM).

Weekends: Less dramatic changes in NO2. Concentrations tend to rise gradually throughout the day before peaking in the evening, with no distinct morning or evening rush hour bumps.

Weekly Variation:

Weekday concentrations are fairly similar, with a slight increase towards the end of the workweek. Fridays have the highest average NO2 levels.

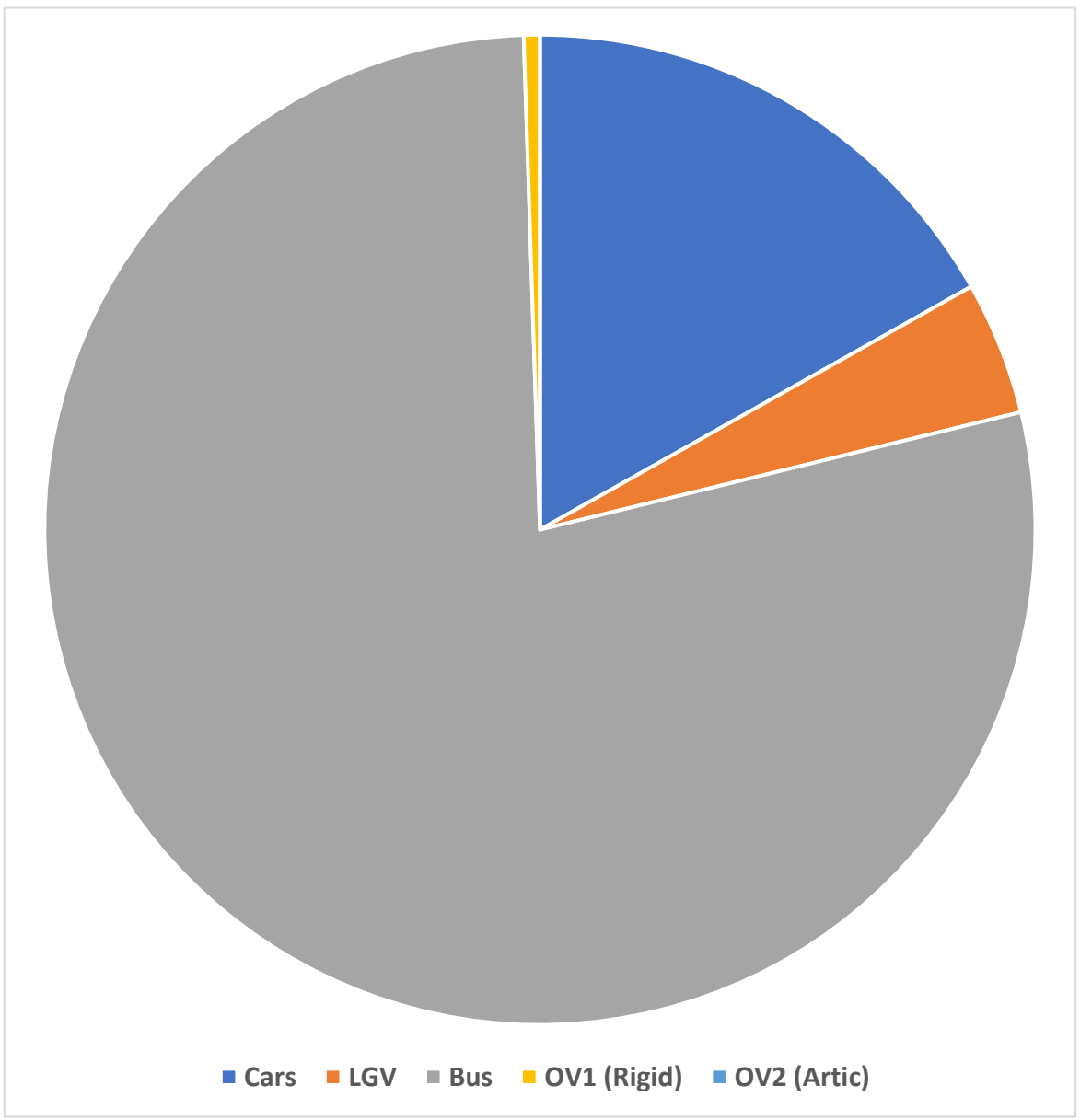
Weekends have significantly lower NO2 concentrations compared to weekdays. Sundays tend to have the lowest average levels, about 10 µg/m3 lower than weekdays.

Buses have a large impact on NO2 concentrations.

Table 4 – Summary of 2023 Traffic Composition & Source Apportionment in St John' Street

Site ID	Traffic Composition				
	Car	LGV	Bus & Coach	OGV1	OGV2
St John's Street	62.3%	7.6%	29.8%	0.3%	0.0%
	Source Apportionment % Emissions (g/km/s) per vehicle fleet				
	16.8%	4.4%	78.3%	0.5%	0.0%

Figure 3 – Source Apportionment in St John's Street (% Emissions (g/km/s) per vehicle fleet)



Required Reduction in Emissions

For 2023, the only measured exceedance of the annual mean Nitrogen Dioxide (NO2) Air Quality Objectives was at monitoring location CBC3 in the Mersea Road AQMA. This concentration was measured at 42.0µg/m3 and calculated to be 41.0µg/m3 at relevant exposure.

The NOx to NO2 calculator v8.1 has been used to calculate the minimum required reduction in emissions for compliance with the NO2 annual mean Air Quality Objective in the Mersea Road AQMA.

Table 5 – Calculating Required Reduction in Emissions in Mersea Road

Site ID	NO2 Annual Mean (µg/m3) Concentration (at relevant exposure)	Background NO2 (2018 Background Mapping data for local authorities – 2023)	Calculated Road NOx (All Other Urban UK Traffic setting)
CBC3 (Triplicate Diffusion Tube Monitoring Location)	41.0µg/m3	13.3µg/m3	57.30µg/m3
NO2 Annual Mean Air Quality Objective	40.0µg/m3	13.3µg/m3	54.96µg/m3
Required Road NOx emissions reduction for Mersea Road to meet the NO2 Annual Mean Air Quality Objective			2.34µg/m3

To achieve the NO2 annual mean Air Quality Objective, a minimum reduction of 2.34µg/m3 in road NOX emissions is necessary.

3. Colchester City Council's Air Quality Priorities

In this AQAP we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are a large number of air quality policy areas that are outside of our influence (such as vehicle emissions standards agreed in Europe), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond Colchester City Council's direct influence.

Key Priorities

The key priorities for this Air Quality Action Plan:

- St Botolph's Circus Regeneration – delivery of this measure alone will achieve compliance with the Air Quality Objectives

The main priority for this Air Quality Action Plan is delivering the regeneration of St Botolph's Circus. Air quality dispersion modelling has identified that the improved traffic flow that these proposals provide will improve air quality along Mersea Road and achieve compliance with the nitrogen dioxide annual mean air quality objectives.

The St Botolph's Circus Stage 2 Technical Report v1.0 sets out:

- There are no modelled exceedances of the annual mean NO2 Air Quality Objective of 40ug/m3 with the Elliptical Roundabout in place.
- Modelling identifies a reduction in annual mean NO2 concentrations along Mersea Road compared to the existing junction.
- Replacement of the existing junction with the Elliptical Roundabout leads to the removal of two modelled exceedances of the air quality objectives on Mersea Road.

The overall effect of the elliptical roundabout on air quality is assessed to be not significant with local reductions in NO2 emissions along Mersea Road.

Public Health Context

Air pollution poses a substantial threat to public health. Exposure to harmful pollutants, such as nitrogen dioxide (NO2) and fine particulate matter (PM2.5), can have consequences for the health and wellbeing of people.

Short-term exposure to nitrogen dioxide and ozone can trigger airway inflammation, while long-term exposure exacerbates respiratory and heart conditions.

Particulate matter is capable of penetrating deep into the lungs and bloodstream, has been linked to increased risks of heart disease, stroke, lung cancer, and even dementia. Children are especially vulnerable to the detrimental effects of poor air quality.

Public education and awareness campaigns are essential tools in the fight against air pollution. By informing the public about the sources, health impacts, and potential solutions to air pollution, these initiatives can help reduce exposure to air pollution.

For education and air quality awareness, Colchester City Council have operated a no idling signage project in Brook Street and East Street, the CAReless pollution campaign, air quality backpack monitoring project and have provided assistance to the resident led Clean Air for Colchester group.

In addition to these projects, The Council subscribes to *air*TEXT.

*air*TEXT is a free service providing real-time air quality updates for Colchester residents. By signing up, you'll receive text messages, emails, or voicemails with forecasts for the next three days, including overall air quality, pollen count, UV levels, and temperature. This valuable information empowers you to plan your day accordingly, especially if you have respiratory or heart conditions. *air*TEXT is a useful tool for staying informed about Colchester's air quality and taking steps to protect your health.

At the end of 2023 the subscriber figures were as follows:

SMS	Voicemail	Email	Twitter	Total
132	1	61	13	**207**

Colchester City Council proposes to promote the *air*TEXT service.

You can sign up to the *air*TEXT service at the following link: https://www.airtext.info/signup

Planning and Policy Context

Local Plan

The Colchester Local Plan 2017-2033 contains policies aimed at improving air quality and reducing pollution. Some key areas of focus include:

Transport

The plan emphasizes sustainable transport options, promoting cycling, walking, and public transport. It also seeks to reduce reliance on private cars through measures like improved public transport infrastructure, joined up and segregated cycle routes and creating a more pedestrian-friendly environment.

Air Quality Management Areas (AQMAs)

The plan recognizes the presence of AQMAs in Colchester and requires developers to undertake air quality assessments for proposed developments. This helps to mitigate potential impacts on air quality.

Sustainable Development

The plan promotes sustainable development principles, which include minimizing pollution and protecting the environment. The plan has two sections providing strategic policy context for North Essex, Braintree, and Tendring Councils, and policies for development management and site allocations in Colchester up to 2033.

Green Infrastructure

The plan emphasizes the importance of green spaces, which contribute to air quality improvement by absorbing pollutants and providing a healthy environment.

Shared Transport

Mobility hubs including Pay as you go Car clubs and shared bike hubs are being built into planning developments to build up a network of convenient, accessible and financially viable services to reduce reliance on personal cars and personal car ownership.

Active Travel SPD

In 2023, Colchester City Council adopted the Active Travel SPD to ensure active travel infrastructure is included in all new developments. The SPD aims to clearly set out the principles the Council expects to ensure that development proposals respond to the climate emergency by contributing towards a high-quality cohesive network of active travel routes and support sustainable growth in line with the adopted Local Plan.

Electric Vehicles

We will be developing a plan to support the use of electric vehicles in Colchester to complement the Essex Electric Vehicle Charging Point Strategy.

Licensing

Colchester City Council has introduced compliance standards for licensed vehicles: within the Hackney Carriage & Private Hire Licensing Policy

- Euro 5 for diesels vehicles / Euro 4 for petrol vehicles from 2018
- Euro 6 for diesels vehicles / Euro 4 for petrol vehicles from 2020

Drivers of licensed vehicles are also required to turn off their engines when waiting in Air Quality Management Area.

4. Development and Implementation of Colchester City Council AQAP

To enable development of this Air Quality Action Plan, a review has been undertaken of previous air quality studies and current project reports:

- 2016 Low Emissions Strategy and associated dispersion modelling reports
- 2016 – 2021 Air Quality Action Plan and associated dispersion modelling reports
- Healthier Air for Colchester 2016 – 2021 Air Quality Action Plan
- Baseline Air Quality Dispersion Modelling – Brook Street and Mersea Road, Colchester (2021)
- Essex Highways Air Quality Sensor project reports (2022-2023)
- Essex Air Quality Strategy – Colchester Workshop (2023)
- Essex Highways – St Botolph's Circus Stage 2 Technical Report (2024)
- Colchester City Council 2024 Air Quality Annual Status Report
- Colchester Future Transport Strategy

Steering Group

The measures set out in the Air Quality Action Plan have already been planned for implementation and set out in the Colchester City Council 2024 Air Quality Annual Status Report.

The measures have been designed by officers within the following local authority departments:

Colchester City Council Environment Protection

Colchester City Council Transport and Sustainability

Essex County Council Highways & Transportation

Essex Highways

Consultation and Stakeholder Engagement

In developing/updating this AQAP, we have worked with other appropriate local authorities to improve local air quality.

Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 6. In addition, we will be undertaking engagement on the Council website

The response to our consultation stakeholder engagement is given in Appendix A: Response to Consultation.

Table 6 – Consultation Undertaken

Consultee	Consultation Undertaken
The Secretary of State	
The Environment Agency	
The highways authority	
All neighbouring local authorities	
Other public authorities as appropriate, such as Public Health officials	
Bodies representing local business interests and other organisations as appropriate	

5. Air Quality Action Plan Measures

Table 7 below presents the Colchester City Council AQAP measures. It contains:

- a list of the actions that form part of the plan that are already funded or have funding identified
- the responsible individual and departments/organisations who will deliver this action
- estimated cost of implementing each action (overall cost and cost to the local authority)
- expected benefit in terms of pollutant emission and/or concentration reduction
- the timescale for implementation
- how progress will be monitored

Future Colchester City Council ASRs will detail regular annual updates on implementation of these measures

The measures being implemented by Colchester City Council complement each other and are part of an overall vision to support a general shift to reduce car journeys overall and particularly into the City Centre, impacting positively on both the AQMAs and overall air quality in Colchester. Many of the projects have come about in response to feedback from the community on what would support them to travel more actively for more journeys. The Council works closely with partners, stakeholders and community champions to co-design, develop and embed these projects.

Although many of these projects have a target date of 2025 for delivery in line with funding requirements, delivery is just the start and Colchester City Council will continue to work with stakeholders and the community to promote, expand and support these projects for the long term benefit of Colchester's residents, employees, students and visitors.

Table 7 – Air Quality Action Plan Measures

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 Roundabout	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 NO2	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		Planning permission required (permanent). Smaller signage required (ECC requirement)	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

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
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	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	
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	£500k - £1 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

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
															road connection to A120
9	Essex Electric Vehicle Charging strategy	Traffic Management	Strategy for implementation of electric charge points	2023	2025	Essex County Council		NO				Not quantified			
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. Currently reviewing membership offer to better address post-covid workplace travel, and negotiating formal BID membership	
11	City to Home e-Cargo 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 active travel /reduction in car use	Development of an eCargo Bike delivery app, to support 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 under development. Engagement with businesses to increase use of toolkit and eLearning module. Fixed term contract officer to deliver	
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 being further expanded to include active travel and Travel Plans. Assemblies and workshops being delivered to raise awareness and encourage take up of the toolkit	
15	Bikeability Boost in schools	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2021	2024	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	

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
														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	2024	Colchester City Council	Defra air quality grant 2020/21	YES	Funded	£50k - £100k	Implementation	Not quantified	Take up of active travel /reduction in car use through surveys and monitoring	City Centre Car club and eBike/eCargo bike service set up. New Town Community Bike hub set up. Car Clubs and shared bike hubs being built into new development planning obligations. Continue to promote and expand services	
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	Implementation	Not quantified	Take up of active travel /reduction in car use Usage of website and map through analytics	Cycle Colchester website launched and map under development with community input. Continually update and improve the website following feedback and new information and promote	
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	Attend at least 10 community events each year, develop suite of informational postcards and other resources to address barriers raised by the public. Work with local groups and organisations who want support to travel actively. Fixed term officer to deliver	
20	Walk with Words - wayfinding City Centre to University/student accommodatio	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	Implementation	Not quantified	Take up of active 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	

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
	n and spur to Greenstead														
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	Implementation	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, currently being promoted	
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	3-year trial launched in 2023 to give people cycling into city centre secure parking currently being promoted and monitored and a permanent home for the park being looked for	
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	Campaign to educate on securing bikes to give community more confidence to cycle without fear of bike being stolen.	
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	

Future aspirations

Beyond implementation of the current action plan, we have a number of ideas for the future to further improve the air we breathe that we would like to secure support and funding for:

Alternatives to private vehicle use

- Expand Essex Pedal Power to other parts of Colchester that fit Active Wellbeing Society criteria to give more residents in Colchester the opportunity to access a free bike.
- Develop shared mobility hubs with electric car club cars, bikes and cargo bikes for hire and public transport links within a ten-minute walk of all neighbourhoods within the urban area of Colchester and other suitable locations.
- Work with partners to provide improve bus and train services with less polluting vehicles and more frequent, reliable services.

Promoting travel alternatives

- Deliver more secure bike parking, in suitable destinations across Colchester, like the one in the city centre.
- Implement an integrated transport system users can plan, book and pay for multiple types of transport services through one combined platform (using Mobility as a Service).
- Improve and expand wayfinding that is coherent and legible for walking and cycling in Colchester to assist with navigation, accessibility and to promote interest in our local area. For example: Fixing the Link between Colchester Station and the City Centre.

Transport planning and infrastructure

- Develop a new Local plan and policies to create the right environment for improving infrastructure to support active travel and improve air quality up to 2041.
- Work with the Transport and Highways authority to influence and bring further investment into Colchester and support their strategy delivery where it can bring benefits to active travel and improve air quality

Traffic management

- Reduce speeds and introduce traffic calming where appropriate across Colchester to reduce emissions and give more people confidence to walk and cycle for short journeys and particularly for the journey to school.

Freight and Delivery management

- Enable last mile delivery by eCargo bikes/Electric Vehicles to reduce the need for goods vehicles to enter the city centre.

Appendix A: Response to Consultation

Table 8 – Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Response

Appendix B: Reasons for Not Pursuing Action Plan Measures

Table 9 – Action Plan Measures Not Pursued and the Reasons for that Decision

Action category	Action description	Reason action is not being pursued (including Stakeholder views)

Appendix C: Colchester City Council AQMA

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.

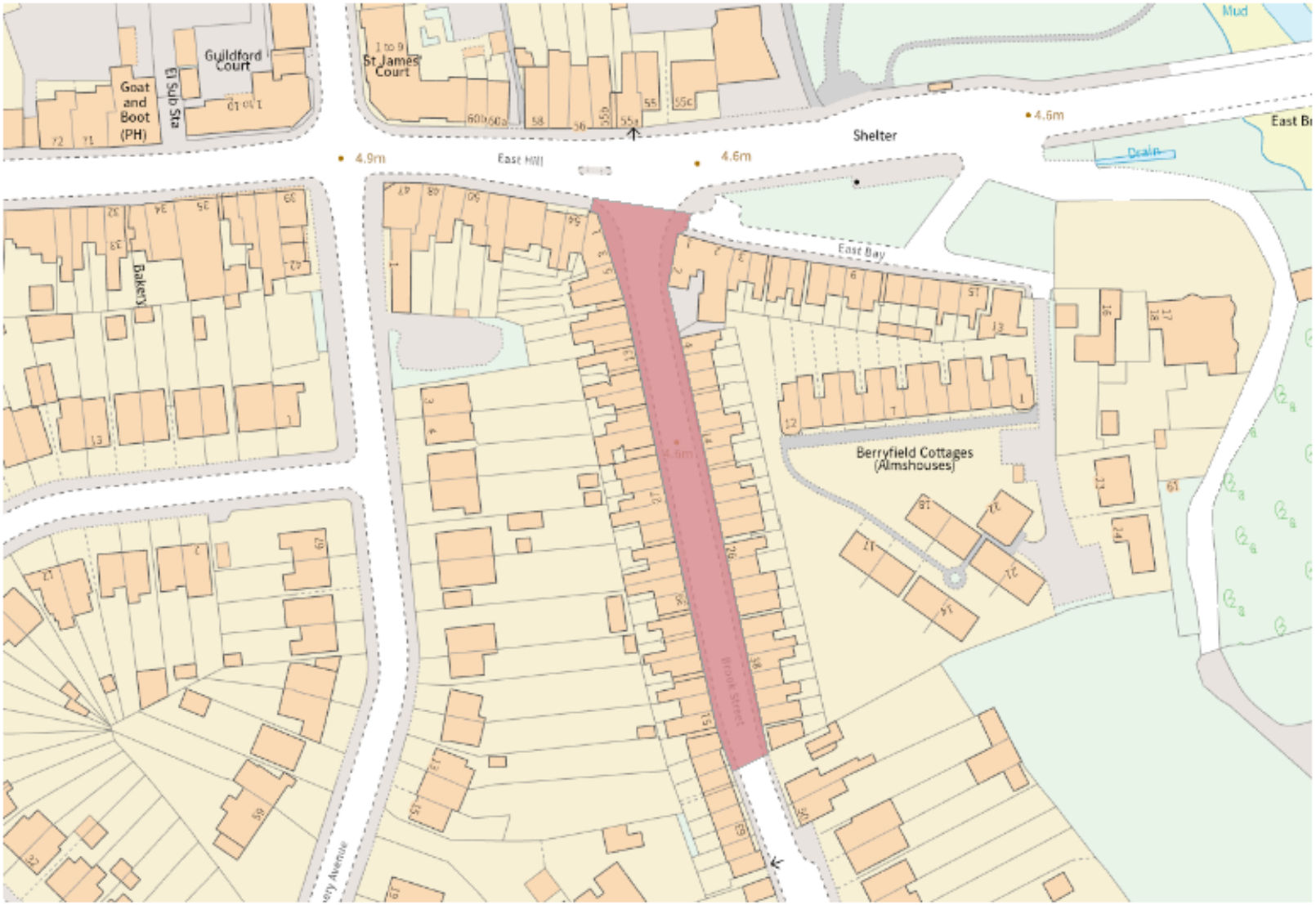
The Common Seal of Colchester City Council
was hereunto affixed in the presence of:

90/24

A. Weavers
Authorised signatory

Dated 20th May 2024

Brook Street AQMA



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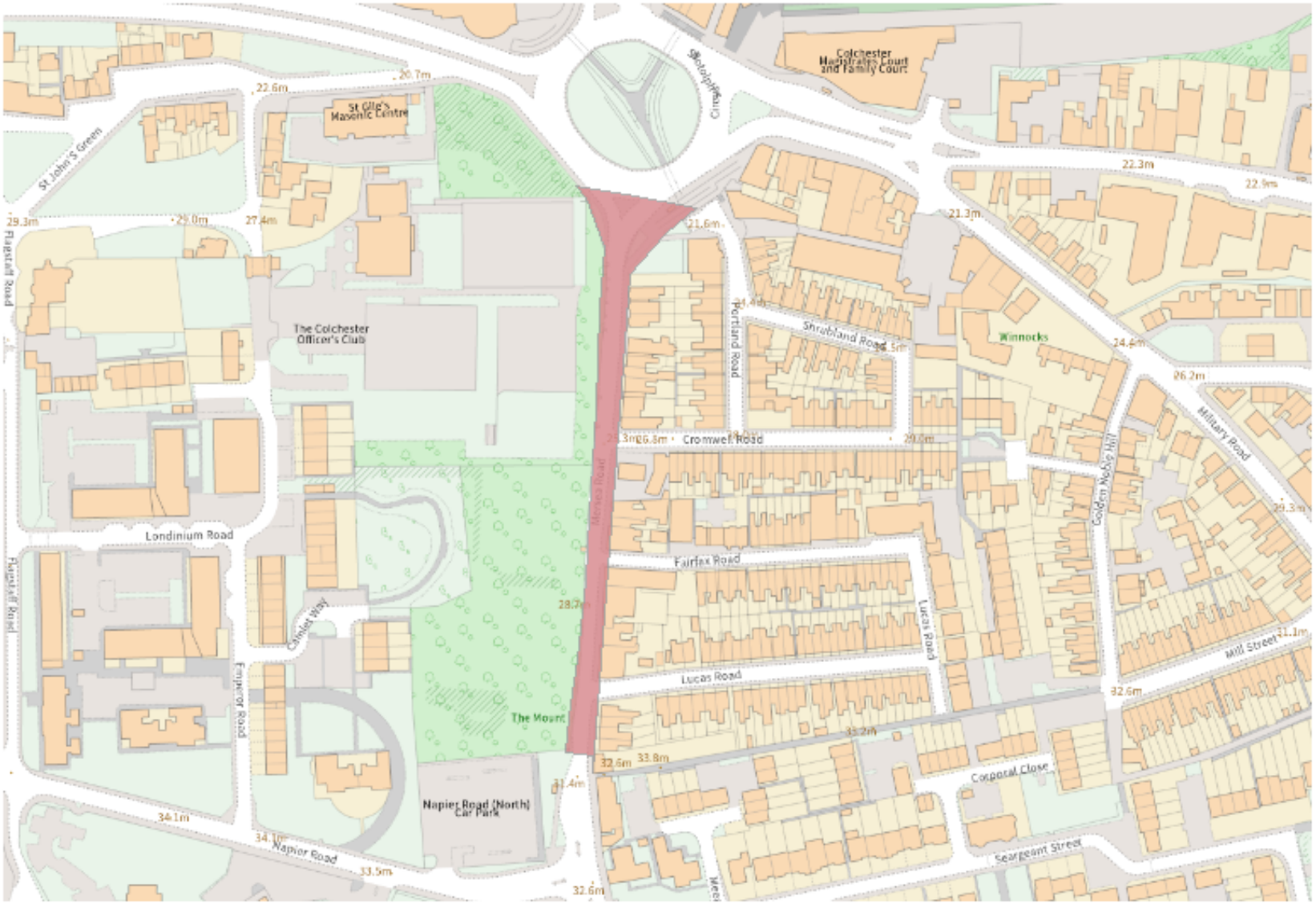
Mersea Road AQMA



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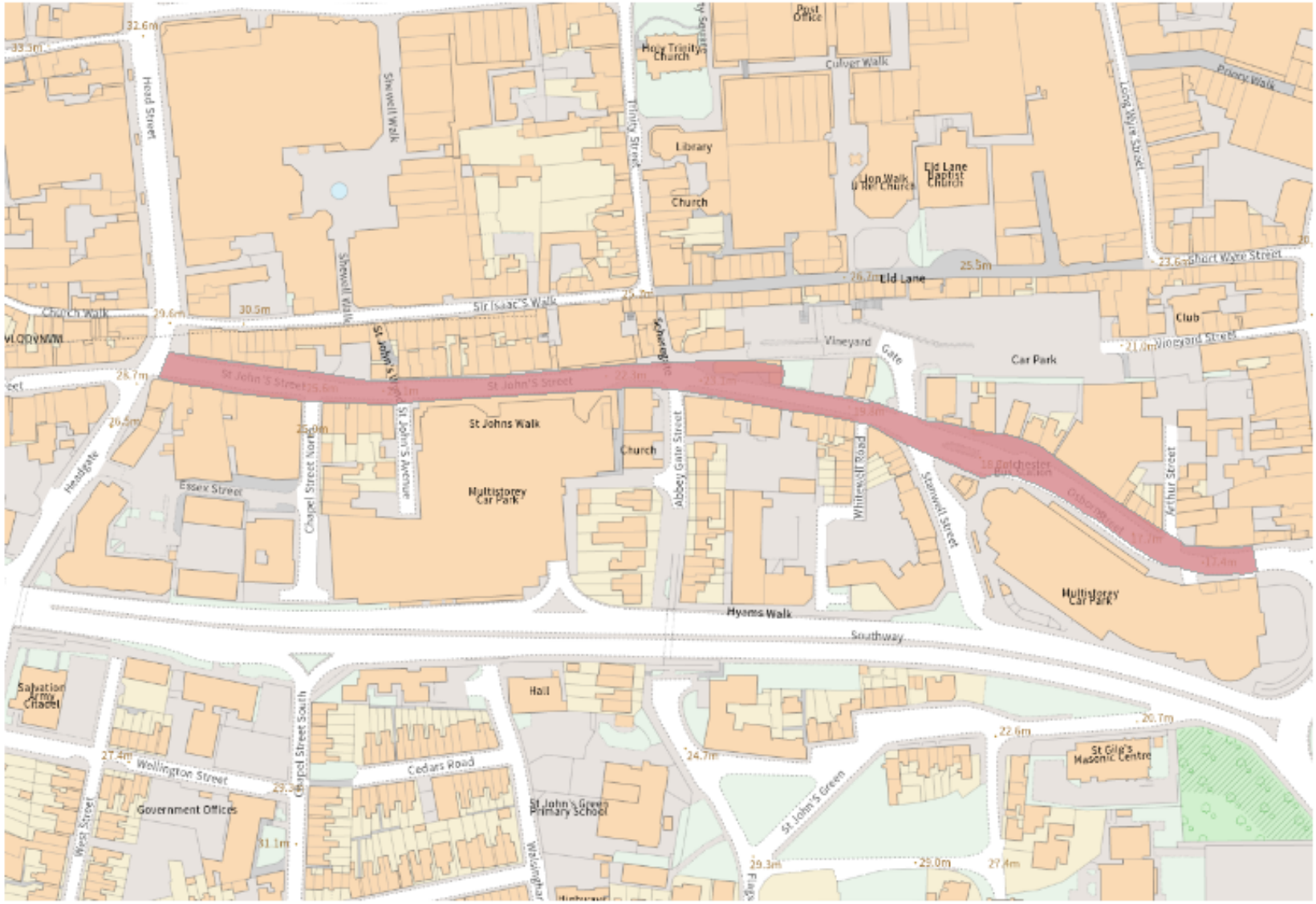
Osborne Street & St John's Street AQMA



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Appendix D: Summary of Air Quality Objectives in England

Table 10 – LAQM Air Quality Objectives in England4

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

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

Appendix E: History of the AQMAs

Table 11 – History of the AQMAs

AQMA Name	AQMA Status	Pollutants	Date	Comments
Colchester AQMA No.1 (Mersea Road)	AQMA Declaration	Nitrogen Dioxide Annual Mean Objective	01/05/2001	New AQMA
Colchester AQMA No.2 (Brook Street)	AQMA Declaration	Nitrogen Dioxide Annual Mean Objective	01/05/2006	New AQMA
Colchester AQMA No.1 (Mersea Road)	AQMA Revocation	Nitrogen Dioxide Annual Mean Objective	05/01/2012	Consolidation of AQMA into new larger AQMA Area 1
Colchester AQMA No.2 (Brook Street)	AQMA Revocation	Nitrogen Dioxide Annual Mean Objective	05/01/2012	Consolidation of AQMA into new larger AQMA Area 1
Area 1 – Central Corridors	AQMA Declaration	Nitrogen Dioxide Annual Mean Objective	05/01/2012	Combining Brook Street, Mersea Road & Town Centre Areas
Area 2 – East Street and the adjoining	AQMA Declaration	Nitrogen Dioxide Annual Mean Objective	05/01/2012	New AQMA

lower end of Ipswich Road				
Area 3 – Harwich Road / St Andrews Avenue Junction	AQMA Declaration	Nitrogen Dioxide Annual Mean Objective	05/01/2012	New AQMA
Area 4 – Lucy Lane North, Stanway	AQMA Declaration	Nitrogen Dioxide Annual Mean Objective	05/01/2012	New AQMA
Area 1 – Central Corridors	AQMA Amendment	Nitrogen Dioxide Annual Mean Objective Nitrogen Dioxide Hourly Mean Objective	26/02/2013	Declaration of Hourly Mean Objective
Area 3 – Harwich Road / St Andrews Avenue Junction	AQMA Revocation	Nitrogen Dioxide Annual Mean Objective	26/02/2013	
Area 1 – Central Corridors	AQMA Amendment	Nitrogen Dioxide Annual Mean Objective Nitrogen Dioxide Hourly Mean Objective	30/06/2018	Extension to include High Street up to Lewis Gardens

Area 1 – Central Corridors	AQMA Revocation	Nitrogen Dioxide Annual Mean Objective Nitrogen Dioxide Hourly Mean Objective	20/05/2024	Revocation of Town Centre Areas and Deconsolidation of Brook Street, Mersea Road & Osborne Street & St Johns Street Areas
Area 2 – East Street and the adjoining lower end of Ipswich Road	AQMA Revocation	Nitrogen Dioxide Annual Mean Objective	20/05/2024	
Area 4 – Lucy Lane North, Stanway	AQMA Revocation	Nitrogen Dioxide Annual Mean Objective	20/05/2024	
Brook Street	AQMA Declaration	Nitrogen Dioxide Annual Mean Objective	20/05/2024	AQMA from Revoked AQMA Area 1
Mersea Road	AQMA Declaration	Nitrogen Dioxide Annual Mean Objective	20/05/2024	AQMA from Revoked AQMA Area 1
Osborne Street and St John's Street	AQMA Declaration	Nitrogen Dioxide Annual Mean Objective	20/05/2024	AQMA from Revoked AQMA Area 1

Appendix F: Air Quality Monitoring Results

Colchester City Council Automatic Monitoring Data

Table 12 – Brook Street Annual Mean NO2 Monitoring Results: Automatic Monitoring (µg/m3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Measured Annual Mean NO2 Concentration (µg/m3)				
				2019	2020	2021	2022	2023
CBC Auto1	600571	225141	Roadside	26.44	21.76	23	23	20.9

Table 13 – Brook Street 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 Auto 1	600571	225141	Roadside	98.9	98.9	0	0	0	0	0

Essex Highways Air Quality Sensor Monitoring Data

Table 14 - 2022 – 2023 Air Quality Sensor Monitoring (NO2)

Site ID	2023 Valid Data Capture	2022 Annual Mean Concentration (µg/m^3)	2023 Annual Mean Concentration (µg/m^3)
St John's Street	100.0%	31.4	32.3
Mersea Road	100.0%	30.7	27.7
Brook Street	6.1%	**44.5**	31.1

Colchester City Council Diffusion Tube Data

Table 15 – Brook Street Non-Automatic Monitoring Sites

Site ID	Site Address	Easting (X)	Northing (Y)	AQMA	Measured Annual Mean NO2 Concentration (µg/m3)				
					2019	2020	2021	2022	2023
CBC45	Brook Street, 28/30	600560	225181	Brook Street	**44.0**	35.3	38.4	35.5	36.5
CBC66	Brook Street RAB	600622	224881		25.6	19.5	18.7	16.2	19.5
CBC68	Brook Street, 60 (56)	600589	225113		26.8	19.1	21.8	17.1	18.8
CBC69	Brook Street, 23 (25)(21)	600545	225205		**45.0**	38.3	34.5	33.5	37.8
CBC88	Brook Street, 48 (Auto Monitor)	600571	225151		25.9	22.2	20.7	18.2	19.5
CBC103	Brook St, 74	600607	225049		26.8	20.3	23.6	18.1	20.7
CBC127	Brook St. West side Junction with East Hill	600537	225242		**43.2**	35.1	32.9	32.0	28.2
CBC128	Brook St. East side Junction with East Hill	600547	225244		31.4	24.4	25.7	20.8	23.7
CBC129	Brook Street 33/35	600550	225183		**45.3**	**40.0**	**41.3**	36.0	38.9

Figure 4 - Trends in Annual Mean NO2 Concentrations Brook Street

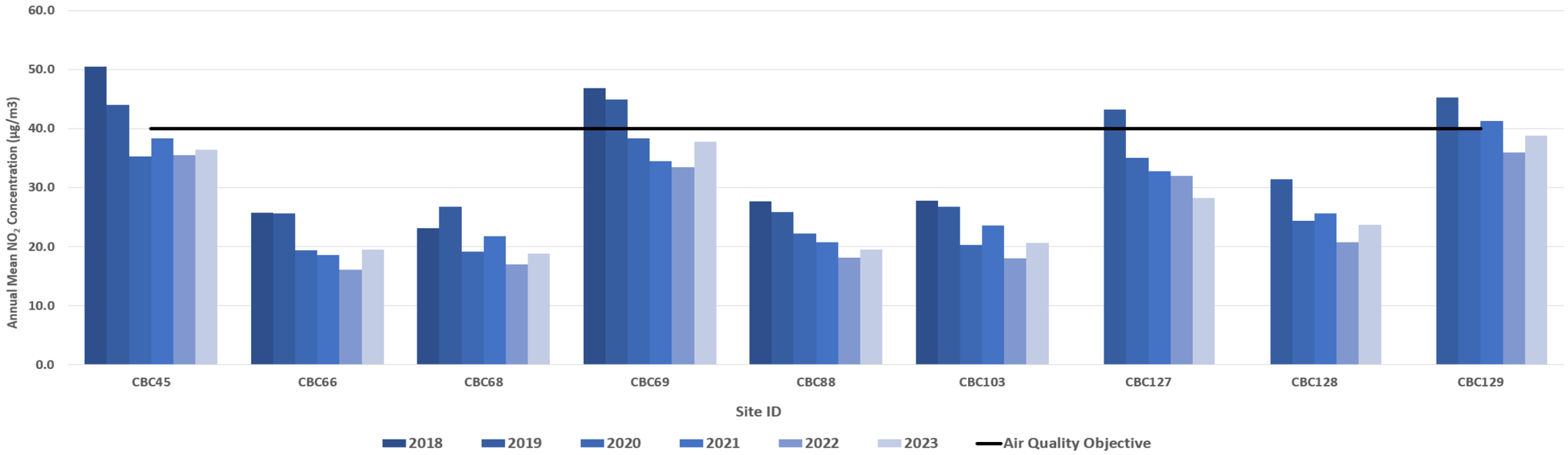


Table 16 – Mersea Road Non-Automatic Monitoring Sites

Site ID	Site Address	Easting (X)	Northing (Y)	AQMA	Measured Annual Mean NO2 Concentration (µg/m3)				
					2019	2020	2021	2022	2023
CBC3	Mersea Road, 21	599914	224643	Mersea Road	**55.4**	**43.9**	**46.4**	**41.3**	**42.0**
CBC54	Mersea Road, 10	599922	224728		**42.8**	35.1	37.8	33.0	31.1
CBC62	Maldon Road, 9	599923	224738		**40.7**	31.8	35.2	30.8	31.8
CBC63	Maldon Road, 12	599921	224711		**45.0**	37.4	39.7	35.5	36.7
CBC106	Mersea Rd 29 (Junc. with Lucas Road)	599911	224558		35.9	34.2	33.4	29.8	31.3

Figure 5 - Trends in Annual Mean NO2 Concentrations Mersea Road

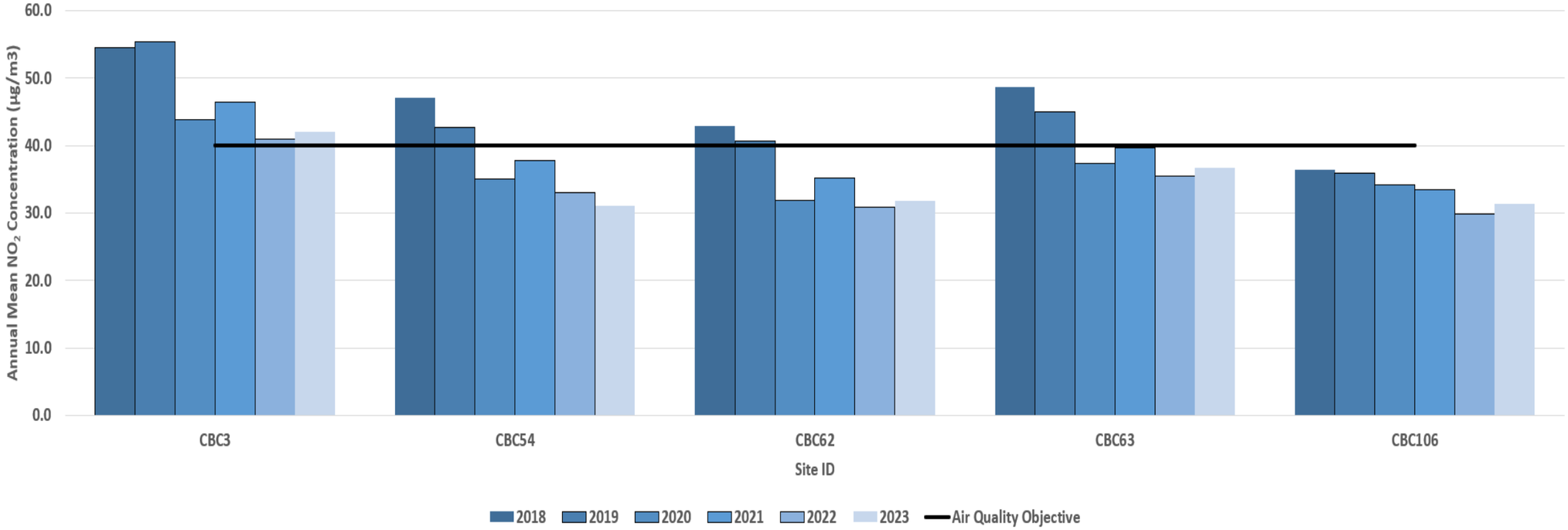


Table 17 – Osborne Street & St John's Street Non-Automatic Monitoring Sites

Site ID	Site Address	Easting (X)	Northing (Y)	AQMA	Measured Annual Mean NO2 Concentration (µg/m3)				
					2019	2020	2021	2022	2023
CBC71	Osborne Street, 6	599818	224924	Osborne Street & St John's Street	**46.5**	37.8	**40.2**	36.2	36.2
CBC111	St John's Street	599473	224982		**44.2**	37.3	37.3	30.7	32.2
CBC130	Osbourne Street, 43	599701	224964		**41.0**	34.2	N/A	30.3	34.7

Figure 6 - Trends in Annual Mean NO2 Concentrations Osborne Street & St John's Street

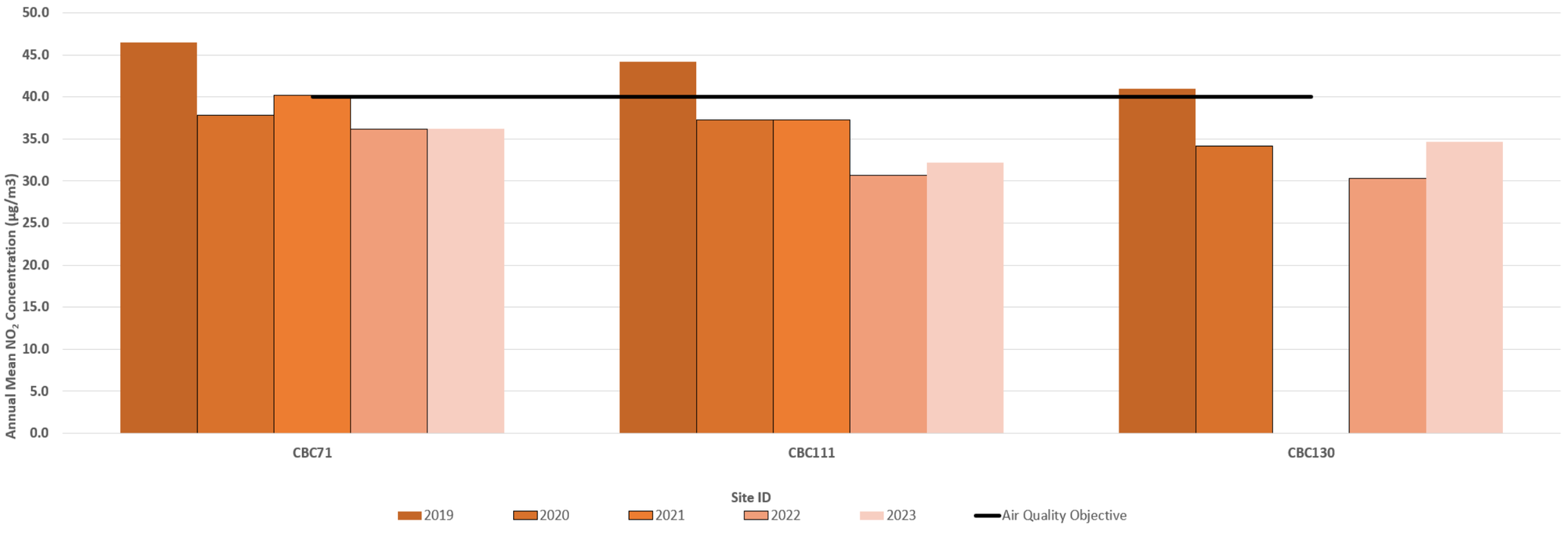


Figure 7 - Essex Highways Air Quality & Traffic Sensor Locations

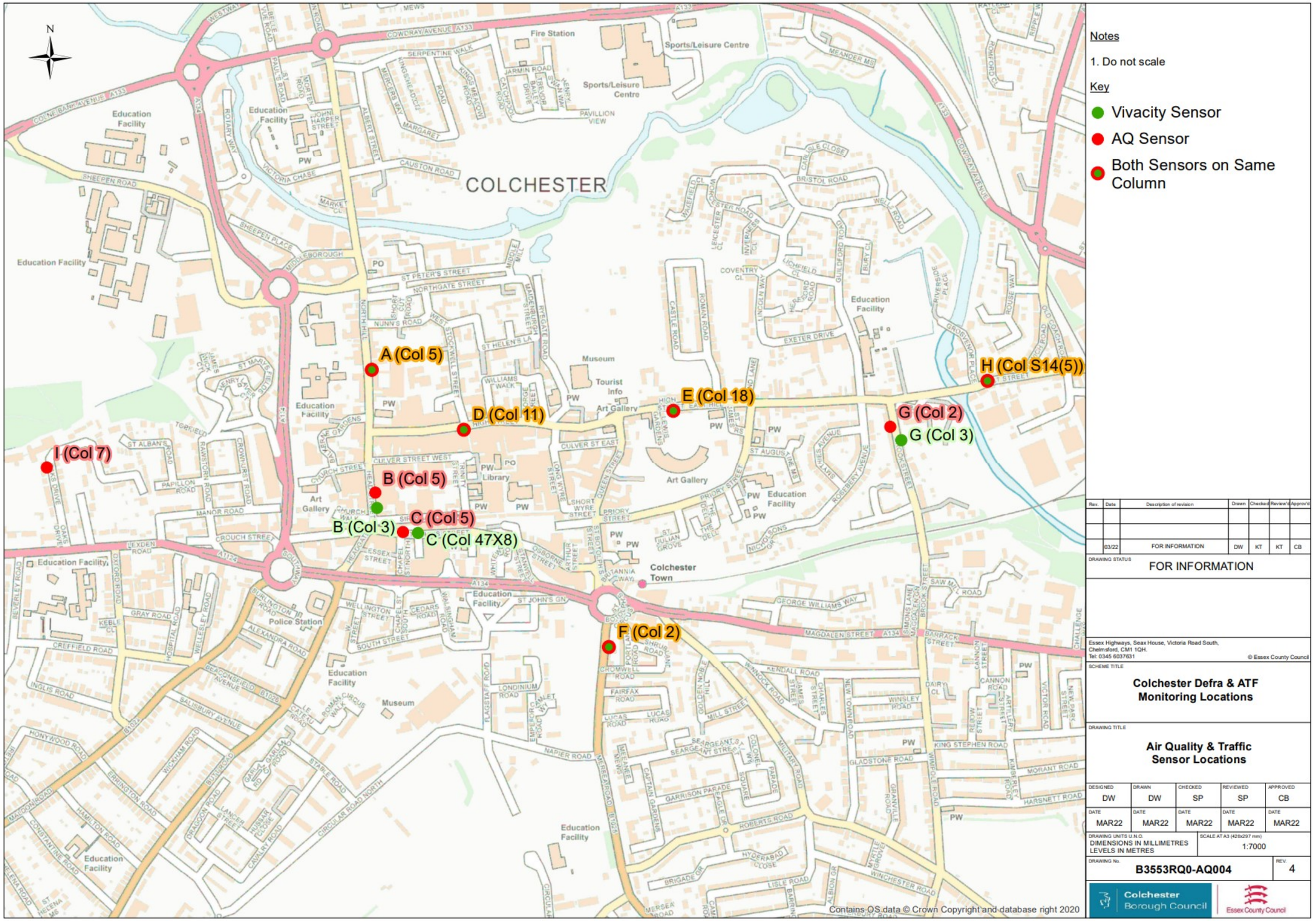


Figure 8 - Colchester City Council Monitoring Sites: Brook Street

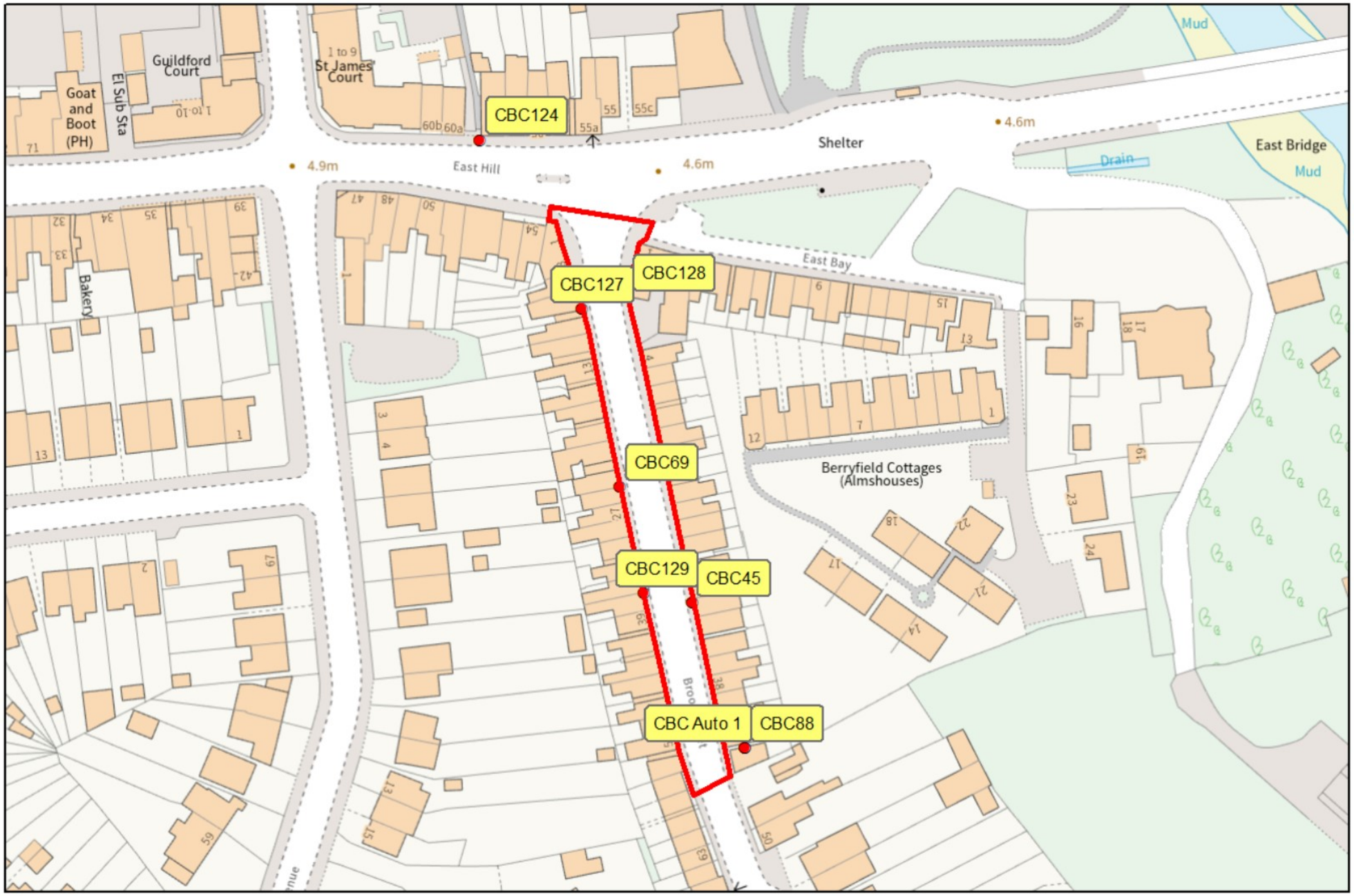
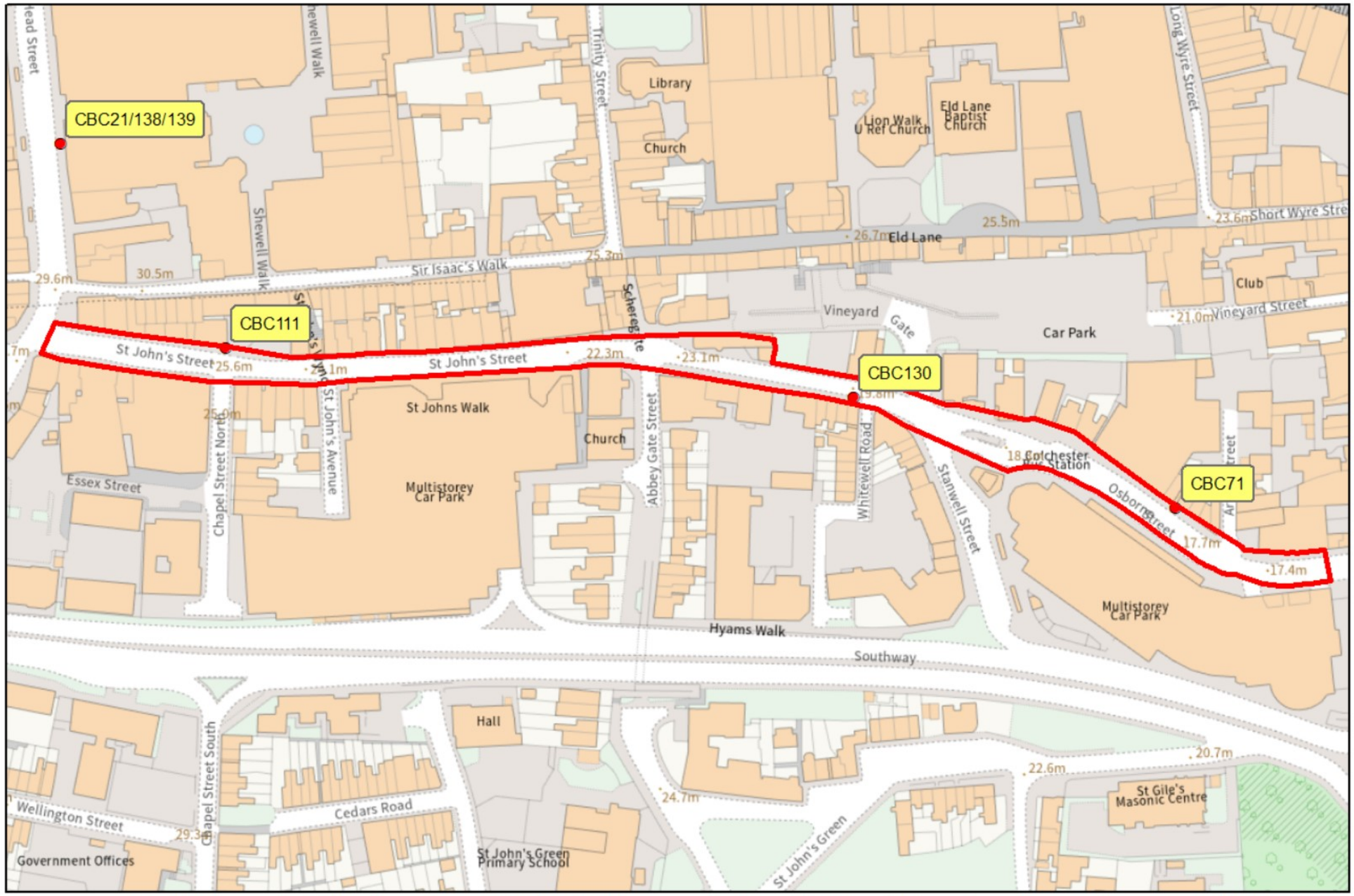


Figure 9 - Colchester City Council Monitoring Sites: Mersea Road

Figure 10 - Colchester City Council Monitoring Sites: Osborne Street and St John's Street



Appendix G: Essex Air Quality Strategy – Colchester Workshop

Essex Air Quality Strategy - Colchester

Agenda

Introductions	All
Air quality in Essex and the AQ Strategy	ECC
Aims of workshop	DW / SP
Mural guidance	FP
Identifying AQ issues	All
Break	
Identifying interventions	All
Wrap up and AOB	All

Aims of the workshop

Workshop session:
- The aim of the workshop is to develop a long list of potential interventions aimed at improving air quality in Colchester
- No idea is off the table

After the workshop:
- Following the workshop, the measures suggested during the session will be analysed in terms of impact, feasibility, cost etc
- A hierarchy of measures will then be developed that can be considered further

Navigating the board

Moving around:
Click and drag the mouse in the direction you want to move in (hold space on the keyboard to avoid moving post-it notes).

Zooming in and out:
1. Use the scroll wheel on your mouse to zoom in and out.
2. Press ctrl and + or -.

Magnifying text:
Magnify text on a post-it or text box by hovering over it and pressing 'x' on the keyboard.

Using post-it notes

Adding text:
Click on a blank post-it note and begin typing to add text.

Moving post-it notes:
Click on a post-it note, drag, and drop it to a new location.

Duplicating post-it notes:
Hover over a post-it note and hold down the alt key, or select the post-it(s) you want to duplicate and press ctrl and d.

Creating new post-it notes:
Double-click anywhere on the board.

Car Park

Use this space to note down any issues, concerns, or ideas identified during the session that can be 'parked' here for further consideration offline.

Essex Air Quality Strategy

- Air quality in Essex is generally good, but there are areas in Essex where elevated pollutant concentrations occur (mainly due to emissions from road traffic)
- For example, annual mean NO2 concentrations have exceeded the air quality objective at a number of locations across Essex for a number of years
- Essex CC understand impact poor air quality has on health, and recognise the importance of improving air quality
- Whilst Local Authorities are responsible for managing air quality within their areas, ECC are the Highways Authority, hence the need for collaboration
- Essex CC are in the process of producing an Air Quality Strategy, the aim of which is to set out how ECC intends to help improve air quality in Essex going forwards
- One of the actions in the strategy will be to collaborate with local authorities to identify potential air quality interventions in areas with air quality issues

SAFER GREENER HEALTHIER

RINGWAY JACOBS integrated expertise

Essex County Council

Essex Highways

What are the AQ issues?

Central Colchester AQMA

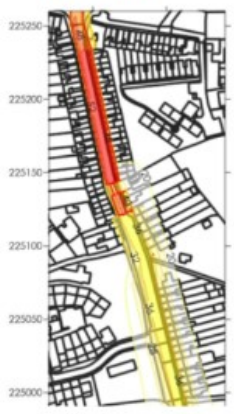
- Exceedances 2019 (particularly Brook St and Mersea Rd)
- Congetion and street canyons
- Concentrations lower in 2020 and 2021 (but remain in exceedance)
- AQ sensors in this area
- St Botolph's, Active Travel Fund, LCWIP

St Botolph's - Also LUF funding and Colchester City centre Masterplan

Brook Street

LCWIP 4 scheme will sub enhancements to active travel measures to promote cycling and walking. Design has involved Jacobs AQ team to ensure design does not negatively impact AQ

Brook St - North



Brook St - South

AQ issues also appear to impact on the junction at Magdalen Street A134

Volume of traffic due to being main north/south route from that area of town and due to High St being closed to cars

Poor walking and cycling due to narrow paths and lack of cycle lane, no other direct route from new town area, drivers take up of sustainable travel

Both ends complex junctions with long waits, tail backs and engine idling

Strategically an important route for moving between north and south of Colchester (TS CCC)

Closure in 2015? for junction works led to signifcant improvements in AQ levels (TS CCC)

Very limited space for any GI interventions

Is gradient a contributing factor? (~3% southbound)

No public transport options along Brook St.

Conservation area and listed buildings eg limited our roadside signage project options

Mersea Road

Mersea Rd - North

LUF Bid scheme and alignment with Colc City masterplan will see proposed changes to the roundabouts to create a more accessible junction gateway, supporting a more sustainable balance of transport movements, particularly connecting the south of the A134 Southway to the City centre. Design work will include the assessment of AQ and involvement of Jacobs AQ team.

Mersea Rd - South

Slow moving traffic northbound (TS CCC)

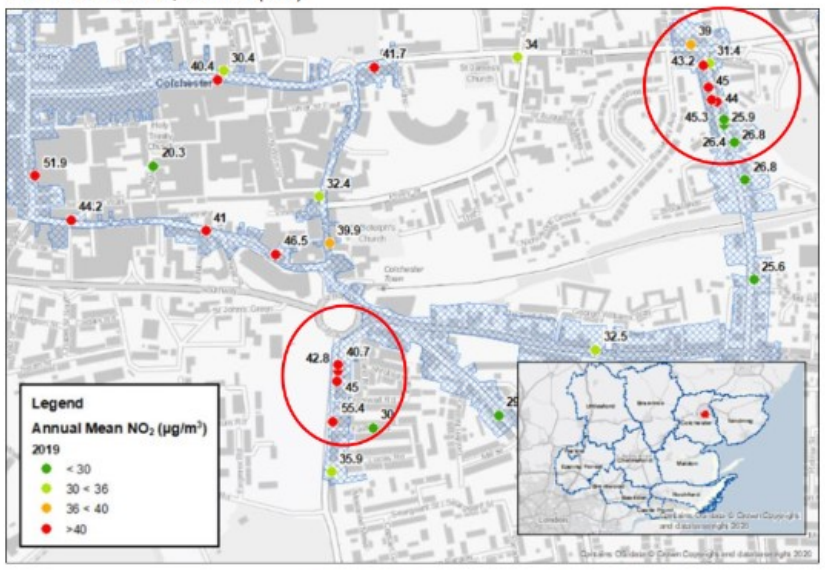
Street canyon (TS CCC)

Lack of alternative routes (TS CCC)

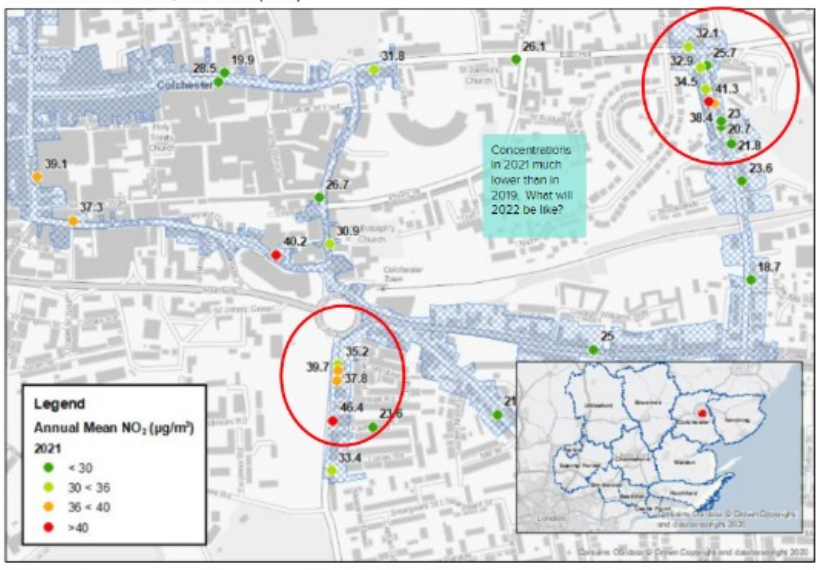
Hard to see from image, but road has steep gradient

Lack of awareness of sustainable alternatives ie great off road cycle route from Monkwick

Central Corridors AQMA, Colchester (2019)



Central Corridors AQMA, Colchester (2021)



Identifying interventions - supporting data

AQS1 NO2 Concentrations – February to November 2022

AQ Sensor	Location	Period DC	Annual DC	Mean (µg/m³)	Max Hourly Conc (µg/m³)
A	North Hill	99.5%	84.3%	24.3	102.5
B	Head Street	99.8%	76.2%	32.7	187.2
C	Saint John's Street	100.0%	76.7%	30.4	135.1
D	High Street (Town Hall)	100.0%	76.8%	20.0	101.9
E	High Street (Greyfriars)	99.5%	74.1%	20.6	119.8
F	**Mersea Road**	**100.0%**	**71.3%**	**30.7**	**119.7**
G	**Brook Street**	**97.9%**	**41.9%**	**44.1**	**175.5**
H	East Street	100.0%	73.3%	27.9	113.4
I	**Oaks Drive**	**99.9%**	**30.7%**	**15.0**	**100.1**

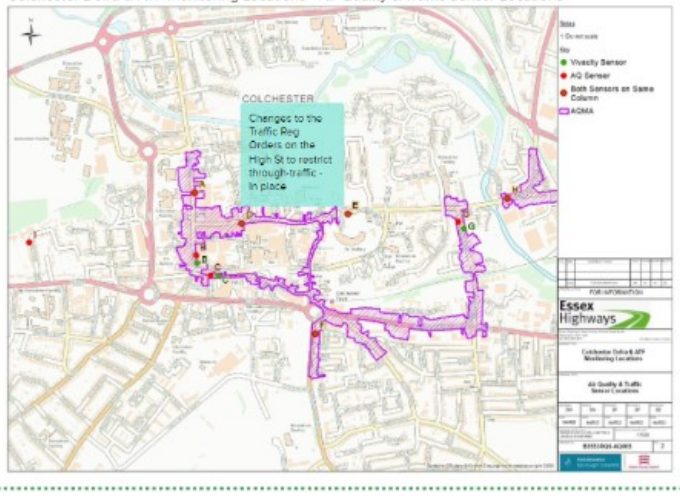
AQS1 Particulate Matter Concentrations – February to November 2022

AQ Sensor	Location	Period DC	Annual DC	Pollutant	Mean (µg/m³)	Max Hourly Conc (µg/m³)
G	Brook St	95.7%	44.4%	TSP	6.7	74.9
				PM_{10}	6.4	74.8
				$PM_{2.5}$	5.5	72.3
				PM_1	4.8	66.7
I *	Oaks Drive (Background)	21.6%	18.4%	TSP	10.5	70.2
				PM_{10}	10.2	60.8
				$PM_{2.5}$	9.6	68.8
				PM_1	8.7	65.0

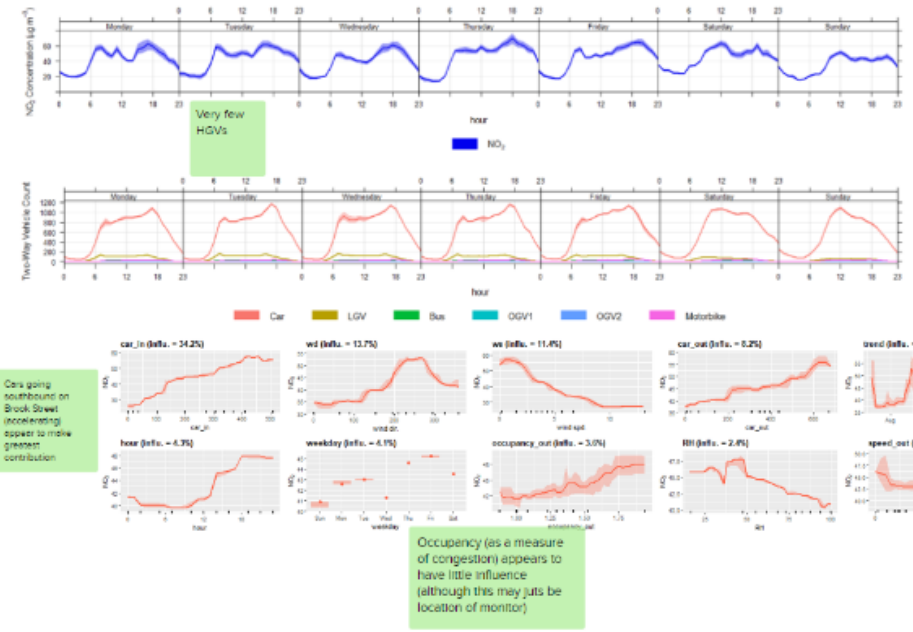
VivaCity Sensor Average Daily Two-Way Traffic Information – February to November 2022

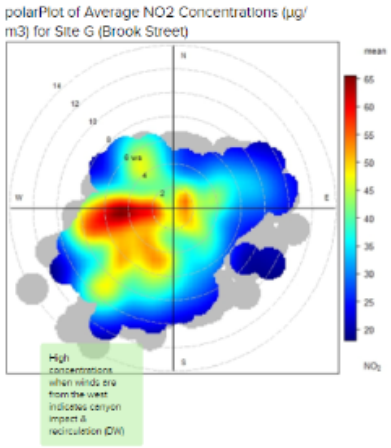
Site ID	Motorbike	Car	LGV	Bus	OGV1	OGV2	Total	Flow Weighted Speed
A	303	2,446	226	643	19	1	3,638	28.2 kph
B	555	5,054	589	701	45	4	6,947	19.9 kph
C	306	1,364	158	626	10	1	2,465	21.8 kph
D	583	3,377	367	676	10	2	5,053	25.7 kph
E	332	6,560	704	297	48	4	7,947	31.4 kph
F	**388**	**14,402**	**1,450**	**262**	**77**	**23**	**16,603**	**28.2 kph**
G	**179**	**11,227**	**1,599**	**37**	**55**	**14**	**13,111**	**32.5 kph**
H	459	17,309	2,185	349	96	11	20,408	33.6 kph

Colchester Defra & ATF Monitoring Locations - Air Quality & Traffic Sensor Locations

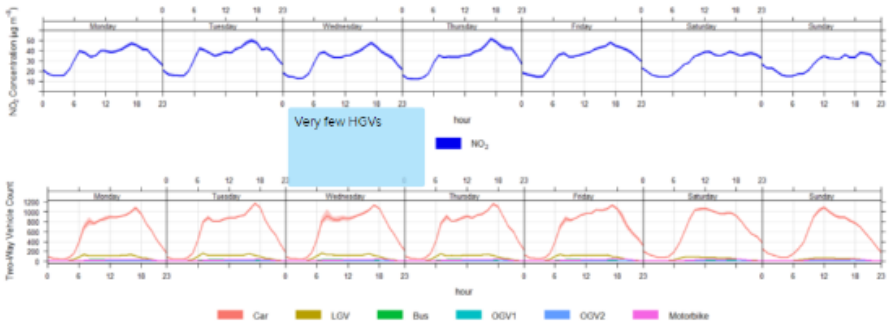


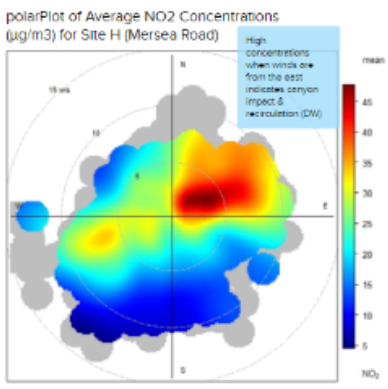
Brook Street





Mersea Road





Identifying interventions - idea generation

Add ideas for potential interventions to the post-it notes below - no idea is off the table!

Suggested categories for interventions:

Green Infrastructure | Reducing exposure to air pollution | Improving local vehicle fleet | Encouraging behavioural change | Improving flow of traffic | Reducing volume of traffic | Other

Brook Street

- Develop/ introduce a Wasserf system encourage active travel and discourage vehicle trips
- Improve walking and cycling so that people confident to use alternatives to driving
- Do more work with St James' and St Thomas More school on Travel
- Analyse where people are coming from and design appropriate targeted behaviour change programme
- Some sort of air pollution levels display to encourage drivers to switch off engines, choose a different route etc
- Is Brook St currently swept regularly and if so could the frequency be increased in order to reduce PM10 and PM2.5
- Closure / warnings etc. if conditions exist expected to trigger exceedences
- Will the A120/A133 link road affect Brook Street?
- Is it possible to optimise the signalised scoot junction? (TS CCC)
- Smart junction technology could be used to reduce congestion
- Consider banning right turn from East Hill into Brook Street
- Return to a roundabout??
- Many car trips are short journeys - extend cycle and scooter segregation and rental?
- Time restrictions on use i.e. buses/ residents only between 10am-10pm
- Maximise use of P&R, PT and cycling etc.
- Improved bus service, unreliable service from outside Colchester
- Traffic Filter (e.g. Oxford) with charge for through movements and permits for local residents
- Pricing options - be it workplace parking, CAZ charges etc with reinvestment in grants for cleaner van upgrades
- Find out the nature of journeys and whether there is scope to dissuade trips (KT) More targeted interventions.

Mersea Road

- Funding of LCWIP corridors to promote higher quality Active travel provisions from the south into the centre (and beyond)
- Mobility Hub at some point in Mersea Road, with bus, bike options to do the last leg to town
- More focus on Napier Road car park, park and stride so people park before they enter the AQMA.
- Parking supply reduction combined with P&R
- Is there space for a slip road onto A134 west bound to improve northbound traffic flow? (TS CCC)
- Does the junction with Napier Road cause southbound congestion? If so could improvements be made to optimise this junction? TS (CCC)
- One way traffic (however would need to be looked at for wider impact on other corridors) with bus gate to still allow buses two-routing
- Green walls
- More regular bus service so people see it as a viable alternative to driving
- Behaviour change programmes re bus travel from Mersea, cycling from Monkwick
- Lack of bus services which use this corridor and request the operator through a quality partnership to implement, (some vehicles that don't need to understand if the buses are the issue)
- combine delivery of new GI with the planned works to St Botolphs round about to provide a better balance between pedestrians and pollution
- Rapid transit and P&R site as part of HIF and Garden Community, provide high quality alternatives to the car
- RTS Section B will travel along East Hill

Both

- Review of parking provision / prices / discounts for EVs
- work place parking levy in city centre to discourage driving into the centre
- Increase quality of active travel infrastructure to promote greater use for short journeys.
- Increase excess to bike schemes (i.e peddle power) to increase usage
- Model to test in the Colchester Model the impact of one way working or even closing the road to motorised traffic to determine the impact on the wider network
- ViveCity Smart junctions / Multi-modal detection system (DW)
- Increased access to public electric charging
- Road Vent technology shows some promise but may be difficult to implement
- Work place parking levys to city centre private parking
- Sat Nav Routing Strategies - HGV and car
- Joined up working in implementation plan for strategy

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Baseline Emissions Study for Colchester Borough Council (CERC, 2014)

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Colchester City Council 2024 Air Quality Annual Status Report available at; https://cdn.cms42.com/essexair/colchester/Colchester_2024_ASR.pdf

Colchester City Council Electric Vehicle Charging Points available at; https://www.colchester.gov.uk/parking-and-travel/electric-vehicle-charging/

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Essex Electric Vehicle Charging Point Strategy available at; https://www.essexhighways.org/ev-strategy

Essex Highways Colchester Rapid Transit System available at; https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/colchester-schemes/colchester-rapid-transit

Essex Highways St Botolph's Circus Roundabout Regeneration available at; https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/colchester-schemes/st-botolphs-circus

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

LAQM NOx to NO2 Calculator available at; https://laqm.defra.gov.uk/air-quality/air-quality-assessment/nox-to-no2-calculator/

LAQM Policy Guidance PG.22 available at; https://laqm.defra.gov.uk/wp-content/uploads/2023/11/LAQM-Policy-Guidance-2022.pdf

LAQM Technical Guidance TG.22 available at; https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf

Source Apportionment Report for the Borough of Colchester (CERC, 2014)