
# 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: 9th July 2024

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# Executive Summary: Air Quality in Our Area

## Air Quality in Cambridge City

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. |
| 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.<br>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.<br>$PM_{10}$ refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres. |

[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

Cambridge City currently has an Air quality Management Area (AQMA) within the core city centre area which was declared in 2004 due to exceedances of nitrogen dioxide ($NO_2$) against statutory objective levels (annual average of 40µg/$m^3$). Poor air quality in Cambridge is attributed predominantly to nitrogen dioxide from vehicle emissions.

Air quality in Cambridge City has been improving in recent years and whilst 2022 saw a marked increase following the return to 'normal' post-COVID, monitored levels in 2023 remained stable. This is in keeping with national trends that have seen nitrogen dioxide levels plateau at levels below those being measured pre-COVID.

The increase in measured levels in 2022 following 'back to normal' post-COVID was in response to increased motorised vehicle movements as people began to return to work and visit the shops again. Motorised vehicle movements in 2023 remained stable when compared with 2022 (+3%) which accounts for the typically stable levels of nitrogen dioxide, however it is worth noting that levels remain well below pre-COVID levels (-10%).

The changes in modal patterns and implementation of measures to improve air quality e.g. zero emission buses on the local road network by partners help inform the analysis and interpretation of the data. Bus Passenger numbers, whilst still below pre-COVID levels (-13%) increased again between 2022 and 2023, and Park and Ride (P&R) passenger numbers have continued an upward trend with passenger numbers in 2023 above pre-COVID levels (+7%). Research undertaken by Cambridge City Council demonstrated that historically buses were one of the biggest contributors of nitrogen dioxide on the city centre streets, and it is likely that the introduction of over 40 electric buses on the P&R and city centre routes has contributed to the enhanced decrease measured in 2023 on these routes.

Also of note is that the peak AM and PM 'rush hours' are not as pronounced as they were pre-COVID with motorised vehicle movements more evenly spread across the morning and afternoon, this is likely in response to more flexible working patterns and an increased shift to working from home that were introduced during COVID, and which many companies and organisations have retained although data supporting this stopped at the end of 2022. This greater spread of motorised vehicle movements means that the chances of hourly exceedances of either nitrogen dioxide or particulates is likely to reduce.

Retail footfall has remained well below pre-COVID levels (-15%) although weekend footfall increased significantly from 2022 to 2023 by 10%, whilst weekday decreased by 12%. Use of the council owned car parks remains well below pre-COVID levels (-11%) however use increased significantly between 2022 and 2023 (+18%), with the Grand Arcade MSCP the

most popular car park. This could account for the increased levels of nitrogen dioxide measured along Pembroke Street, where cars queue for the Grand Arcade and the narrow street with high buildings creates a canyon where air pollution can become trapped. The use of motorbikes is the only mode of travel to have returned to pre-COVID levels and is up by 61%, with all forms of active travel still below pre-COVID levels.

It is worth noting that this improvement has continued against a backdrop of both population and economic growth, with Cambridge amongst the fastest growing local authorities in England. According to the 2021 Census, Cambridge grew by 14.2% since the 2011 Census, compared with a national increase of just over 6%. The Cambridge economy also grew faster (2.5% per annum in real terms) than the national average (2.2%) pre-COVID, 2011-2019.

The improvements to air quality across Cambridge City has been both in response to active measures to improve air quality implemented by Cambridge City Council and its wider partners but also from improvements within the vehicle fleet as older vehicles are replaced with new vehicles, and most notably low emission and electric vehicles. Uptake of electric vehicles in Cambridge City is above the national average with residents of neighbouring South Cambridgeshire triple the national average[3].

Whilst we have seen a marked improvement in measured levels in the city centre, further out in the major development area south of the City this is not as pronounced with some locations recording increases, although it should be noted that levels remain well below national objective levels. The major development coming forward and occupation of buildings previously under construction on the Addenbrookes Hospital site could account for this.

In addition to legal limits for nitrogen dioxide there are also statutory annual mean objective levels for fine particulate matter (PM). Monitoring is primarily focussed on $PM_{10}$ and $PM_{2.5}$. The annual objective for $PM_{10}$ is 40µg/m$^3$. This was monitored at two locations within the city in 2023. We also monitor $PM_{2.5}$ at two locations and whilst there are currently no legal limits there is a national target for $PM_{2.5}$ of 10µg/m$^3$ annual average. Whilst this target has not been adopted as an objective level under LAQM, local authorities have a responsibility to reduce $PM_{2.5}$ within their district.

[3] Local area data: Electric vehicles and charging points (parliament.uk)

Whilst we measured a reduction of levels of Particulate Matter ($PM_{10}$ and $PM_{2.5}$) during the pandemic, this was much less marked when compared to the fall in nitrogen dioxide, this is likely because the emission sources for particulate matter are much more diverse and transient often originating from outside our District. Public Health data indicates that in 2022, 57 deaths in Cambridge could be attributed to 'Particulate Air Pollution'.

Recorded levels of $PM_{10}$ and $PM_{2.5}$ either remained stable or decreased at all monitoring locations in 2023. It is also worth noting that the levels of $PM_{10}$ in Cambridge are below objective levels. Any reduction in particulates was unexpected and could possibly be attributed to the unsettled weather at the end of 2023, but we also have uncertainties relating to the quality of the data collected due to ongoing technical issues with the monitoring sites and subsequent data capture. Only a small proportion of overall particulate matter in Cambridge is related to vehicular traffic, so significant drops in traffic levels will only have a small impact on overall particulate pollution levels in the city.

The continued downward trend in 2023 despite continued growth within the city may also in part be attributed to weather patterns. Measured pollutant levels for nitrogen dioxide in November and December were significantly below what would typically be expected in the winter months. The spate of named storms saw the 'year end on a turbulent note with a run of very unsettled, wet and windy weather'[4]. As highlighted above the reduction in particulates was unexpected. Emerging research supports that more extreme weather impacts both positively and negatively on air pollution depending on site specifics. Windier more turbulent weather may have allowed for improved dispersion at the latter end of the year and can influence the proportion of transient pollutants[5]

Pre-COVID, levels of nitrogen dioxide had fallen below objective levels at all monitoring locations. There was a sharp decrease during the COVID lockdowns in response to the subsequent restrictions; particularly those associated with the reduction in vehicle movements across the district. Monitored levels have remained well below pre-COVID levels in both 2022 and 2023. Where there are 5 subsequent years with all monitored levels below objective levels, DEFRA requires an AQMA to be revoked.

[4] Climate summaries - Met Office

[5] Impact of weather types on UK ambient particulate matter concentrations - ScienceDirect

We will therefore be moving forward revoking the AQMA during 2024. In preparation for this, Cambridge City Council in partnership with South Cambridgeshire District Council and wider partners has developed the Greater Cambridge Air Quality Strategy. This sets out commitments by all partners for delivering continued air quality improvements across the city over the next 5 years.

Whilst it is a great achievement that air quality has improved significantly in Cambridge City it is widely accepted that there is no safe level of air pollution. The Strategy has therefore committed to work towards World Health Organisation (WHO) air quality guidelines with interim targets to be achieved within the lifetime of the strategy (2024-2029).

Greater Cambridge is a major growth area with large scale development and population increases proposed and expected in the next 10-20 years. The greatest challenge faced by Cambridge City is to continue to deliver improved air quality to its residents and visitors whilst continuing to support the productivity, economy, and prosperity of Greater Cambridge.

Air Quality data for 2023 is provided in Chapter 3 and Appendix A.

## 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[6] 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 (PM2.5, the pollutant of most harmful to human health. The Air Quality Strategy[7] 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[8] 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

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

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

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

personal travel, and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Locally, planning and action to improve air quality involves working with a range of public sector partners, as different authorities are responsible for different areas of activity.

Cambridge City Council is the local authority with the legal responsibility to improve air quality in the administrative boundary of Cambridge City. Cambridgeshire County Council has been responsible for traffic management, highways, public transport and improving public health and, as such, has a legal responsibility to work with the City Council and to the development and monitoring of actions to improve air quality in the city. Both councils have worked together for more than 15 years to bring in measures to improve the city's air quality.

The Greater Cambridge Partnership (GCP) is a Joint Committee of Cambridgeshire County Council, Cambridge City Council and South Cambridgeshire District Council, and forms the local delivery mechanism for a City Deal with central Government, bringing powers and investment worth up to £1 billion over 15 years to deliver vital improvements in infrastructure and support the creation of new jobs, new homes and apprenticeships. The GCP aims to develop a sustainable transport network for the Greater Cambridge area (Cambridge and South Cambridgeshire) that keeps people and businesses physically connected as the area continues to grow. The GCP focusses on improvements to public transport and active travel modes, such as cycling and walking.

The Cambridgeshire and Peterborough Combined Authority (CPCA), led by an elected Mayor, has adopted the strategic responsibilities for highways, traffic and public transport. CPCA officers are now fully engaged with the Cambridge Air Quality Action Planning process.

In 2017 an Air Quality Action Plan (AQAP) was developed with Cambridgeshire County Council and the GCP, which sets out plans to reduce emissions, with cleaner air for all residents, visitors and workers in the city. With objective levels being achieved for five consecutive years and plans to revoke the AQMA in the coming year more recently we have been working with South Cambridgeshire District Council to develop the Greater Cambridge Air Quality Strategy which will replace the AQAP once the AQMA is revoked. This will align the approach of the two councils in minimising impact on air quality (particularly in relation to new developments). The emerging joint Greater Cambridge Local Plan will seek to address air quality issues, including considering the transport accessibility and air quality

impacts in the identification of the emerging development strategy as well as through design and infrastructure policies.

## Conclusions and Priorities

Whilst levels of Nitrogen Dioxide continue to remain below pre-COVID levels, 2022 saw a marked increase for all pollutants. However, levels typically stabilized or slightly decreased in 2023 alongside comparable levels of motorised vehicle movements in 2022 and 2023. The slight decreases in air pollution in 2023 may be attributed to the stormy and unsettled weather at the latter end of the year. and implementation of wider measures such as introduction of electric buses which allow for further improvements reducing pollutants at source.

There are still concerns by Cambridge City Council Air Quality Officers that the levels measured are not representative due to poor data capture and could be masking an upward trend or 'creep' in pollutant levels in some areas of the city, most notably areas subject to major development; which is the primary concern for those officers due to large scale planned development in the area. The decision not to proceed with the sustainable travel zone means lower incentives for modal shift from private vehicles to sustainable forms of travel than if the zone was to be implemented.

Further to this there are concerns from Cambridge City Council Officers and Members that the loss of the AQMA and the legislative power this provides, alongside the delay to the emerging Local Plan, air quality will become less of a priority / concern in the planning process, risking a future worsening of air quality if not considered adequately and appropriately at the planning stage.

However, despite these ongoing areas of concern and uncertainty we acknowledge that levels of nitrogen dioxide and particulates ($PM_{10}$) currently remain well below objective levels, and as requested by DEFRA we will move towards revoking our AQMA in 2024.

### Priorities for 2024

- Deliver the actions and priorities committed to in the Greater Cambridge Air Quality Strategy
- Provide a 'one page' summary of the ASR to be distributed in the 'Cambridge Matters' magazine, which is delivered to all residents in Cambridge City, making residents more aware of the air quality in the City and the monitoring work the council undertakes.

- Carry out a programme of awareness raising, working in partnership with South Cambridgeshire District Council where appropriate, raising the profile not only of what people can do to reduce their impact but also promoting the work the Council and wider partners do for monitoring air quality and implementing measures for improvement.
- To increase confidence in the data collected across the city, complete the 'Automatic Monitor Replacement Programme' and implement the 'wind cap' diffusion tube project.
- Carry out a review of all diffusion tube locations. Cambridge City Council deploys over 70 diffusion tubes across the City. Historically, these have been sited to monitor pollutant levels within the AQMA, focussed on the core city centre. Whilst we will continue to monitor levels within the core area, further spread of the diffusion tubes incorporating major development sites coming forward in the future should be considered to give greater spread across the city.
- Continue to work with the Greater Cambridge Shared Planning service to maintain the profile of air quality and continue to minimise impact of development on air quality.
- Continue to work with the Greater Cambridge Partnership and the Cambridgeshire and Peterborough Combined Authority to support strategic transport planning and infrastructure investment.
- Continue to work with Cambridgeshire County Council on matters relating to the highways and public health.

The greatest challenge faced across Cambridge City in relation to air quality is maintaining and continuing to improve air quality across the city in response to the planned population increase and development coming forward over the next 10 years. This requires close working with the planning department and there are concerns that national planning policy could undermine the ability to deliver air quality improvements at a local level as legislation and national policy doesn't currently provide support for seeking air quality improvements beyond LAQM objective levels.

We continue to work with the planning department through the deployment of local policy and with key partners to deliver the infrastructure required to support the switch from internal combustion engines to low emission vehicles for both private and public fleets which is required for wider air quality improvements.

# Local Engagement and How to get Involved

## Local Engagement

Regular articles on air quality are included in the Cambridge City Council magazine, 'Cambridge Matters', which is delivered free of charge to all residents. Information about air quality is also provided on the Cambridge City Council website which is reviewed and updated regularly. We try to ensure all relevant information is accessible to all and provide clarity and details of roles and responsibilities for key areas on our website; linking with partner organisations to signpost residents effectively. Our website also links directly to both 'UK-Air' and 'Air Quality England' so residents can access real time monitoring data within the district. Cambridgeshire County Council includes air quality information on its 'Cambridgeshire Insight' information website.

Cambridge City Council is fortunate that well established partnerships have been formed over the years with other key delivery organisations and we work closely with these partners in promoting and disseminating information about air quality. For example, for Clean Air Day and the School Streets pilot, the latter of which aims to raise awareness of air quality issues within schools throughout the city.

Cambridge residents are very engaged with air quality issues and frequently raise questions or make suggestions via our email eqg@cambridge.gov.uk.

## How everyone can help to improve air quality

Everyone is affected by the quality of the air that we breathe, and everyone has a role to play in improving air quality in Cambridge. Here are some examples of what you can do:

- Avoid using your car for short trips (under 2 miles) - short trips are considered to be more polluting than longer trips as modern engines needs to reach a high temperature to work efficiently; on short trips it won't reach that temperature.
- Use walking or cycling for short trips in the City.
- Try using public transport.
- Try using one of the scooter or bike hire schemes in the City for short journeys, if you don't own your own bike.
- Information on public transport around Cambridge can be found on the Cambridgeshire County Council website, as well as the Cambridgeshire and Peterborough Combined Authority website.

- My Bus Trip is a useful app for real-time bus information.
- MotionMap is a journey-planning app for travel by bus, train, walking and cycling; it's available from app stores. Citymapper includes Cambridge as part of its London mapping area.
- Walking and cycling help you to stay physically and mentally healthy plus saves you money in fuel costs.
- When driving, use techniques that help you use less fuel, like driving more slowly and smoothly. You could use 10% less fuel and save money by following the tips on the AA website.
- Switch it off - turn off your engine if you are caught in a traffic jam or have to wait at level crossings; not only will this reduce your emissions, but you will save fuel too.
- Consider using an alternative fuel vehicle – More people than ever are buying electric vehicles. There are charging points at on-street locations across the city and in some of our car parks. Plans are underway to introduce more to meet demand.
- If you own more than one car, consider if you could sell one and make use of a car club instead? As well as reducing air pollution, for many people this will save them money too. There are two car clubs in Cambridge. Enterprise and Zipcar .
- If you only own one car, could you switch more of your journeys to public transport, walking and cycling, and use a car club for those trips where you really need a car?
- Consider working at home as often as possible, or car sharing if you need to drive to work.
- Use less energy at home – wood, coal, oil and gas burning all contribute to air pollution.

If you would like to know more about air quality in Cambridge, please visit our air quality pages, contact us by phone on 01223 457900 or email eqg@cambridge.gov.uk.

## Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Department of Cambridge City Council with the support from colleagues within Cambridgeshire County Council and the Greater Cambridgeshire Partnership.

This ASR has been approved by:

| | |
|---|---|
| Robert Pollock | Chief Executive, Cambridge City Council |
| Sam Scharf | Director, Communities, Cambridge City Council |
| Jeremy Smith | Group Manager, Transport Strategy and Funding, Cambridgeshire County Council |
| Stephen Kelly | Joint Director of Greater Cambridge Shared Planning & 3C Building Control |
| Val Thomas | Acting Director of Public Health, Cambridgeshire County Council |
| Isobel Wade | Assistant Director, Sustainable & Inclusive Growth, Greater Cambridge Partnership |

If you have any comments on this ASR, please send them to / contact Elizabeth Bruce at:

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## Figures



## Tables

# 1 Local Air Quality Management

This report provides an overview of air quality in Cambridge City 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 Cambridge 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 Cambridge City Council can be found in Table 2.1. The table presents a description of the AQMA that is currently designated within Cambridge City. Appendix D: Map(s) of Monitoring Locations and AQMAs' provides maps of the AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation are as follows:

- Nitrogen Dioxide ($NO_2$) annual mean

Nitrogen Dioxide levels across the city including within the AQMA fell below objective levels prior to the COVID outbreak and have remained below the objective levels since. In its ASR Appraisal report last year, DEFRA recommended that we revoke our AQMA as levels of nitrogen dioxide have remained below objective levels for five consecutive years.

The view from Officers and Members at Cambridge City Council was that an Air Quality Strategy should be in place before the AQMA is revoked. As such, we have been developing a joint Air Quality Strategy with South Cambridgeshire District Council over the past year. The Greater Cambridge Air Quality Strategy was adopted at the March 2024 Environmental & Community Scrutiny Committee. We propose to revoke the existing AQMA during 2024.

## Table 2.1 – Declared Air Quality Management Areas

| AQMA Name | Date of Declaration | Pollutants and Air Quality Objectives | One Line Description | Is air quality in the AQMA influenced by roads controlled by Highways England? | Level of Exceedance: Declaration | Level of Exceedance: Current Year | Number of Years Compliant with Air Quality Objective | Name and Date of AQAP Publication | Web Link to AQAP |
|---|---|---|---|---|---|---|---|---|---|
| Cambridge | 2004 | NO2 Annual Mean | An area encompassing the inner ring road and all the land within it | NO | Parker St 49 (CM) Emmanuel St 59 (DT) micrograms per cubic metre | 0 | 6 | Cambridge Air Quality Action Plan, 2018 | https://www.cambridge.gov.uk/air-quality-action-plan |

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

☒ **Cambridge City Council confirm that all current AQAPs have been submitted to Defra**

## 2.2 Progress and Impact of Measures to address Air Quality in Cambridge City

DEFRA's appraisal of last year's ASR concluded that Cambridge City Council should revoke its Air Quality Management Area (AQMA) given that we have at least five years of continuous data without an exceedance of the annual mean objective for nitrogen dioxide. Further to this they would not accept or review an updated Air Quality Action Plan (AQAP) which was due to be updated in 2023. We will be revoking the AQMA in 2024 following adoption of the Greater Cambridge Air Quality Strategy in March 2024. The AQMA and associated AQAP remained in place for the duration of 2023.

- **The Local Plan and Development Management**

Development management has a key role to play in delivering air quality improvements. Cambridge City Council has been successful in driving improved air quality in the district through local planning policy. The Cambridge City Council Local Plan (2018), Policy 36 'Air Quality, Odour & Dust', which specifically references our AQMA and AQAP, has been the mechanism for driving improvements in air quality further supported by detail included in the Greater Cambridge Sustainable Design & Construction Supplementary Planning Document (2020).

Cambridge City Council and South Cambridgeshire District Council now operate under a Greater Cambridge Shared Planning service operating over their combined area. Adopted and emerging plans covering the Greater Cambridge region will bring forward significant levels of development over the coming decades. The greatest challenge faced by Cambridge City is both maintaining and continuing to improve air quality despite major growth.

The emerging joint Local Plan will cover Greater Cambridge. Work on the emerging plan seeks to address air quality issues, including considering the transport accessibility and air quality impacts in the identification of the emerging development strategy, as well as through design and infrastructure policies. In particular it will introduce a single air quality policy for both districts. It was agreed at the Environment & Community Scrutiny committee in October 2023 that Cambridge City Council would pursue a joint air quality strategy with South Cambridgeshire District Council. Elements of the air quality strategy would be delivered via the air quality policy in the emerging joint Local Plan, thereby providing a mechanism for driving air quality improvements within the city.

There are concerns amongst Cambridge City Council Members and Officers that without the AQMA mechanisms in place to drive air quality improvements above and beyond the requirements set out in legislation, we will lose the ability to further improve air quality within the city and therefore, the view is that the AQMA should not be revoked until a new and robust Air Quality Strategy is in place.

Additionally, external factors mean that the emerging joint Local Plan will likely not be adopted before 2028. Given the scale of development coming forward across Greater Cambridge there are concerns that without an updated Local Plan policy to drive air quality improvements beyond those required by legislation, and lack of statutory support for the air quality strategy targets, that there will be a worsening of air quality across the district as major development comes forward.

- **Greater Cambridge Air Quality Strategy**

Given the transboundary nature of air pollution and that planning for both Cambridge City and South Cambridgeshire District Council are dealt with under a single planning service, it was a logical step to pursue a joint air quality strategy with South Cambridgeshire District Council. It was agreed that an Air Quality Strategy would be developed and adopted prior to the revocation of the AQMA in order to safeguard air quality in the district and have a mechanism in place to continue improvements. It was agreed to pursue a joint strategy and work towards World Health Organisation (WHO) air quality guideline values (with interim targets set within the 5 years lifetime of the strategy) at the October 2023 Environment & Community Scrutiny Committee. It should be noted that the interim targets and the WHO air quality guideline values are non-statutory, compared to the statutory UK air quality objectives.

| Pollutant | Interim Target Level* | WHO 2021 |
|---|---|---|
| **$PM_{10}$ µg/m³** | 20 µg/m³ | 15 µg/m³ |
| **$NO_2$ µg/m³** | 20 µg/m³ | 10 µg/m³ |
| **$PM_{2.5}$ µg/m³** | 10 µg/m³ | 5 µg/m³ |

*Table 2: Greater Cambridge Air Quality Strategy - Interim Annual Mean Target Levels*

*to be achieved by 2029

The full strategy was adopted unanimously at committee in March 2024 and can be viewed at [Improving air quality - Cambridge City Council]

- **Air Quality Action Plan**

As the AQMA and associated AQAP are still in place until the AQMA is revoked, we have reported on progress, although the AQAP as advised has not been updated.

Cambridge City Council has taken forward a number of direct measures during the current reporting year of 2023 in pursuit of improving local air quality. Table 2.2 details all measures completed, in progress or planned. In total, the table includes 133 measures, with the type of measure and the progress 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.

Most of the projects currently in the Air Quality Action Plan are already ongoing, completed, or longer-term projects. Key completed measures for 2023 are:

- 1st phase of installation of new electric vehicle charge points (EVCP) in council run car parks. Cambridge City Council, in collaboration with Connected Kerb, launched a project to expand publicly accessible EVCP. This 15-year initiative aims to install up to 600 charging points over the first 6 to 7 years across 14 Council car parks. The supplier provides the charge points at no cost to the Council, with 60% of costs funded by the Department of Transport's on street residential charge point scheme (ORCS) and 40% by Connected Kerb. Residents can access these points overnight without parking fees from 6pm to 8am, encouraging uptake of zero emission vehicles, especially for those without private driveways. The first phase deployed 75 EVCPs including 40 new EVCP's at the Queen Anne Terrace MSCP.
- Zebra Buses – 30 new zero emission double-decker buses on all P&R routes into Cambridge and on two City Centre routes in Cambridge. This also includes the upgrade of the depot to allow charging infrastructure to be installed.
- Improvements to cycle lanes – Trumpington Road.
- Cambridge South Station – construction continues.
- Decision on Sustainable Travel Zone – The Council Members decided not to pursue the introduction of a Sustainable Travel Zone.

- Approval of Phase 2 Cambridge South East Transport (CSET) Scheme and decision to ask the County Council to make a Transport Works Act Order application, subject to funding availability
- Ongoing Construction and design of Greater Cambridge Greenways.
- Whippet Buses - 9 new zero emission single decker buses to operate the Universal bus service through the heart of the city to be delivered by the end of the year. This will bring the number of pure electric buses operating in central Cambridge up to 41, all of them focused on short distance, high-frequency routes where they can offer the greatest benefits.
- Car Clubs - Cambridge City Council operates a Car Club in partnership with Cambridgeshire County Council, promoting the use of the Enterprise Car Club. This club offers access to 30 low-emission hybrid vehicles (2 of which are full Electric). With the roll-out of EVCP's across the city in both car parks and planned residential sites, we have been working with Enterprise Car Club to get more integration with fully Electric Vehicles.

Cambridge City Council expects the following measures to be completed over the course of the next reporting year:

- Milton Road public transport and active travel scheme.
- Taxi charge point project (OLEV Funded).
- Joint Air Quality Strategy with South Cambridgeshire District Council which forms Greater Cambridge under the joint planning service.
- Revocation of the AQMA.
- Local Transport and Connectivity Plan.
- Decisions on; submission of Transport Works Act Order applications for Cambourne to Cambridge public transport, cycling and walking route and Cambridge South East Transport Scheme (CSET) phase 2, next phase of development for Waterbeach to Cambridge busway and Cambridge Eastern Access.
  Continued delivery of Greenways.
- Decision on possible expansion of the Cambridge Smoke Control Areas.

Focus continues to be on major transport projects with key decisions being made in the coming year on Cambourne to Cambridge, Waterbeach to Cambridge and CSET. These will all allow for long term demand management planning and encourage modal shift for visitors and residents in Cambridge with the aim of reducing congestion and improving air quality.

Cambridge City Council's priorities for the coming year are as follows:

- *Revoke AQAP* – Air Quality has been steadily improving for the past five years and as directed by DEFRA we will be revoking our Air Quality Management Area in 2024.
- *Smoke Control Area* – Cambridge City Council will be undertaking a Feasibility Study in 2024 to consider the effect of changing the Smoke Control area boundaries on air quality as well as considering the health and socio-economic impacts a boundary change may introduce. The findings of the Feasibility Study will be presented at the Environment & Community Scrutiny Committee to decide what future action to take.
- *Awareness raising* - Undertake awareness raising activities with members of the public to improve understanding of air quality and how the public can improve air quality and minimise their exposure to poor air quality. This will include updating our website and including a 1-page overview of air quality data and progress against actions in our quarterly magazine sent to all residents. We also aim to run a mini competition to have local school children design artwork for our monitoring cabinets to raise awareness of air quality issues.

Cambridge City Council worked to implement these measures in partnership with the following stakeholders during 2023:

- South Cambridgeshire District Council
- Greater Cambridgeshire Partnership
- Cambridgeshire County Council
- Cambridgeshire and Peterborough Combined Authority

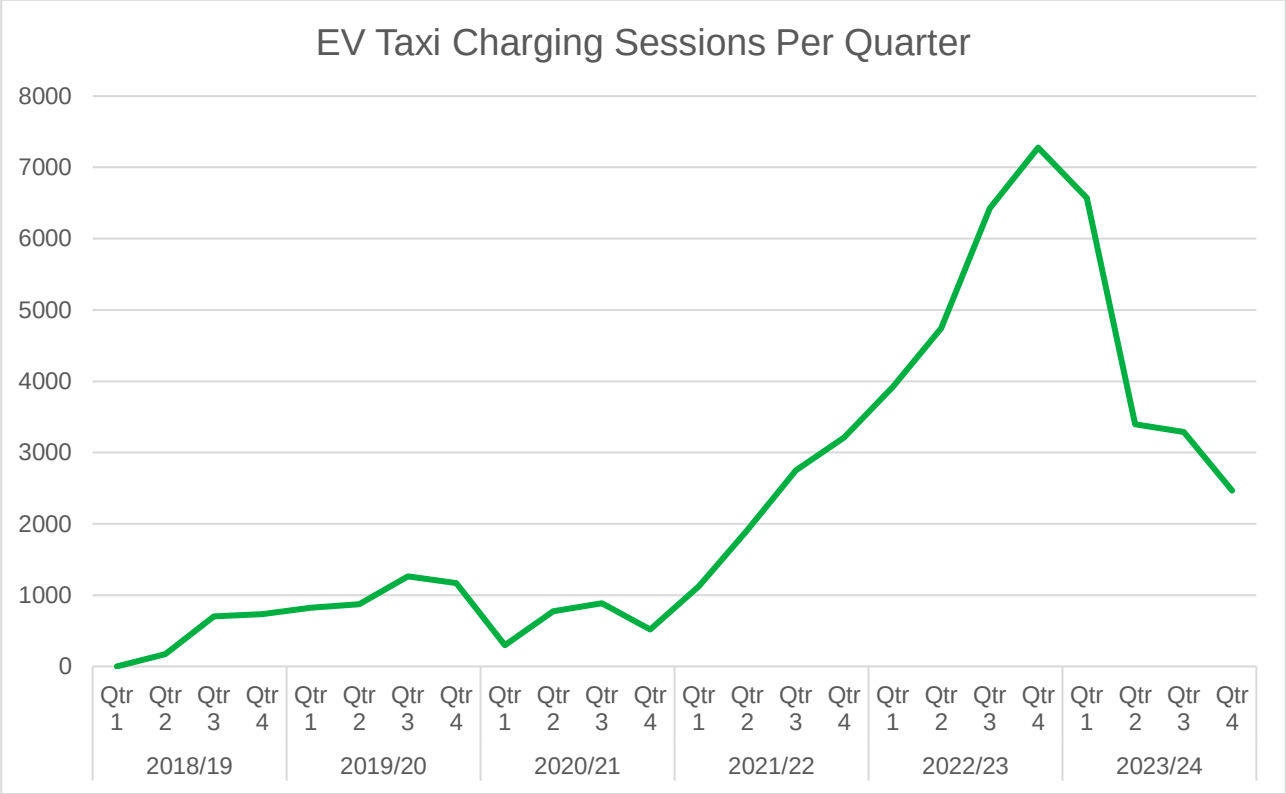
The principal challenges and barriers to implementation that Cambridge City Council anticipates facing are the lack of ambitious statutory requirements from National Government with regards to air quality. This could mean that the Joint Air Quality Strategy is not given enough weight when planning decisions are made plus access to funding to implement costly measures to facilitate modal shifts and behavioural change.

The proposed corridor schemes and wider raft of pedestrian, cycle and bus lane improvement represent a package of measures to encourage modal shift away from private vehicles towards public transport schemes and more active travel. These public transport schemes need to be operated by zero emission vehicles to avoid major routes used by these schemes seeing an increase in pollution due to the increased volumes of public vehicles.

Progress on the following measures has been slower than expected:

- Installation of Electric Vehicle Charge Points for Taxis:5 charge points were installed at the beginning of 2022/23 with planned installation at the remaining two sites stalling

during 2023 due to issues pertaining to power supply and land ownership. We hope these will be able to progress during 2024. Take up of the charge points has increased since early 2021 which was seen into the first quarter of 2023 with over 6000 sessions which is in line with trend, but there was a significant drop off to just over 3000 sessions in the second quarter which further reduced into quarters 3 and 4. The drop off is believed to correspond with a price increase as prices had been capped prior to this point.



## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1a | Expansion of Park and Ride Services | Alternatives to private vehicle use | Bus based Park & Ride | 2019 | 2025 | Cambridgeshire County Council / Greater Cambridge Partnership / CPCA | Greater Cambridge Partnership | NO | Funded | > £10 million | Implementation | This measure is to provide an alternative option to support future travel requirements and reduce emissions from private vehicles. | No additional pollution from additional bus services | The GCP has increased provision at Trumpington Park and Ride by 274 spaces and additional 5 bus bays. The GCP has also extended Babraham Park and Ride. Cambridge South West Travel Hub has planning permission and is due to begin construction in 2024/25. The GCP's programme includes plans for c.6500 new spaces at three new P&R sites | Work is ongoing at other sites through preparation of EIA / Transport orders. |
| 1b | Expansion of Park and Ride Services | Alternatives to private vehicle use | Rail based Park & Ride | 2019 | 2025 | Greater Cambridge Partnership | Greater Cambridge Partnership | NO | Not Funded | < £10k | Planning | This measure is to provide an alternative option to support future travel requirements and reduce emissions from private vehicles. | Completion and opening | Options for a Travel Hub at Foxton railway station have been developed. More information: http://www.greatercambridge.org.uk/transport/transport-projects/ | Approved at Dec 2021 GCP committee. Funding Stream is required to proceed with this project. |
| 2 | Quality Bus partnerships | Alternatives to private vehicle use | Other | 2012 | 2035 | CPCA | CPCA | NO | Not Funded | < £10k | Implementation | This measure is to provide an alternative option to support future travel requirements and reduce emissions from | QBP agreement for current services and all new services | Operators waiting for outcome of CPCA bus services review and central government bus strategy. | CPCA Looking at bus provision in the region. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | private vehicles. | | | |
| 3 | Camshare | Alternatives to private vehicle use | Car & lift sharing schemes | 2012 | 2040 | Cambridgeshire County Council | Cambridgeshire County Council | NO | Partially Funded | £1 million - £10 million | Implementation | This measure is to provide an alternative option to support future travel requirements and reduce emissions from private vehicles. | n/a | 5,000 members | Ongoing routine. Http://www.travelcambs.org.uk/car-share/ |
| 4 | Provision of car parking spaces for car club vehicles | Alternatives to private vehicle use | Car Clubs | 2012 | 2040 | Parking Services Cambridge City Council | Car club providers | NO | Funded | £1 million - £10 million | Completed | This measure is to provide an alternative option to support future travel requirements and reduce emissions from private vehicles. | n/a | Cambridge City Council and Cambridgeshire County Council procured a car club operator to operate a car club. Currently 1438 members. 37 vehicles, and all are hybrid. | Council working with OZEV to install electric charge points on street and in car parks for car club use. |
| 5 | Provision of on-street car club parking spaces | Alternatives to private vehicle use | Car Clubs | 2012 | 2040 | Parking Services Cambridge City Council / Cambridgeshire County Council | Car club providers | NO | Funded | £1 million - £10 million | Completed | This measure is to provide an alternative option to support future travel requirements and reduce emissions from | n/a | Cambridge City Council and Cambridgeshire County Council procured a car club operator to operate a car club. Currently 1438 members. 37 vehicles, and all are hybrid. | Council working with OZEV to install electric charge points on street and in car parks for car club use. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | private vehicles. | | | |
| 6 | Require a site-wide car club strategy for large-scale Major sites - detailing the location and phasing of the charge point installations | Alternatives to private vehicle use | Car Clubs | 2020 | 2025 | Environmental health / Planning / Cambridge City Council | Developers via S106 or other agreement | NO | Funded | < £10k | Completed | This measure is to provide an alternative option to support future travel requirements and reduce emissions from private vehicles. | n/a | Not recorded | Planning requirement in AQAP V2 and included in Greater Cambridge Sustainable Design and Construction SPD. |
| 7 | Require 1 car club vehicle per 500 parking spaces, in a new development, 1 vehicle per 10,000 m2 in non-residential developments. | Alternatives to private vehicle use | Car Clubs | 2020 | 2025 | Environmental health / Planning / Cambridge City Council | Developers via S106 or other agreement | NO | Funded | < £10k | Completed | This measure is to provide an alternative option to support future travel requirements and reduce emissions from private vehicles. | n/a | Not recorded | Planning requirement in AQAP V2 and included in in Greater Cambridge Sustainable Design and Construction SPD. |
| 8 | Promotion of electric bike hire / hub schemes | Promoting Travel Alternatives | Promotion of cycling | 2019 | 2025 | Environmental health / Planning / Cambridge City Council | Project basis | NO | Funded | < £10k | Completed | This measure is to provide an alternative option to support future travel requirements and reduce emissions from | n/a | Cambridge City Council successfully bid for 30 e-cargo bikes, for councils, business and resident use, which are now in use. | Forward thinking developers are already proposing e-bike hubs on large developments as sustainable transport infrastructure to mitigate air pollution impact. Business parks are now looking at how they could offer electric bike hire. |

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| | | | | | | | | | | | | private vehicles. | | | |
| 9 | Develop policies to require electric bike charge hubs and parking in new residential areas without off street parking. | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2025 | Environmental health / Planning / Cambridge City Council | Project basis | NO | Funded | < £10k | Completed | This measure is to provide an alternative option to support future travel requirements and reduce emissions from private vehicles. | n/a | Cambridge City Council successfully bid for 30 e-cargo bikes, for councils, business and resident use, which are now in use. | Forward thinking developers are already proposing e-bike hubs on large developments as sustainable transport infrastructure to mitigate air pollution impact. Business parks are now looking at how they could offer electric bike hire. |
| 10 | Develop policies to promote electric bike charging facilities in workplaces / car parks / require in new workplaces. | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2025 | Environmental health / Planning / Cambridge City Council | Project basis | NO | Funded | < £10k | Planning | This measure is to provide an alternative option to support future travel requirements and reduce emissions from private vehicles. | n/a | Discussions with Partners. | Will need to complement existing cycle parking requirements and space implications. Will need to consider if access is open or restricted. |

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| 11 | Provision of electric scooters (trial) | Alternatives to private vehicle use | Other | 2020 | 2023 | CPCA | Operator | NO | Funded | < £10k | Implementation | This measure is to provide an alternative option to support future travel requirements and reduce emissions from private vehicles. | n/a | 400 e-scooters and 100 e-bikes in DfT trail, patronage increased following easing of lockdown Scooters continue to be used in and around Cambridge. 80k-116k rides per month in 2023. Most popular amongst 26-39 year old age group. Most rides take place around 8am and 5pm on weekdays, suggested used for commuting and education. | 12 month trial in and around Cambridge. VOI funds the trial. No cost to the Council. VOI report 27% of our riders in Cambridge reported that they are using e-scooters for journeys which were previously taken by car, ride-share or taxi. Responses based on in-app survey in 2021. Trial initially extended to Nov 2022. Confusion over whether trial just operates in City or surrounding areas. |
| 17 | Last mile delivery based from P&R sites | Freight and Delivery Management | Freight Partnerships for city centre deliveries | 2023 | 2026 | Cambridge City Council / Cambridgeshire County Council / CPCA / Greater Cambridge Partnership | Cambridge City Council / Cambridgeshire County Council / CPCA / Greater Cambridge Partnership | NO | Funded | £10k - 50k | Planning | This measure is to reduce the number of domestic and business deliveries, thus reducing traffic and emissions | n/a | GCP has appointed consultants to carry out Feasibility Study. | The trial has the potential to link with P&R sites for outward goods. |
| 18 | Click and Collect Hubs at P&R sites | Freight and Delivery Management | Freight Consolidation Centre | 2023 | 2026 | Cambridge City Council / Cambridgeshire County Council / CPCA / Greater Cambridge Partnership | Cambridge City Council / Cambridgeshire County Council / CPCA / Greater Cambridge Partnership | NO | Funded | £10k - 50k | Planning | This measure is to reduce the number of domestic and business deliveries, thus reducing traffic and emissions | n/a | GCP has appointed consultants to carry out Feasibility Study. | The trial has the potential to link with P&R sites for outward goods. |
| 19 | Unified consolidation Centres | Freight and Delivery Management | Freight Consolidation Centre | 2023 | 2026 | Cambridge City Council / Cambridgeshire County Council / CPCA / Greater Cambridge Partnership | Cambridge City Council / Cambridgeshire County Council / CPCA / Greater Cambridge Partnership | NO | Funded | £10k - 50k | Planning | This measure is to reduce the number of domestic and business deliveries, thus | n/a | GCP has appointed consultants to carry out Feasibility Study. | The CPCA LTCP policy to promote sustainable urban freight distribution is under development. This would have a regional emphasis but would benefit all areas. A pilot is planned for implementation in the next 12 months |

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| | | | | | | | | | | | | reducing traffic and emissions | | | |
| 20 | City Centre restrictions | Traffic Management | Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane | 2014 | 2015 | Cambridgeshire County Council / Cambridge City Council | Cambridgeshire County Council / Cambridge City Council | NO | Funded | £50k - £100k | Completed | This measure is to reduce the number of domestic and business deliveries, thus reducing traffic and emissions | n/a | HGV, vans and private vehicles not permitted in Cambridge Core Area 10am - 4pm | The GCP-led review of the city road network user hierarchy proposes extending vehicular access restrictions across a wider part of the city centre to prioritise walking and cycling and reduce traffic levels and emissions |
| 22a | Cycle Delivery Services | Freight and Delivery Management | Other | 2014 | 2015 | Cambridgeshire Couty Council / Cambridge City Council | Commercial operators | NO | Funded | £50k - £100k | Completed | This is to reduce traffic and keeping levels below NAQO in future. | n/a | GCP considering further incentives for cycle deliveries | Zedify (Cambridge) use specialist cargo-bikes and electric vehicles. Cycle deliveries are used for home delivery of take-away food. |
| 22b | Provision of e-cargo bikes to local businesses and deliveries | Freight and Delivery Management | Other | 2020 | 2022 | Cambridgeshire County Council / Cambridge City Council | eCargo Bike grant fund, GCP, City Changer Cargo Bike (Horizon 2020 project) | NO | Funded | £100k - £500k | Completed | This is to reduce traffic and keeping levels below NAQO in future. | n/a | 4 new bikes in use in the City Centre and trial scheme set up for business to "try before you buy" | Scheme continues to be built upon and significant learning around insurance, storage, charging, locking and booking systems has been made. Scheme continues to attract interest. |
| 23 | Air Quality Policy in emerging Joint Local Plan | Policy Guidance and Development Control | Other policy | 2023 | 2028 | Environmental Health / Planning / Joint Team City and SCDC | Environmental Health / Planning / Joint Team City and SCDC | NO | Funded | < £10k | Planning | This is to reduce traffic and emissions and keeping levels below | Air Quality policies in Joint Local Plan | Plan in preparation. First Proposals joint emerging policy consulted upon. | External factors mean the Local Plan is expected to be adopted in 2028. |

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| | | | | | | | | | | | | NAQO in future. | | | |
| 24 | Air Quality Policy in adopted Local Plan | Policy Guidance and Development Control | Other policy | 2018 | 2024 | Environmental Health / Planning / Joint Team City and SCDC | Environmental Health / Planning / Joint Team City and SCDC | NO | Funded | < £10k | Completed | This is to reduce traffic and emissions and keeping levels below NAQO in future | Air Quality policies in Local Plan | IN use | Completed |
| 25 | Adopt / revise a Low Emissions Strategy | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2018 | 2024 | Environmental Health / Planning / Joint Team City and SCDC | Environmental Health / Planning / Joint Team City and SCDC | NO | Funded | < £10k | Planning | This is about keeping levels below NAQO | Completion of new LES | SCDC have a Low Emissions Strategy in place. Cambridge City Council could adopt similar LES or work with SCDC on joint guidance. | To be considered alongside Joint Local Plan discussions. |
| 26 | Supplementary Planning Documents | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2020 | 2028 | Environmental Health / Planning / Joint Team City and SCDC | Environmental Health / Planning / Joint Team City and SCDC | NO | Funded | < £10k | Completed | This is about keeping levels below NAQO | Completion of Sustainable Construction and Development SPD. | City and SCDC committees approved in 2020 | Update of the 2007 Sustainable Design and Construction SPD to provide guidance for policies contained in the Local Plan. More detail included than previously as SPD incorporates the Air Quality Guidance specific requirements. |
| 27 | Air Quality and Planning Guidance document | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2018 | 2019 | Environmental Health / Planning / Joint Team City and SCDC | Environmental Health / Planning / Joint Team City and SCDC | NO | Not Funded | < £10k | Aborted | n/a | Update of Air Quality in Cambridge: Developers Guide | Not yet started | Not taken forward. Detail included in SPD. See measure 26. |
| 28 | Develop guidance based on Defra cost-benefit approach to mitigation | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Environmental Health / Planning / Joint Team City and SCDC | Environmental Health / Planning / Joint Team City and SCDC | NO | Not Funded | < £10k | Implementation | This is about keeping levels below NAQO | Production of new guidance to support policy 36 | Included in SPD and used since adoption in 2020 | Useful for larger sites. |
| 29 | Sustainable Procurement Guidance | Policy Guidance and Development Control | Sustainable Procurement Guidance | 2021 | 2021 | Environmental Health - Cambridge City Council / SCDC | Environmental Health - Cambridge City Council / SCDC | NO | Not Funded | < £10k | Completed | n/a | n/a | Environmental factors are included in the Council's tender documents to ensure all procurements consider economical, social and environmental issues. | Completed |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | Develop policies to require Health Impact Assessments (HIA) at pre-application stage. | Policy Guidance and Development Control | Other policy | 2023 | 2028 | Environmental Health / Planning / Joint Team City and SCDC / CPCA - health team | Environmental Health / Planning / Joint Team City and SCDC / CPCA - health team | NO | Not Funded | < £10k | Planning | This is about reducing exposure | n/a | The requirement of HIA will be a new policy in the emerging Greater Cambridge local Plan. | To ensure Healthy communities are part of the design, and not an add on to a development. |
| 31 | Air Quality Joint Strategic Needs Assessment for Transport smf Built Environment | Policy Guidance and Development Control | Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality | 2023 | 2024 | Environmental Health / Planning / Joint Team City and SCDC / CPCA - health team | Environmental Health / Planning / Joint Team City and SCDC / CPCA - health team | NO | Not Funded | < £10k | Completed | This is about reducing exposure | To ensure that Healthy Community Strategies are embedded in JSNA | n/a | Complete |
| 32 | Public Health to be consulted on in preparation of SPDs | Policy Guidance and Development Control | Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality | 2023 | 2028 | Environmental Health / Planning / Joint Team City and SCDC / CPCA - health team | Environmental Health / Planning / Joint Team City and SCDC / CPCA - health team | NO | Not Funded | < £10k | Implementation | This is about reducing exposure | n/a | ongoing | Public Health Representative present at AQAP Steering Group Meetings and in discussions with officers about updates to AQ Policy. 2028 |
| 33a | Require a site wide EV charging strategy for all large-scale Major developments sites. | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | Planning requirement in AQAP V2 and included in Greater Cambridge Sustainable Design and Construction SPD. |
| 33b | Require a minimum of one slow EV charger for each dwelling with allocated parking | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | Planning requirement in AQAP V2 and included in SPD. |

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| | (100% coverage) | | | | | | | | | | | | | | |
| 34a | Require Minimum of one slow EV charge point for 2 dwellings with communal parking (50 coverage) | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | Planning requirement in AQAP V2 and included in SPD. |
| 34b | Require a minimum of one slow EV charger for every two parking spaces in non-residential developments (50% coverage) | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | Planning requirement in AQAP V2 and included in SPD. |
| 35a | Require one fast EV charging point for 1,000m2 non-residential floor space | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | Planning requirement in AQAP V2 and included in SPD. |
| 35b | Require one rapid EV charger for 1,000m2 non-residential floor space | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | Planning requirement in AQAP V2 and included in SPD. |
| 35c | Require at least one rapid charge point for large-scale major developments | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | N/a | In place | Planning requirement in AQAP V2 and included in SPD. |

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| 36a | Any new or replacement car park to have EV charge points | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | Planning requirement in AQAP V2 and included in SPD. |
| 36b | Require EV charge points to mitigate increase in trip generation where site use is intensified | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | Planning requirement in AQAP V2 and included in SPD. |
| 36c | Require Installation of passive charge points at all parking spaces without active charge points | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2019 | 2020 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | Planning requirement in AQAP V2 and included in SPD. |
| 37 | CHP Emission Standards | Promoting Low Emission Plant | Regulations for fuel quality for low emission fuels for stationary and mobile sources | 2014 | 2015 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | All gas CHP to meet low emissions standards, Spark ignition engine: less than 150 mgNOx/Nm3; Gas turbine: less than 50mgNOx/Nm3 |
| 38 | Low Nox Boilers | Promoting Low Emission Plant | Shift to installations using low emission fuels for stationary and mobile sources | 2014 | 2015 | Cambridge City Environmental Health / Planning | Cambridge City Environmental Health / Planning | NO | Not Funded | < £10k | Completed | Will reduce the impact of additional development | n/a | In place | All developments to have low Nox boilers, defined as boilers that meet a dry NOx emission rating of 40mg/kWh. |
| 42 | Extension of Smoke Control Areas | Promoting Low Emission Plant | Other Policy | 2022 | 2024 | Cambridge City Council Environmental Health | Defra AQG | YES | Not Funded | £50k - £100k | Planning | Reduce impact from particulates | n/a | Defar AQG funding won to undertake consultation into City wide SCA and monitoring to provide evidence base for consultation. Feasibility Study being conducted in 2024 to inform decision making process. | Environmental act 2021 in place and guidance for SCA's released in 2023. Monitoring expected to be complete in 2023. Consultation in 2023/24. |
| 43 | Restriction on fuel types used on dwellings moored on the river | Promoting Low Emission Plant | Other Policy | 2018 | 2022 | Cambridge City Council Environmental Health | Cambridge City Council Environmental Health | NO | Not Funded | < £10k | Implementation | Reduce impact from particulates | n/a | Regulations already in place to cover smoke nuisance. All licensees informed about new fuel buying regulations. | Boaters have limited heating options. Continue to liaise with boaters to look at alternatives. |
| 44 | Encourage use of zero-emission heating sources such as electric heating, ground source or air source heat pumps | Promoting Low Emission Plant | Shift to installations using low emission fuels for stationary and mobile sources | 2018 | 2025 | Cambridge City Council Environmental Health | Cambridge City Council Environmental Health | NO | Not Funded | < £10k | Completed | This is about keeping levels below NAQO / target levels | n/a | An alternative to low Nox boilers suggested in the Sustainable Design and Construction SPD | |

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| 46 | "Clean Air Zone" | Traffic Management | Road User Charging (RUC)/ Congestion charging | 2018 | 2030 | Cambridge City Council / Cambridgeshire County Council / Greater Cambridge Partnership / CPCA | GCP | NO | Not Funded | £1 million - £10 million | Planning | This is about keeping levels below NAQO / target levels | CAZ in place | GCP undertook feasibility study in 2019. Road user charging option taken forward for consultation in 2022 as a key demand management tool to reduce traffic levels and vehicular emissions. GCP decided not to take forward Road user charging option following consultation. | Significant vehicle emission reduction to be achieved through road user charging with exemptions for local buses and zero emission taxis |
| 47 | LEV discount as part of policy for residents parking permits | Promoting Low Emission Transport | Priority parking for LEV's | 2019 | 2019 | Cambridgeshire County Council | Cambridgeshire County Council | NO | Not Funded | < £10k | Completed | This measure is to support uptake of alternative fuels | Discount offered on residents parking permits for Low Emission Vehicles | Completed | A vehicle of emissions less than 75gkms CO2 will attract a 20% discount of the full cost of the permit. |
| 48 | Installation of rapid and fast EV charge points for taxis | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2018 | 2023 | Cambridge City Council / Cambridgeshire County Council / Greater Cambridge Partnership | Funding from OLEV, Greater Cambridge Partnership , Cambridge City Council | NO | Funded | £500k - £1 million | Implementation | 1.5 - 4.5 % reduction in Nox emissions | Installation of 18 Rapid and 3 fast EV charge points in Cambridge | 17 charge points installed by end of 2022. Remaining charge points Eddington and Great Eastern Street planned for installation in 20024. Delays due to contracts over land access. | Delays in 20/21 because of covid restricting works. Delay in 2022 due to site access issues. |
| 49a | Installation of EV charge points for residents - onstreet | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2022 | 2023 | Cambridge City Council / Cambridgeshire County Council / National Grid | OZEV / Cambridge City Council / Cambridgeshire County Council / National Grid | NO | Funded | £500k - £1 million | Completed | This measure is to support uptake of alternative fuels | Installation of 16 EVCP in residential areas with no off street parking | Charge points in place | Completed - This project has delivered 4 x 50kw rapids and 38 x 7kW sockets |
| 49b | Installation of EV charge points for residents - slot drains | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2020 | 2025 | Cambridge City Council / Cambridgeshire County Council | Cambridgeshire County Council | NO | Not Funded | £10k - 50k | Planning | This measure is to support uptake of alternative fuels | TBC | Discussion phase to find a suitable methodology | AQAP partners are looking at technical specifications for this with possibility of a pilot scheme in the future. |
| 49c | Installation of EV charge points for residential areas with communal car parks | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2020 | 2025 | Cambridge City Council Environmental Health and Housing | Cambridge City Council | NO | Not Funded | £10k - 50k | Planning | This measure is to support uptake of alternative fuels | TBC | Discussion phase to find a suitable methodology | Discussions with Parking to see if their contract for EV charging services can be used for this. |

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| 49d | Installation of EV charge points for residents - adjacent to taxi charge point bays | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2018 | 2023 | Cambridge City Council / Cambridgeshire County Council / Greater Cambridge Partnership | Funding from OLEV, Greater Cambridge Partnership , Cambridge City Council | NO | Funded | £500k - £1 million | Implementation | This measure is to support uptake of alternative fuels | Installation of 18 Rapid and 3 fast EV chargepoints in Cambridge | Where possible charge points have been installed for use by both taxis and residents with dedicated taxi bays alongside. | All charge points expected to be installed by end of 2023/24 financial year. |
| 49e | Installation of EV chargepoints in car parks for overnight charging for residents | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2020 | 2025 | Cambridge City Council | Cambridge City Council | NO | Not Funded | £50k - £100k | Implementation | This measure is to support uptake of alternative fuels | Installation of EVCP in car parks for overnight charging | Contract agreed with company to provide EV charge points in Cambridge City car parks | Needs to align with Parking EV Strategy |
| 49f | Installation of EV charge points on lamposts for residents and non-residents | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2018 | 2025 | Cambridge City Council / Cambridgeshire County Council | Cambridge City Council / Cambridgeshire County Council / Balfour Beatty | NO | Not Funded | £50k - £100k | Planning | This measure is to support uptake of alternative fuels | Installation of 6 EV CP on lampposts | Project on hold whilst Cambridgeshire County Council works with Lighting contractor | This project has not been progressed with alternative options now being investigated |
| 50 | Installation of EV charge points for non-residents in car parks | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2018 | 2025 | Cambridge City Council | Cambridge City Council | NO | Not Funded | £50k - £100k | Planning | This measure is to support uptake of alternative fuels | Installation of EVCP in car parks | Contract agreed with company to provide EV charge points in Cambridge City car parks | Needs to align with Parking EV Strategy |
| 51 | Installation of roadside EV charge points for residents and non-residents | Promoting Low Emission Transport | Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging | 2020 | 2023 | Cambridge City Council / Cambridgeshire County Council / National Grid | OZEV / Cambridge City Council / Cambridgeshire County Council / National Grid | NO | Funded | £500k - £1 million | Completed | This measure is to support uptake of alternative fuels | Installation of 16 EVCP in residential parking zones and pay and display parking areas. | Charge points in place | Complete |
| 53 | Procuring low emissions vehicles for own fleet where possible | Promoting Low Emission Transport | Public Vehicle Procurement -Prioritising uptake of low emission vehicles | 2019 | 2030 | Cambridge City Councils / Shared Services | Cambridge City Council / Shared Services | NO | Not Funded | £50k - £100k | Implementation | This is about keeping levels below NAQO / target levels | All fleet is low emission vehicle | Purchase of Shared waste service low emission vehicles. New depot for fleet designed to allow low emission vehicles through installation of charging infrastructure. | Decarbonising Cambridge City Council Vehicle Fleet - internal document |
| 54 | Fee reduction for low emission taxis | Promoting Low Emission Transport | Taxi emission incentives | 2018 | 2019 | Cambridge City Council | Cambridge City Council | NO | Funded | £10k - 50k | Completed | 1.5-4.5% reduction in NOx emissions | All taxis are low emission by 2028 | 45 taxis have zero emission exemption | Concerns amongst taxi drivers to source low emission vehicles. Agreed emission rate at 75gkm CO2 for taxis until 2025. Review policy in 2025. |

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| 55 | Licensing conditions to require low emission taxis | Promoting Low Emission Transport | Taxi Licensing conditions | 2018 | 2019 | Cambridge City Council | Cambridge City Council | NO | Funded | £10k - 50k | Completed | 1.5-4.5% reduction in NOx emissions | All taxis are low emission by 2029 | As of 2023 93 vehicles within the fleet either electric or ultra low emission out of a fleet of 452 | Concerns amongst taxi drivers to source low emission vehicles. Agreed emission rate at 75gkm CO2 for taxis until 2025. Review policy in 2025. |
| 56a | Lowering emissions from public service vehicles (buses and coaches) | Promoting Low Emission Transport | Public Vehicle Procurement -Prioritising uptake of low emission vehicles | 2012 | 2019 | Cambridge City Council / Cambridgeshire County Council . Greater Cambridge Partnership / CPCA | Operator | NO | Not Funded | < £10k | Planning | This is about keeping levels below NAQO / target levels | 100% buses Euro 6 or better. No increase in emissions from additional services | Target set by CPCA to have zero emission bus fleet by 2030. | 30 new zero emission buses on P&R routes and 2 city routes delivered in 2023. Charging Infrastructure complete. |
| 56b | Lowering emissions from public service vehicles (buses and coaches) - trial electric only fleet | Promoting Low Emission Transport | Public Vehicle Procurement -Prioritising uptake of low emission vehicles | 2012 | 2021 | Cambridge City Council / Cambridgeshire County Council . Greater Cambridge Partnership / CPCA | Operator | NO | Partially Funded | > £10 million | Completed | This is about keeping levels below NAQO / target levels | Trial complete | GCP co-funded with Stagecoach 2 electric buses which have operated on Citi 6 and P& R services since Feb 2020. | Trial has led to successful bid for ZEBRA money and 30 new electric buses in 2023. |
| 56c | Electric vehicle charging strategy | Policy Guidance and Development Control | Other policy | 2018 | 2020 | Cambridge City Council | Cambridge City Council | NO | Not Funded | < £10k | Completed | This measure is to support uptake of alternative fuels | Strategy complete | Strategy Complete in 2019, new strategy being incorporated into the CPCA Local Transport and Connectivity Plan | Position Statement to make aware relevant authorities and departments their role in EV charging infrastructure. |
| 56d | Electric vehicle charging strategy | Policy Guidance and Development Control | Other policy | 2022 | 2023 | CPCA | CPCA | NO | Not Funded | < £10k | Implementation | This measure is to support uptake of alternative fuels | Strategy complete | CPCA developing EV Strategy as part of the Local Transport and Connectivity Plan | Local Transport and Connectivity Plan approved at Committee. |
| 57a | Home Working policies | Promoting Travel Alternatives | Encourage / Facilitate home-working | 2016 | 2030 | Cambridge City Council | Cambridge City Council | NO | Not Funded | < £10k | Completed | This measure is to reduce the need to travel to work | n/a | Home working policies are in place | Home working policies have been revised to reflect hybrid working |
| 58a | Active Travel Infrastructure via GCP measures | Transport Planning and Infrastructure | Cycle network | 2016 | 2030 | Greater Cambridge Partnership | Greater Cambridge Partnership | NO | Not Funded | £10k - 50k | Planning | This measure is to support alternative forms of travel | Scheme completion | Funding allocated for further improvements to active travel networks. 1st 2 routes for works chosen in December 21 following consultation. | Integral part of other measures - new routes, junction upgrades, cycle parking, promotion of cycling and walking etc. |
| 58b | Active Travel Infrastructure via GCP measures and County Measures | Transport Planning and Infrastructure | Cycle network | 2020 | 2022 | Greater Cambridge Partnership / Cambridgeshire County Council / CPCA | DfT | NO | Partially Funded | £1 million - £10 million | Implementation | This measure is to support alternative forms of travel | Scheme completion | No specific measure is in place | Emergency Active Travel Infrastructure in place for Tranche 1 and Tranche 2. |
| 59 | Travel for Cambridgeshire | Public Information | Via other mechanisms | 2016 | 2030 | Cambridgeshire County Council | Cambridgeshire County Council | NO | Funded | < £10k | Implementation | This measure is to support alternative forms of travel | n/a | Not recorded | Can be required for major sites at point of residents moving in to ensure they are aware of all travel options. |
| 60 | Refresh Cambridge City Council Travel Plan | Promoting Travel Alternatives | Workplace Travel Planning | 2016 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to support alternative forms of travel | n/a | Adoption of refreshed Travel Plan each year | Ongoing routine. |
| 61 | Workplace Travel Plan | Promoting Travel Alternatives | Workplace Travel Planning | 2016 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to support | n/a | n/a | Ongoing routine, promotion of discounts available for TfC partners. |

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| | | | | | | | | | | | | alternative forms of travel | | | |
| 62 | Workplace Travel Plan | Promoting Travel Alternatives | Workplace Travel Planning | 2016 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to support alternative forms of travel | n/a | n/a | Ongoing routine |
| 63 | S106 agreements for cycling and walking infrastructure | Transport Planning and Infrastructure | Other | 2016 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Completed | This measure is to support alternative forms of travel | n/a | n/a | Part of development / planning contributions |
| 64 | Cycle Parking design guide | Policy Guidance and Development Control | Other policy | 2013 | 2015 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Completed | This measure is to support alternative forms of travel | n/a | In place | https://www.cambridge.gov.uk/media/6771/cycle-parking-guide-for-new-residential-developments.pdf |
| 65 | Schemes and Grants | Policy Guidance and Development Control | Other policy | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to support alternative forms of travel | n/a | In place | https://www.cambridge.gov.uk/cycling-and-walking-promotion-grants |
| 66 | Schemes and Grants | Policy Guidance and Development Control | Other policy | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to support alternative forms of travel | n/a | In place | https://www.cambridge.gov.uk/cycling-and-walking-promotion-grants |
| 67 | Travel for Cambridgeshire Travel Plan Services | Public Information | Other | 2013 | 2030 | Cambridgeshire County Council | Cambridgeshire County Council | NO | Funded | < £10k | Implementation | This measure is to support alternative forms of travel | n/a | In place | Travel Plan Services offer help with writing, developing, maintaining, and monitoring as well as support for Travel Plan implementation |
| 68 | Travel for Cambridgeshire Travel Plan Services | Public Information | Other | 2013 | 2030 | Cambridgeshire County Council | Cambridgeshire County Council | NO | Funded | < £10k | Implementation | This measure is to support alternative forms of travel | n/a | In place | Travel Plan Services offer help with writing, developing, maintaining, and monitoring as well as support for Travel Plan implementation |
| 69 | Travel for Cambridgeshire Travel Plan Services | Public Information | Other | 2013 | 2030 | Cambridgeshire County Council | Cambridgeshire County Council | NO | Funded | < £10k | Implementation | This measure is to support alternative forms of travel | n/a | TfC offers employers a range of tools, services and resources to support sustainable travel choices | The aim is to implement effective travel initiatives that promote cycling, walking, public transport and car sharing to work. |
| 70 | Cambridge Matters Magazine | Public Information | Via other mechanisms | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to promote air quality awareness | n/a | Air quality articles in most quarters | Delivered to every household in the district |
| 71 | Twitter and Facebook | Public Information | Via the Internet | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to promote air quality awareness | n/a | Ongoing | Ongoing routine |
| 72 | Provide Information on request | Public Information | Via other mechanisms | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to promote air quality awareness | n/a | Ongoing | Ongoing routine |
| 73 | Provide Information on request | Public Information | Via other mechanisms | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to promote | n/a | Ongoing | Ongoing routine |

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| | | | | | | | | | | | | air quality awareness | | | |
| 74 | Provide Information on request via website | Public Information | Via the Internet | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to promote air quality awareness | n/a | Ongoing | Ongoing routine |
| 75 | Clean Air Day | Public Information | Other | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to promote air quality awareness | n/a | Ongoing | Annual national campaign to provide information about air quality and raise awareness. |
| 76 | Campaigns to provide information about the impacts of air pollution on health | Public Information | Other | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to promote air quality awareness | n/a | As required | Prepare and disseminate information about health impacts |
| 78 | Campaign to provide information about the impacts of wood burning, what type of wood to burn and how to burn it efficiently. | Public Information | Other | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to promote air quality awareness | n/a | Campaign in Winter 2023/24. | Prepare and disseminate information about health impacts |
| 79 | Publicity Campaign | Public Information | Other | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Implementation | This measure is to promote air quality awareness | n/a | As required | Anti-idling information in Cambridge Matters |
| 80 | Penalty notices for non-compliance | Other | Other | 2013 | 2030 | Cambridge City Council | Cambridge City Council | NO | Not Funded | < £10k | Planning | This is about keeping levels below NAQO / target levels | n/a | On hold | Not currently a priority to seek anti-idling powers |
| 81 | Expansion of residents parking schemes | Traffic Management | Emission based parking or permit charges | 2013 | 2030 | Cambridgeshire County Council | Cambridgeshire County Council | NO | Funded | < £10k | Implementation | This measure is to support alternative forms of travel | Number of spaces in car parking schemes | Ongoing annual programme of schemes resumed in 2022. 4 further schemes being developed/delivered in 2023 | Parking schemes to prioritise residents parking, prevent commuter parking and provide additional om-street cycle parking |
| 83 | Congestion charging or road user charging | Traffic Management | Road User Charging (RUC)/ Congestion charging | 2018 | 2030 | Cambridgeshire County Council / Cambridge City Council . Greater Cambridge Partnership | Cambridgeshire County Council | NO | Not Funded | £500k - £1 million | Aborted | This is about keeping levels below NAQO / target levels | Charging scheme in place | GCP Decision in 2023 following public consultation not to proceed with road charging at this time. | |

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| 84 | Road space re-configuration in Cambridge | Traffic Management | Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane | 2018 | 2030 | Cambridgeshire County Council / Cambridge City Council . Greater Cambridge Partnership | Cambridgeshire County Council | NO | Not Funded | £500k - £1 million | Planning | This is about keeping levels below NAQO / target levels | Agreement and implementation of schemes | GCP consulted on road hierarchy scheme in Summer 2022. | Cambridge City Council consulted on the vision, aims, objectives and strategies for a Space and Movement SPD in 2019. County to look further at road hierarchy alongside development of Greater Cambridge Transport Strategy. |
| 85 | Creation of better cycling and walking infrastructure on key routes | Transport Planning and Infrastructure | Cycle network | 2018 | 2030 | Cambridgeshire County Council / Cambridge City Council . Greater Cambridge Partnership | Cambridgeshire County Council | NO | Not Funded | £500k - £1 million | Planning | This measure is to support alternative forms of travel | Agreement and implementation of schemes | See below for specific schemes | https://www.sustrans.org.uk/bike-life/bike-life-greater-cambridge |
| 86 | Extension of Core Area schemes - limiting access to City Centre | Traffic Management | Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane | 2018 | 2030 | Cambridgeshire County Council / Cambridge City Council . Greater Cambridge Partnership | Cambridgeshire County Council | NO | Not Funded | £500k - £1 million | Planning | This measure is to support alternative forms of travel | TBC | Vehicular access restrictions expected to apply to a wider area of the city centre as proposed in the ongoing review of the road network user hierarchy in the city | Consultation on road hierarchy proposals took place in Summer 2022. |
| 88 | Review of traffic signals in Cambridge | Traffic Management | UTC, Congestion management, traffic reduction | 2018 | 2030 | Cambridgeshire County Council / Cambridge City Council . Greater Cambridge Partnership | Cambridgeshire County Council | NO | Funded | £500k - £1 million | Implementation | This is about keeping levels below NAQO / target levels | TBC | GCP and Cambridgeshire County Council are currently piloting smart signals technology at selected junctions in the south of the city. Assessment report expected in early 2024. | GCP study to review existing infrastructure and consider future technology which may improve traffic flow and reduce idling and could include greater priority for walking, cycling and public transport. |
| 89 | Workplace Parking Levy for employers with more than 300 employees in an area to be specified | Traffic Management | Workplace Parking Levy, Parking Enforcement on highway | 2018 | 2030 | Cambridgeshire County Council / Cambridge City Council . Greater Cambridge Partnership | Cambridgeshire County Council | NO | Not Funded | £500k - £1 million | Aborted | This is about keeping levels below NAQO / target levels | TBC | n/a | Workplace Parking Levey was not an option taken forward by GCP committee in 2022 |
| 91a | CAM, Cambridge Area Metro | Transport Planning and Infrastructure | Public transport improvements-interchanges | 2018 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater | Cambridgeshire County Council | NO | Not Funded | > £10 million | Aborted | This measure is to accommodate long term travel | Completion of Project | n/a | Learning and Expertise from the CAM work to date will inform a developing transition plan, and that this will come back to the CPCA Board. |

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| | | | stations and services | | | Cambridge Partnership / CPCA | | | | | | demand and reduce congestion in Cambridge | | | |
| 91b | Whittlesford Railway Station Travel Hub - bus, cycling, walking improvement and station upgrade | Transport Planning and Infrastructure | Public transport improvements- interchanges stations and services | 2016 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Partially Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of Project | Draft Delivery Plan being developed through further stakeholder engagement | https://www.greatercambridge.org.uk/transport/transport-projects/rural-travel-hubs/whittlesford-transport-master-planning-exercise |
| 91c | New on road bus routes for Cambourne to Cambridge Corridor | Transport Planning and Infrastructure | Bus route improvements | 2016 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Partially Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of Project | Off road bus route agreed | TWOA application to be submitted in 2024. |
| 91d | Cambridge South East Transport Project | Transport Planning and Infrastructure | Bus route improvements | 2016 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of Project | Currently preparing TWAO with submission in 2024 and Public Inquiry to take place after. Early delivery of improvements to Francis Crick Avenue 2025. | www.greatercambridge.org.uk/transport/transport-projects/cambridgesoutheast |
| 91e | Cambourne to Cambridge corridor offroad busway | Transport Planning and Infrastructure | Bus route improvements | 2016 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of Project | TWAO application to be submitted in 2024 | www.greatercambridge.org.uk/transport/transport-projects/cambourne-to-cambridge |
| 91f | Improvements to bus routes - Histon Road | Transport Planning and Infrastructure | Bus route improvements | 2016 | 2021 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Completed | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of Project | Completed September 2021 | www.greatercambridge.org.uk/transport/transport-projects/histon-road |
| 91g | Improvements to bus routes - Milton Road | Transport Planning and Infrastructure | Bus route improvements | 2016 | 2024 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Implementation | This measure is to accommodate long term travel demand and reduce congestion | Completion of Project | Works began in 2022, completion expected in 2024. | www.greatercambridge.org.uk/transport/transport-projects/milton-road |

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| | | | | | | | | | | | | in Cambridge | | | |
| 91h | Improvements to bus routes - City Access | Transport Planning and Infrastructure | Bus route improvements | 2016 | 2024 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Partially Funded | > £10 million | Aborted | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of Project | GCP Decision in 2023 following public consultation not to proceed with road charging at this time. | https://www.greatercambridge.org.uk/city-access |
| 91i | Cambridge Eastern Access | Transport Planning and Infrastructure | Bus route improvements | 2022 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of Project | Approval of Strategic Business Case in Dec 21. Proceeding with works for short term gains (cycling improvements, P&R relocation), Longer term improvements (Upgrade to Newmarket to Cambridge train line) | https://greatercambridge.org.uk/public-transport-schemes/cambridge-eastern-access |
| 91j | Waterbeach to Cambridge | Transport Planning and Infrastructure | Bus route improvements | 2022 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of Project | Consultation on preferred route in 2022. EIA consultation 2024. | https://greatercambridge.org.uk/public-transport-schemes/waterbeach-to-cambridge |
| 92a | New cycling routes - Chisholm Trail | Transport Planning and Infrastructure | Cycle network | 2019 | 2025 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Implementation | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Opening | Phase 1 complete. | https://greatercambridge.org.uk/transport/transport-projects/chisholm-trail |
| 92b | Cambridge South East cycle route | Transport Planning and Infrastructure | Cycle network | 2019 | 2025 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Opening | TWOA application to be submitted in 2024.Early delivery of improvements to Francis Crick Avenue 2025 | https://greatercambridge.org.uk/transport/transport-projects/cambridgesoutheast |
| 92c | Cambourne to Cambridge cycle route | Transport Planning and Infrastructure | Cycle network | 2019 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion | Opening | TWAO application to be submitted in 2024 | https://greatercambridge.org.uk/transport/transport-projects/cambourne-to-cambridge |

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| | | | | | | | | | | | | in Cambridge | | | |
| 92d | Improved cycle routes - Histon Road | Transport Planning and Infrastructure | Cycle network | 2020 | 2021 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Completed | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Completed September 2021 | https://greatercambridge.org.uk/transport/transport-projects/histon-road |
| 92e | Improved cycle routes - Milton Road | Transport Planning and Infrastructure | Cycle network | 2022 | 2023 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Implementation | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Works began in 2022, completion expected in 2024. | https://greatercambridge.org.uk/transport/transport-projects/milton-road |
| 92g | New and/or improved cycle routes - Rural Travel Hubs | Transport Planning and Infrastructure | Cycle network | 2020 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Project not taken forward following consultation feedback | |
| 92h | Improved cycle routes - Cross City Cycling | Transport Planning and Infrastructure | Cycle network | 2020 | 2020 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Completed | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of 5 schemes | Completed | Cross City Cycling https://www.greatercambridge.org.uk/transport/transport-projects/cross-city-cycling/ |
| 92i | New Cycle Routes - Greenways | Transport Planning and Infrastructure | Cycle network | 2019 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of 12 routes | Routes prioritised for implementation. Construction on Linton Greenway began in 2023 and further sites planned for 2024 | Cross City Cycling https://www.greatercambridge.org.uk/transport/transport-projects/greenways/ |
| 92j | New and/or improved cycle routes - Madingley Road | Transport Planning and Infrastructure | Cycle network | 2019 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion | Completion | Detailed Designs being worked on | Madingley Road https://www.greatercambridge.org.uk/transport/transport-projects/madingley-road/ |

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| | | | | | | | | | | | | in Cambridge | | | |
| 92k | New Cycling Routes -A10 Royston to Cambridge | Transport Planning and Infrastructure | Cycle network | 2015 | 2019 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £500k - £1 million | Completed | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Cycle Link between Melbourn and Shepreth | Further link is the Melbourn Greenway Project |
| 92l | Cambridge Eastern Access | Transport Planning and Infrastructure | Cycle network | 2016 | 2026 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Approval of Strategic Business Case in Dec 21. Proceeding with works for short term gains (cycling improvements, P&R relocation), Longer term improvements (Upgrade to Newmarket to Cambridge train line) | https://www.greatercambridge.org.uk/public-transport-schemes/cambridge-eastern-access |
| 92m | Waterbeach to Cambridge | Transport Planning and Infrastructure | Cycle network | 2016 | 2026 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | > £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Consultation on options held in early 2023. Decision on preferred option late 2023. | https://www.greatercambridge.org.uk/public-transport-schemes/waterbeach-cambridge |
| 93a | New Walking Routes - Chisholm Trail | Transport Planning and Infrastructure | Other | 2019 | 2025 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £500k - £1 million | Implementation | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Opening | Phase 1 complete. | https://www.greatercambridge.org.uk/transport/transport-projects/chisholm-trail |
| 93b | Cambridge South East | Transport Planning and Infrastructure | Other | 2019 | 2025 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | TWAO application to be submitted in 2024 | https://www.greatercambridge.org.uk/transport/transport-projects/cambridge-south-east |
| 93c | Cambourne to Cambridge | Transport Planning and Infrastructure | Other | 2019 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Planning | This measure is to accommodate long term travel demand and reduce congestion | Completion | TWAO application to be submitted in 2024 | https://www.greatercambridge.org.uk/transport/transport-projects/cambourne-to-cambridge |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | in Cambridge | | | |
| 93d | Improved Walking Routes - Histon Road | Transport Planning and Infrastructure | Other | 2019 | 2021 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Completed | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Completed September 2021 | https://www.greatercambridge.org.uk/transport/transport-projects/histon-road |
| 93e | New and/or improved Walking Routes - Milton Road | Transport Planning and Infrastructure | Other | 2022 | 2024 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £1 million - £10 million | Implementation | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Initial works began in Spring 2022. Completion by 2024 | https://www.greatercambridge.org.uk/transport/transport-projects/milton-road |
| 93g | New and/or improved walking routes - Rural Hubs | Transport Planning and Infrastructure | Other | 2017 | 2019 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Not Funded | < £10k | Aborted | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Project not taken forward following consultation feedback | |
| 93i | New Walking Routes - Greenways | Transport Planning and Infrastructure | Other | 2017 | 2024 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Partially Funded | £50k - £100k | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion of 12 routes | Routes prioritised for implementation. Construction on Linton Greenway began in 2023 and further sites planned for 2024 | https://greatercambridge.org.uk/transport/transport-projects/greenways |
| 93j | New and/or improved walking routes - Madingley Road | Transport Planning and Infrastructure | Other | 2017 | 2024 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Partially Funded | £50k - £100k | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Detailed Designs being worked on | Madingley Road https://www.greatercambridge.org.uk/transport/transport-projects/madingley-road/ |
| 93k | New and/or improved Walking Routes - A10 Royston to Cambridge | Transport Planning and Infrastructure | Other | 2017 | 2019 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £50k - £100k | Completed | This measure is to accommodate long term travel demand and reduce congestion | Completion | Cycle Link between Melbourn and Shepreth | Further link is the Melbourn Greenway Project |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | in Cambridge | | | |
| 93l | Cambridge Eastern Access | Transport Planning and Infrastructure | Other | 2017 | 2026 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £50k - £100k | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | December 2021 approval of Business Case. Improvements to walking network on Newmarket Road planned for completion in 2025. | https://www.greatercambridge.org.uk/public-transport-schemes/cambridge-eastern-access |
| 93m | Waterbeach to Cambridge | Transport Planning and Infrastructure | Other | 2017 | 2030 | Cambridgeshire County Council / Cambridge City Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Funded | £50k - £100k | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Consultation on preferred route in 2022. EIA consultation 2024 | https://www.greatercambridge.org.uk/public-transport-schemes/waterbeach-to-cambridge |
| 94a | Bike Hire Schemes | Transport Planning and Infrastructure | Public cycle hire scheme | 2018 | 2030 | Cambridge City Council, hire operators | Operators | NO | Not Funded | < £10k | Implementation | A measure to reduce congestion and facilitate modal shift | Schemes in Operation | n/a | Mobike are trialling bike hire schemes in Cambridge replacing Ofo |
| 94b | E-Scooter Hire | Transport Planning and Infrastructure | Other | 2020 | 2023 | COCA | VOI/DfT | NO | Funded | < £10k | Implementation | A measure to reduce congestion and facilitate modal shift | Continuation of Scheme | Trial ongoing and includes areas outside Cambridge. | Voi/DfT 1 year trial with 400 e-scooters and 100 e-bikes for hire in Cambridge. 80% users between 18 and 32. No cost to the Authority. |
| 95 | Improvements to P&R sites | Transport Planning and Infrastructure | Public transport improvements- interchanges stations and services | 2020 | 2023 | Cambridgeshire County Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Partially Funded | < £10k | Planning | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | | |
| 96 | Piloting Rural Hubs | Transport Planning and Infrastructure | Public transport improvements- interchanges stations and services | 2016 | 2027 | Cambridgeshire County Council / Greater Cambridge Partnership / CPCA | Cambridgeshire County Council | NO | Not Funded | < £10k | Aborted | This measure is to accommodate long term travel demand and reduce congestion in Cambridge | Completion | Project Cancelled following consultations | |
| 97 | New Station (Cambridge South) to serve the Hospital; (Addenbrookes and Papworth) and the Cambridge | Transport Planning and Infrastructure | Public transport improvements- interchanges stations and services | 2016 | 2025 | Network Rail / Cambridge City Council / Cambridgeshire County Council / Greater Cambridge Partnership / | tbc | NO | Not Funded | < £10k | Implementation | This measure is to accommodate long term travel demand and reduce congestion | Station fully operational | Planning and consultation approved. Construction begun, expected completion 2024/25. | |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | biomedical campus | | | | | CPCA / CBC 2020 Campus | | | | | | in Cambridge | | | |
| 103 | Improve air quality by increasing tree cover | Other | Other | 2020 | 2030 | Cambridge City Council | Cambridge City Council | NO | Funded | £500k - £1 million | Implementation | A measure to improve air quality | | Launched the neighbourhood Canopy Campaign in 2020 to encourage those areas of Cambridge with fewer trees to plant more in their neighbourhood. Now on its third area of Cambridge. Around 17 tonnes of nitrogen dioxide and 3 tonnes of PM2.5 removed by trees in Cambridge baseline. | Jointly funded by EDRF and Cambridge City Council. Https://www.cambridge,gov.uk/cambridge-canopy-project |
| 104 | No car zones trial | Traffic Management | Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane | 2021 | 2022 | Cambridgeshire County Council / Medical Research Council / Cambridge City Council | Cambridgeshire County Council / MRC | NO | Funded | £10k - 50k | Completed | A measure to improve air quality and encourage modal shift | Report on findings | Trial concluded in 2021. Findings found safety improvement outside schools during the trial. Cambridgeshire County Council would consider running further schemes if funding were available | Trial of no car zones around 2 schools at peak hours concluded in 2021. Found that there were safety improvements as a result of the schemes but little change in pupils using active travel modes to access school. Recommend wider shift in travel across the City is required to make changes to mode. No discernible improvement in air quality during the trial. |
| 105 | School Streets | Traffic Management | Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane | 2021 | 2022 | Cambridgeshire County Council / Medical Research Council / Cambridge City Council | Cambridgeshire County Council | NO | Funded | £10k - 50k | Completed | A measure to improve air quality and encourage modal shift | Report on findings | As part of the Experimental Traffic Orders brought in during the pandemic several schools became school streets and erected barriers to prevent traffic outside their school during peak times. Findings found that schools felt the entry and exit to school was safer and less idling vehicles. | Schemes run by the schools themselves with support from road safety team at Cambridgeshire County Council. Data collected by MRC on effectiveness of Scheme. |
| 106 | Smogmobile | Promoting Travel Alternatives | Other | 2023 | 2025 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Planning | A measure to encourage modal shift | data on air quality on certain routes - mapping to show least exposed routes | Secured funding and planning project. | Date for visit of Smogmobile to be agreed. |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 107 | School Poster Competition | Public Information | Via other mechanisms | 2023 | 2025 | Cambridge City Council | Cambridge City Council | NO | Funded | < £10k | Planning | A measure to encourage modal shift | Competition for local school children to design artwork to promote air quality improvements to be placed on our automatic monitoring sites. | Secured funding and planning project | |

## 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[9], 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.

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

*$PM_{2.5}$ Monitoring In Cambridge*

Cambridge City Council has monitored $PM_{2.5}$ in its district since 2008 however, changes to the monitoring network in the past couple of years has led to loss of historical trend data and there have been recent issues with data capture leading to some uncertainty on the accuracy of the measured levels. During 2023 $PM_{2.5}$ was measured at two locations Cambridge; Montague Road (since March 2023) and Newmarket Road (since 2008), both are roadside locations. As part of our monitor replacement project (which we hope will be completed in 2024), all of our sites will measure both $PM_{10}$ and $PM_{2.5}$. In addition to this we have been supporting the Environment Agency in securing a site on City Council land for the installation of an urban background $PM_{2.5}$ monitor which will form part of the AURN expanded network.

*$PM_{2.5}$ Levels in Cambridge*

Source apportionment using the DEFRA Background maps shows that most background $PM_{2.5}$ in Cambridge has a regional component (around 75%). The background estimates in Cambridge are around 10 micrograms per cubic metre (2019).

The measured annual average for both sites in 2023 was 7µg/m$^3$; however as with 2022 the data should be used with caution. There are questions around the accuracy of both sites during 2023. The Montague Road site was installed in March 2023 and we have had ongoing issues with the operations of the site leading to lower data capture than anticipated for this year. The data has therefore been annualised.

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

We are in the process of relocating the Newmarket Road monitor onto the public highway as the hedge and trees between the road and the existing monitor has now grown so much in height that it is felt to be impacting on the results obtained from this monitoring site.

Notwithstanding the above, any reduction in $PM_{2.5}$ in 2023 is unexpected given the roadside location of both sites and the sustained levels of vehicle movements within Cambridge during 2023.

The Public Health Outcomes Framework measurement D01 Fraction of Mortality attributable to Particulate Air Pollution data shows that shows that 57 deaths in Cambridge could be attributed to air pollution in 2022 (latest data available).

*Great Cambridge Air Quality Strategy (2024)*

It was agreed unanimously at the Environment & Community Scrutiny Committee in October 2023 to pursue a joint Air Quality Strategy with South Cambridgeshire District Council and work towards WHO Air Quality Guidelines. The strategy, which was formally adopted in March 2024, has interim targets which we hope to achieve within the lifetime of the strategy (2024-2029).

*Measures in place specific to reducing particulate matter levels.*

- Demolition and construction dust is controlled by planning conditions requiring demolition and construction management plans.
- The existing Smoke Control Area (SCA) policy was updated in 2023 to reflect the change in legislation relating to the governance of smoke control areas.
- Smoke Control Areas cover the central part of Cambridge. We have recently employed a consultant to undertake a review of the boundaries of the smoke control areas, which will consider the effect of solid fuel burning on health and air quality (including $PM_{2.5}$ emissions) should the boundaries be altered. The review will also consider the effect of including moored vessels within the smoke control areas. The review should be complete in Summer 2024 and presented at Committee in Autumn 2024. The Committee will then decide what action should be undertaken with regards to the smoke control areas in Cambridge.
- An awareness raising campaign was undertaken in Autumn 2023 to highlight to the public the importance of burning solid fuel correctly. Posters were placed across the city and within the 'Cambridge Matters' magazine that is delivered to every household in Cambridge.

- New regulations limiting the sale of house coal and wet wood should have a small impact on localised particulate matter levels. These continue to be publicised on our website.
- The report outlining the results of the monitoring of relative levels of particulates at a range of Cambridge non-roadside locations to understand the local variations in particulate levels at different times of the day and year using funding awarded in 2021 through the Air Quality Grant fund, has been published on the Cambridge City Council website. The results will inform any projects brought forward in response to the changes in the Environment Act, and feed into the decision-making process of whether to consult on expanding the SCA to include the whole city including moored vessels.

*Nitrogen dioxide measures in place that benefit particulate matter levels*

There are measures in the AQAP, which have been integrated into the recently adopted Greater Cambridge Air Quality Strategy (2024) and in place through the Development Control process that address the sources of nitrogen dioxide (for which we have a designated AQMA) that will also help to reduce particulate matter ($PM_{10}$ and $PM_{2.5}$); these include:

- Ensuring that any increase in public transport provision is offset, at least, by improvements in tail-pipe emissions.
- Ensuring that the Public Health perspective is integrated into all transport/traffic policies and GCP plans and investment decisions.
- Ensuring that the Public Health perspective is integrated into planning policies; for example, by developing planning policies in the next iteration of the Local Plan that require a Health Impact Assessment for proposed developments over a certain size. This will ensure that new developments have health considerations at the heart of the scheme and lead to healthier communities.
- Given the scale of predicted population increase in and around the city and subsequent development coming forward in the next 10 years the challenge faced by Cambridge City Council is to ensure that we do not begin to see a ‘creep’ in pollutant levels. This can be achieved through development management, working with the planning service to deliver air quality ‘neutral’ developments and minimising impact on air quality during the construction phase.

- Where appropriate, the use of planning conditions to control non-road mobile machinery emissions. This is something we are giving more consideration to and has been integrated as an action into the Air Quality Strategy given the continuing high levels of development across the city.
- Publicity campaigns about the adverse impact of traffic idling / idling engines.

There are concerns by both Cambridge City Council OIfficers and Members that the loss off the AQMA despite the adoption of a strategy will stall progress made to date and make it harder to achieve continued improvements to air quality.

*Measure specific to reducing particulate matter levels - under consideration*

- Consideration of extension of the Smoke Control Area to cover the whole district.

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

This section sets out the monitoring undertaken within 2023 by Cambridge 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

Cambridge City Council undertook automatic (continuous) monitoring at 4 sites during 2023. Table A.1 in Appendix A shows the details of the automatic monitoring sites. The Air pollution measurements - Cambridge City Council page presents automatic monitoring results for Cambridge City Council, with automatic monitoring results also publicly available through the UK-Air website .

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

### 3.1.2 Non-Automatic Monitoring Sites

Cambridge City Council undertook non- automatic (i.e. passive) monitoring of $NO_2$ at 70 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 and on the 'Air Quality Monitoring Stations' map located at Air pollution measurements - Cambridge City Council.

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.

Cambridge City Council monitors levels of benzene for the non-automatic monitoring network at the AURN site in Regent Street. National monitoring results are available at

https://uk-air.defra.gov.uk/data. The annual average level of benzene measured in Cambridge was 0.54 micrograms per cubic metre in 2023.

## 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).

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.

Table A.5 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.

The general trend of measured levels of nitrogen dioxide across both the automatic and diffusion tube monitoring network remained fairly stable or saw a small decrease in 2023 following the signifcant drop in 2020 due to the COVID pandemic, impact of lockdown and continuing COVID restrictions.

There are no exceedences of the $NO_2$ air quality objectives for either the annual mean objective of 40 µg/$m^3$ or $NO_2$ hourly mean concentrations of 200µg/m3 in 2023.

All trend graphs show monitored levels against the National Air Quality Objectives and demonstrates that levels at all monitoring locations have remained below this level for five consecutive years. In addtion the trend graphs show how we are performing against the target Interim and WHO air quality guidelines adopted in the Greater Cambridge Air Quality Strategy. Whilst these are not statutory it is useful to see how we are performing against these.

Given that we have an extensive network of diffusion tubes across the city we have split the results into groups based on the type of location or specific area of interest (typically in response to areas of major development). It is not practical to provide trend data for each of the individual tubes.

**Figure A.1 – Trends in Annual Mean $NO_2$ Concentrations between 2019 and 2023 for continuous Automatic Monitors**

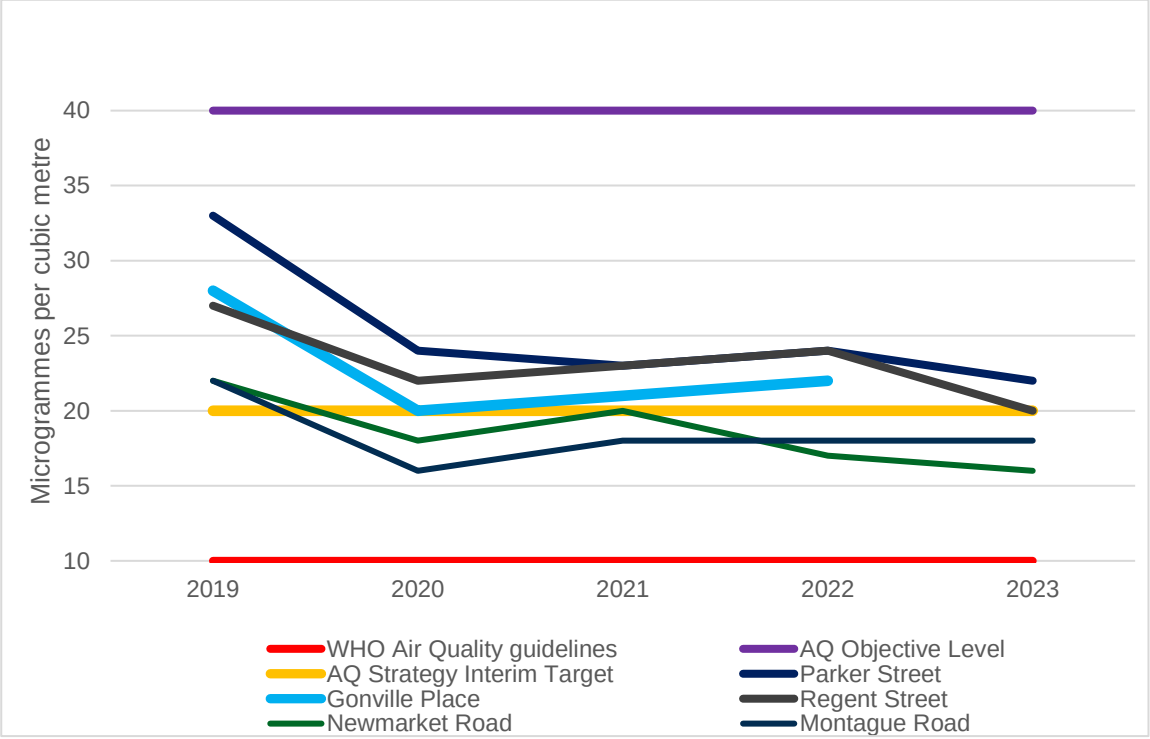



Figure A.1 presents $NO_2$ annual mean concentrations for the continous monitoring sites between 2019 and 2023. All monitoring sites have remained the same or seen a reduction with Montague Road remaining the same for a third consecutive year.

Cycle and bus lane improvements are still ongoing on Milton Road with the disruption continuing to signifcantly reduce the number of vehicles entering the city via Elizabeth Way Bridge (adjacent to the Montague Road air quality monitor). The work is predicted to end in mid-2024. On completion, we will be able to see how traffic levels change on the roads around Milton Road and gauge how this may impact on local air quality in the locality.

The air quality montioring stations at Parker Street and Regent Street measured decreases in $NO_2$ during 2023, this trend is supported by the wider diffusion tube monitoring network on the inner city streets and around the bus station which also all showed decreases.

Although vehicle movements were slightly down in December 2023 when compared with December 2022, as with 2022 the concentrations of $NO_2$ measured at the Newmarket Road monitoring station are unexpected as levels are far lower than those measured by diffusion tubes along the same road and for which tubes 7 and 61 are in close proximity. There therefore continues to be uncertainty about the reliability of the monitoring equipment due to age (although it has been both serviced and audited) and the suitability of the location due to the height and density of adjacent hedgerow and trees between the road and monitor. We are hoping this monitor will be relocated onto the public highway during 2024

**Figure A.2 – Trends in Annual Mean $NO_2$ concentrations between 2019 and 2023 for Suburban and Urban Background sites**

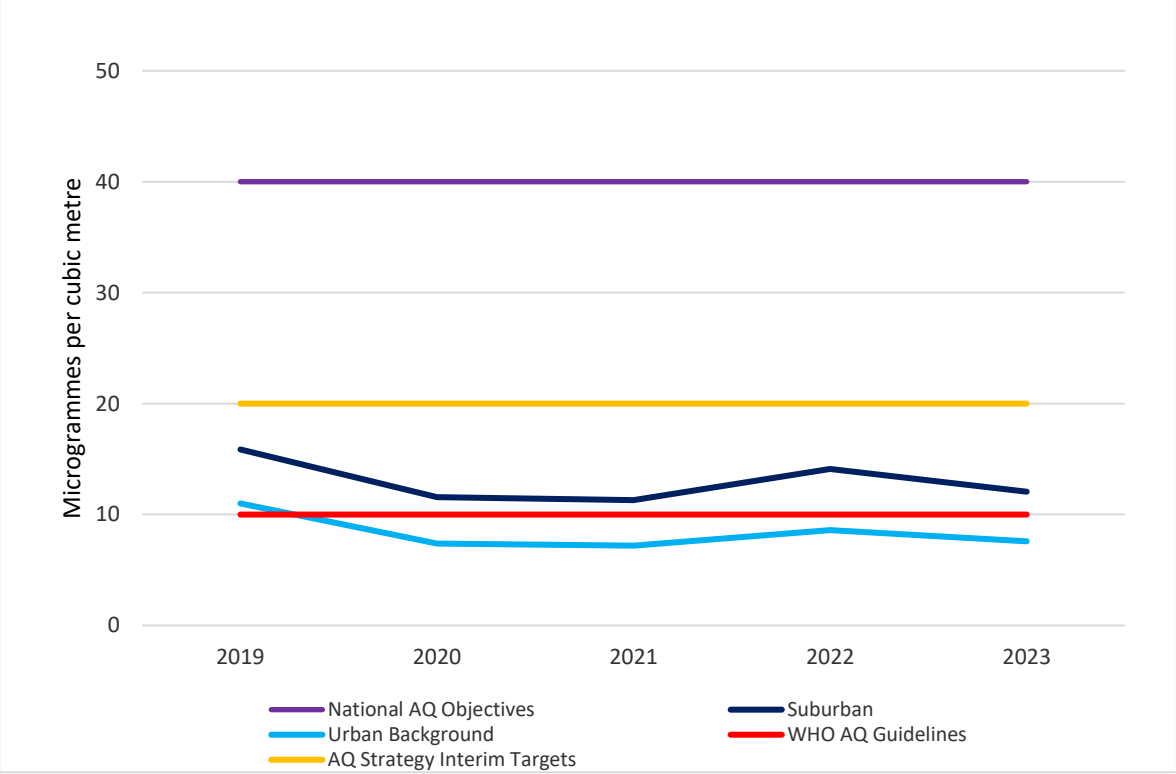



Figure A2 presents the trends in NO2 annual averages for Suburban and Urban Background sites between 2019 and 2023. All sites show a small decrease when compared with 2022.

**Figure A.3 – Trends in Annual Mean $NO_2$ concentrations between 2019 and 2023 for Radial Roads, Inner Ring Roads and Inner City Streets**

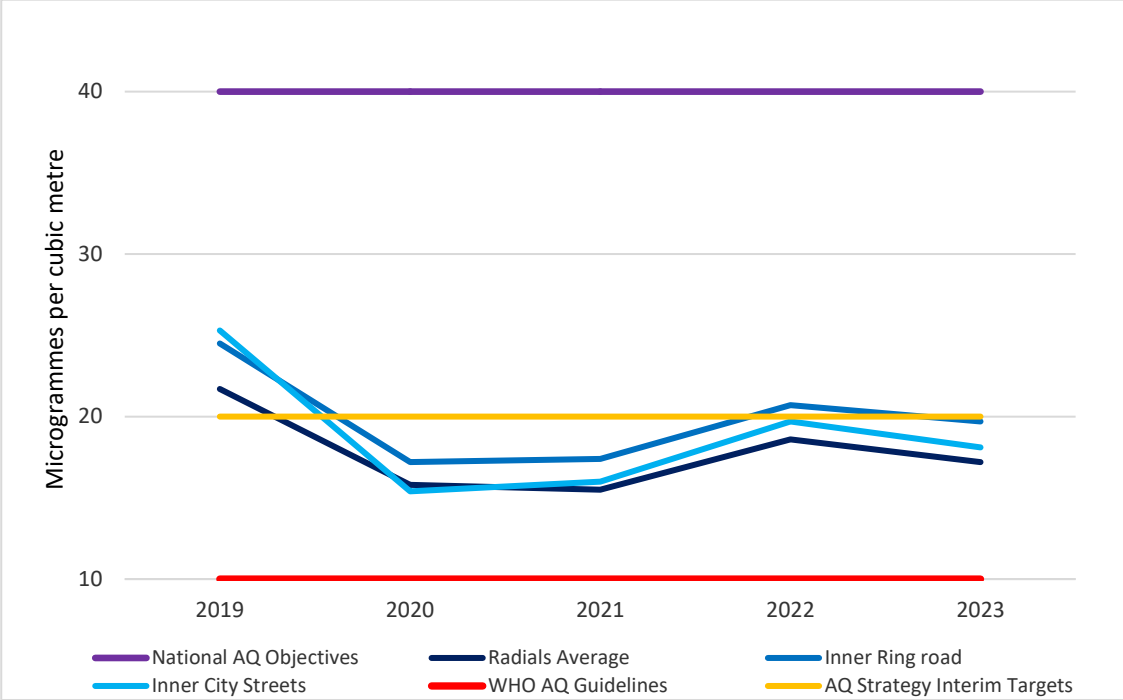



Figure A3 presents the trends in $NO_2$ averages for the roads classified as Radials, Inner Ring and Inner City Streets. There is a downward trend in concentrations across these groupings (with some exceptions).

All radial roads saw a small reduction in concentrations when compared with 2022, following a marked increase across all the radials in 2022 when compared with 2021.Those with a more marked decrease such as Milton Road (Tube 8) can be accounted for by the continued improvement works on Milton Road which have led to vehicles avoiding this part of Cambridge.

Whilst there is an overall decrease in the inner ring roads this is not as marked with some tubes showing increases in concentrations, specifically at Northampton Street (Tube 4), Chesterton Road (Tube 38) & Lensfield Road (Tube 43).

There is a marked decrease in concentrations across the inner city street which aligns with the decreases seen at the Parker St and Regent Street automatic monitors. The inner city streets typically have larger numbers of buses travelling along them, the introdcution of the electric buses in 2023 is likely to have contributed to this marked reduction, with past evidence undertaken showing that buses were a major contributor to the nitrogen dioxide levels within the city centre.

There is a single exception to this trend at Pembroke Street (Tube 18) which is the access route for Cambridges main city centre MSCP, Grand Arcade. The cccupation of Cambridge city council car parks, whilst still well below pre-COVID levels was up in 2023 when compared with 2022 and it is worth noting that the Grand Arcade is the most popular of the council owned MSCP's

**Figure A.4 - Trends in Annual Mean Concentrations between 2019 – 2023 for the roads around Drummer Street Bus Station**

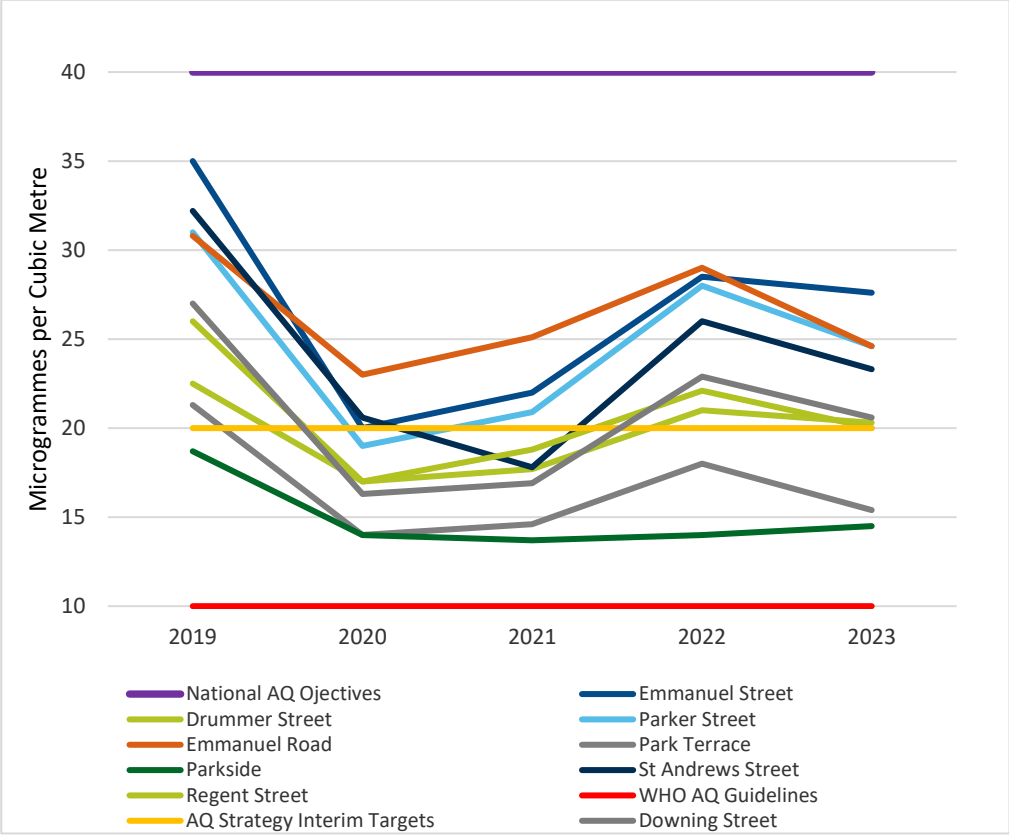



Figure A4 presents the trends in $NO_2$ annual averages for the roads around Drummer Street Bus Station. There is an large downward trend for all the roads with the exception of Parkside (Tube 46). As with the inner city streets this is likely to be attributable to the large number of electric buses which came on line in 2023.

Parkside is where national long distance coaches drop off and pick up and was the only tube to remain level last year when all others saw an increase. It is understood (but not verified) that the number of coaches dropping off and picking up increased in 2023 when compared with 2022.

While bus passenger figures still remain below pre-COVID, figures were up in 2023 when compared with 2022 with Park and Ride figures now above pre-COVID figures.

**Figure A.5 – Trends in Annual Mean NO2 Concentrations between 2019 – 2023 for the roads around Cambridge Central Train Station**

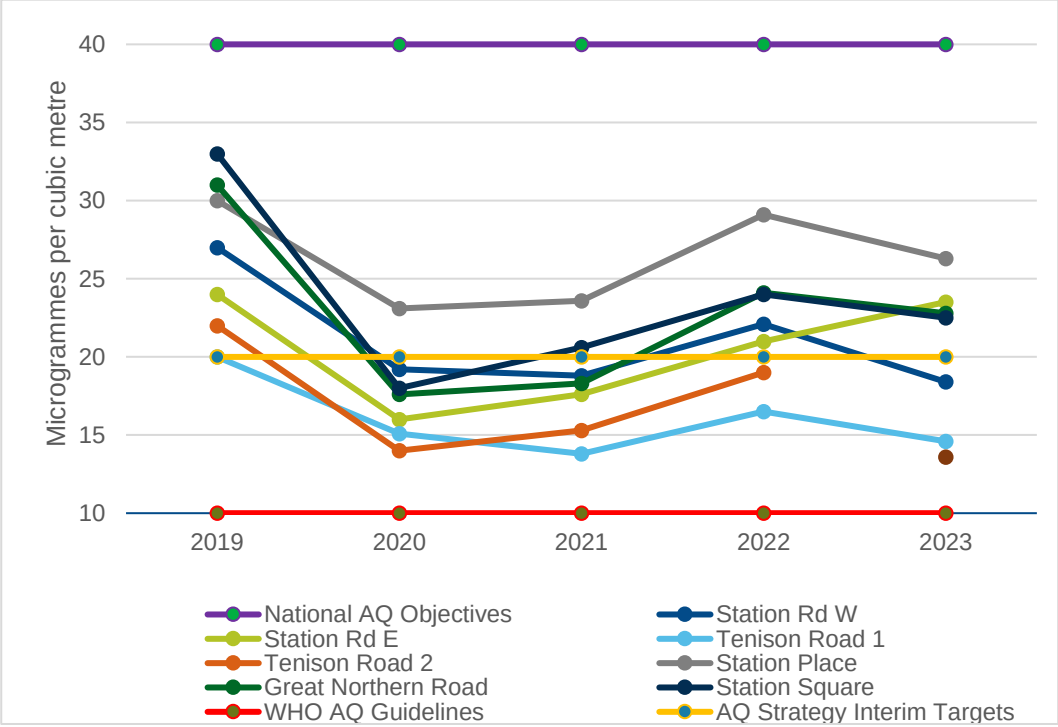



Figure A5 presents the trends in $NO_2$ annual averages for the roads around Cambridge Central Train Station. A decrease in concentrations was seen across all streets with the exception of Station Road East (Tube 52), which is an anomaly and cannot easily be accounted for. Station Road West (Tube 53) saw a very marked decrease, however this can easily be accounted for by partial road closures for several months due to completion of an adjacent development.

Passenger numbers on trains continues to be well below pre-COVID levels (-22%) although an increase was seen in 2023 when compared with 2022. Footfall on Station Square, which is reflective in part to station usage is over 50% down from pre-COVID levels.

**Figure A.6 – Trends in Annual Mean $NO_2$ Concentrations between 2019 and 2023 on the Roads in South Cambridge around Addenbrookes Hospital**

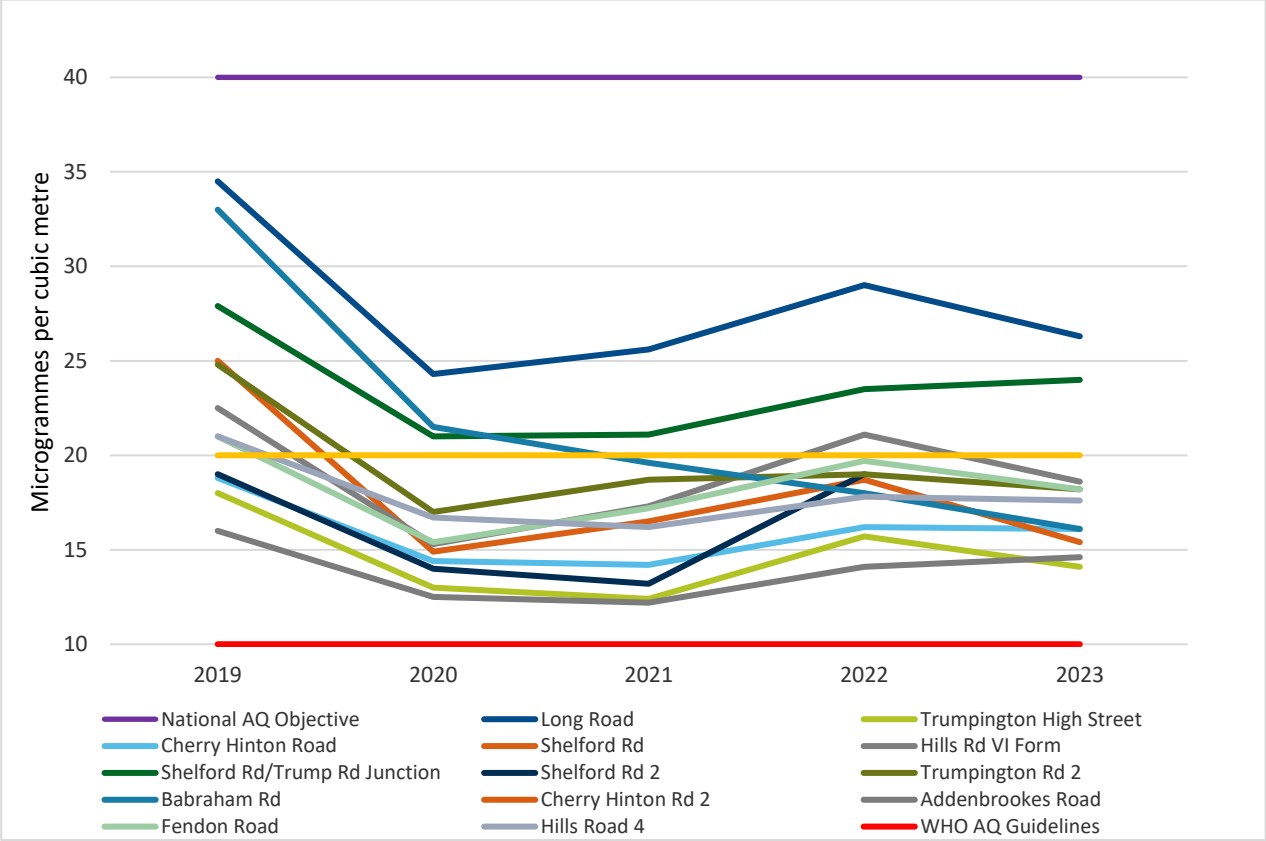



Figure A6 presents the trends in $NO_2$ annual averages for the roads within south Cambridge and around Addenbrookes Hospital both of which are major growth sites. There is a downward / stable trend in concentration measurements.

Construction of South Cambridge Station which will predominantly serve the Biomedical Campus continues and is due for completion in 2025.

➢ **Discussion of the Results**

Measured levels of nitrogen dioxide across both the automatic and diffusion tube monitoring network remained fairly stable or saw a small decrease in concentrations in 2023 following the signifcant drop in 2020 and 2021 due to the COVID pandemic, impact of lockdown and continuing COVID restrictions.

This is in keeping with traffic data that shows that whilst vehicle movements on the local road network in 2023 are still below pre-COVID levels they remained fairly stable when compared with 2022, following an increase in 2022. The AM and PM 'Peak' is spreading, supported most likely by more flexible ways of working which is likely to reduce the chances

of hourly exceedences. It is worth noting that bus passenger numbers, and most notably Park & Ride usage was up in 2023 when compared with 2022; with Park and Ride usage now above pre-COVID levels (+7%).

The weather towards the end of 2023 (most notably November and December) was turbulent with a run of very unsettled, wet and windy weather and a spate of named storms. Measured levels were low across all monitoring locations in November and December. It is possible that this turbulent weather aided dispersion leading to reduced measured levels when compared with a typical winter month. There is emerging research to support that changing weather patterns due to Climate Change can impact air quality both positively and negatively.

The monitoring stations at Parker Street and Regent Street measured decreases in $NO_2$ concentrations, this trend is supported by the wider diffusion tube monitoring network on the inner city streets and around the bus station which all showed more marked decreases than in other areas. This could be attributed to the introduction of electric buses of which 39 of the 41 fully electric buses operating in the City Centre came online during 2023.

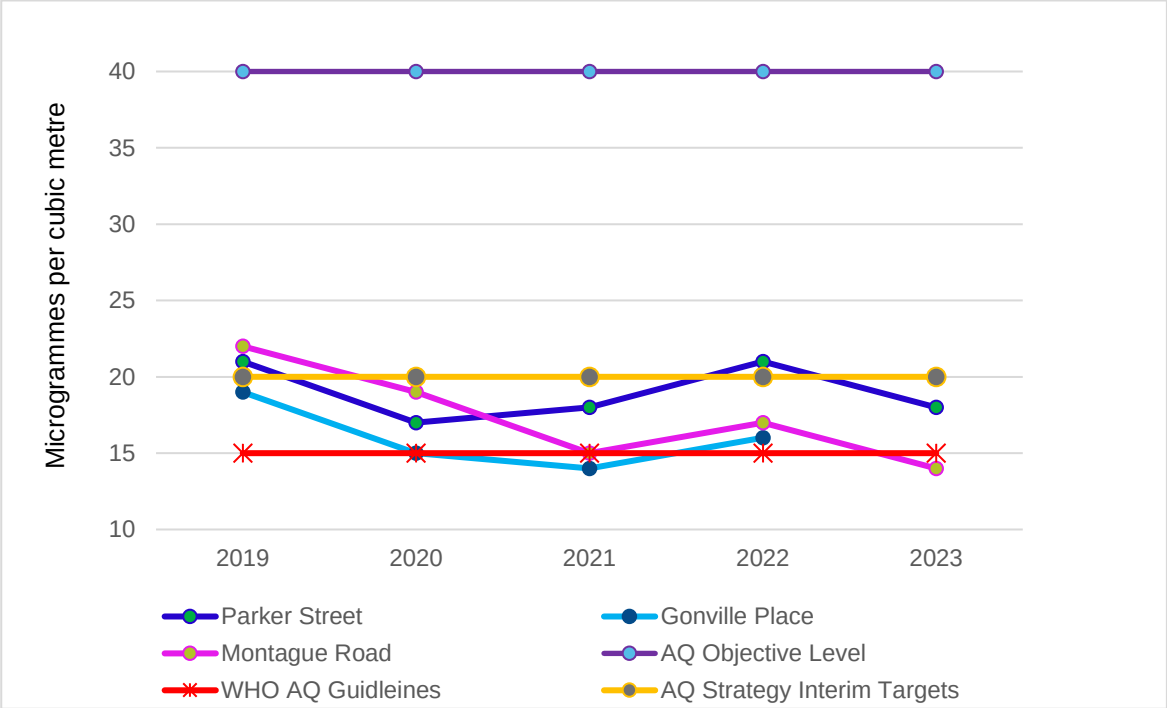
We were advised in the 2022 Appraisal Report to revoke our AQMA as $NO_2$ levels have remained below air quality objectives for over 5 years, and were below the objectives even prior to the COVID outbreak. It was agreed by Cambridge City Council Officers and Members that an Air Quality Strategy should be in place prior to the revocation of the AQMA. The greater Cambridge Air Quality Strategy was adopted in March 2024 and we will be progressing with revoking the AQMA during 2024.

### Particulate Matter ($PM_{10}$)

Table A.6 in Appendix A: Monitoring Results', compares the ratified and adjusted monitored $PM_{10}$ annual mean concentrations for the past five years with the air quality objective of 40µg/$m^3$. There were no exceedances of this air quality objective in 2023.

Table A.7 in Appendix A, compares the ratified continuous monitored $PM_{10}$ daily mean concentrations for the past five years with the air quality objective of 50µg/$m^3$, not to be exceeded more than 35 times per year.

**Figure A.7 – Trends in Annual Mean $PM_{10}$ levels between 2019 and 2023**



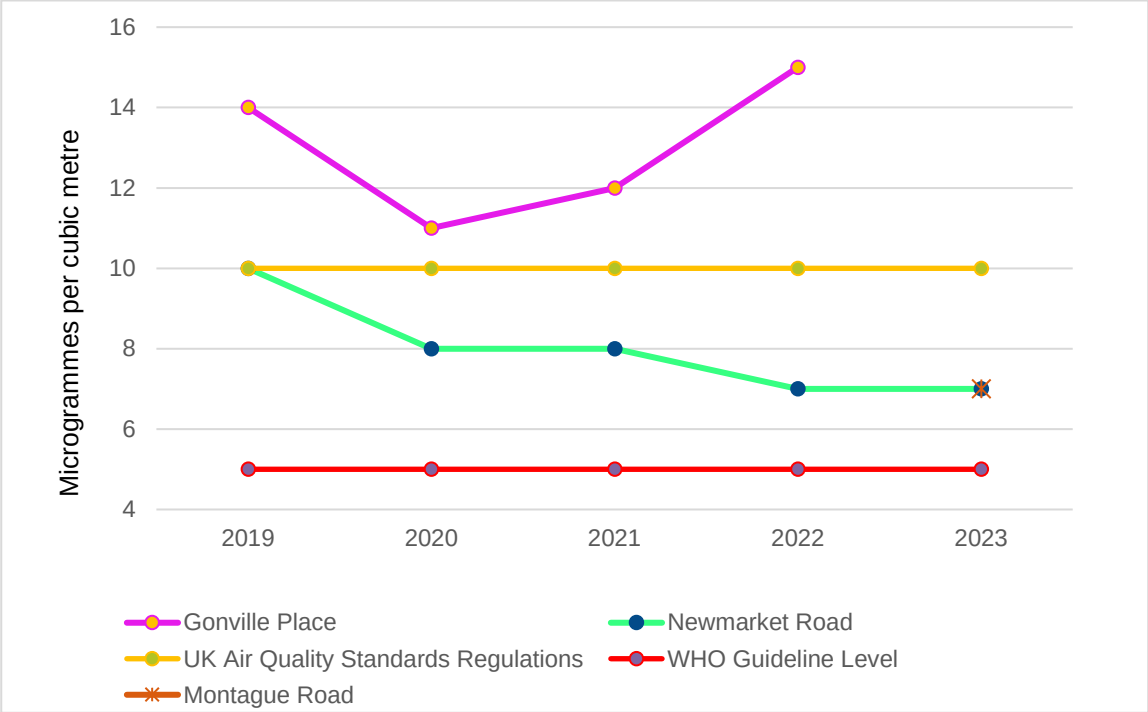

$PM_{10}$ is monitored at Parker Street and Montague Road (the Gonville Place monitor was removed in May 2022). At both these monitoring stations, there was a decrease in measured $PM_{10}$ levels in 2023 with levels sitting between the Air Quality Strategy Interim targets and WHO Air Quality guidelines in 2023.

Table A.7 in Appendix A compares the ratified continuous monitored $PM_{10}$ daily mean concentrations for the past five years with the air quality objective of 50µg/m$^3$, not to be exceeded more than 35 times per year. There was a single exceedance at Parker Street in 2023, compared with two in 2021 and 2022.

### 3.2.2 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

**Figure A.8 – Trends in Annual Mean $PM_{2.5}$ levels between 2019 and 2023**




$PM_{2.5}$ was monitored at two locations within the city in 2023 (Newmarket Road and Montague Road), with Montague Road only becoming operational from March 2023. Levels have remained stable with both Newmarket Road and Montague Road monitoring stations recording levels of 7µg/$m^3$ however, as with 2022 it is felt these results should be used with caution. This is because Montague Road has had poor data capture and the results have been annualised whilst Newmarket Road had good data capture in 2023, there remains lack of confidence in the results this monitor is producing due its location.

➢ **Discussion of the Results for Particulates ($PM_{10}$ & $PM_{2.5}$)**

The reduction in particulate concentrations within the city is unexpected, most notably because all existing monitors are roadside and traffic levels have remained stable from 2022. It is recognised that levels of particulates (most notably $PM_{2.5}$) are influenced by sources outside our district and it is too early to know wider trends both nationally and internationally reflect trends seen in the city, however it is worth noting that the drop in levels seen in 2023 is replicated at monitors within the South Cambridgeshire District area.

As discussed previously some uncertainty exists in the reliability of data due to the loss of longer term trend data, poor data capture and location of monitors however, as with $NO_2$ the more unsettled wet windy weather at the end of 2023 may have influenced the annual results. Measured levels of particulates are typically high in the winter months, windier

weather as seen in November and December can lead to greater dispersion and there is some research that suggests rain leads to a decrease in particulates.

# 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| CM1 | Gonville Place | Roadside | 545508 | 257828 | NO2, PM10, PM2.5 | Yes, AQMA 1 | Chemiluminescent, BAMs | 1.8 | 3.2 | 2 |
| CM2 | Montague Road | Roadside | 546057 | 259487 | NO2, PM10 | Yes, AQMA 1 | Chemiluminescent, BAM | 1.4 | 3.9 | 2 |
| CM2 | Montague Road - New Equipment | Roadside | 546057 | 259487 | NO2, PM10, PM2.5 | Yes, AQMA 2 | Chemiluminescent, TEOM | 1.4 | 3.9 | 2 |
| CM3 | Newmarket Road | Roadside | 546317 | 258900 | NO2, PM2.5 | Yes, AQMA 1 | Chemiluminescent, TEOM | 0.5 | 3.3 | 2 |
| CM4 | Parker Street | Roadside | 545366 | 258391 | NO2, PM10 | Yes, AQMA 1 | Chemiluminescent, BAM | 0.5 | 3.3 | 2.5 |
| CM5 | Regent Street | Roadside | 545289 | 258118 | NO2 | Yes, AQMA 1 | Chemiluminescent | 0.5 | 2.3 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Emmanuel Street | Roadside | 545220 | 258357 | NO2 | Cambridge AQMA | 0.0 | 2.4 | No | 2.5 |
| 2 | Histon Road 2 north | Roadside | 544307 | 261135 | NO2 | NO | 20.0 | 1.7 | No | 2.5 |
| 3 | Magdalene Street | Roadside | 544677 | 258992 | NO2 | Cambridge AQMA | 0.0 | 2.0 | No | 3.5 |
| 4 | Northampton Street | Roadside | 544492 | 259008 | NO2 | Cambridge AQMA | 0.0 | 2.0 | No | 2.5 |
| 5 | Silver Street | Roadside | 544770 | 258112 | NO2 | Cambridge AQMA | 0.0 | 1.0 | No | 5.0 |
| 6 | Long Road | Kerbside | 544867 | 255709 | NO2 | NO | 20.0 | 0.1 | No | 2.0 |
| 7 | Newmarket Road 1 | Kerbside | 546181 | 258886 | NO2 | Cambridge AQMA | 10.0 | 1.0 | No | 2.0 |
| 8 | Milton Road | Roadside | 545979 | 260357 | NO2 | NO | 7.0 | 14.0 | No | 2.0 |
| 9 | Drummer Street | Roadside | 545235 | 258485 | NO2 | Cambridge AQMA | 0.0 | 2.1 | No | 2.5 |
| 10 | Gilbert Road | Kerbside | 545314 | 259777 | NO2 | NO | 10.0 | 1.0 | No | 2.0 |
| 11 | Latham Road | Urban Background | 544811 | 256744 | NO2 | NO | 10.0 | 20.0 | No | 2.0 |
| 12 | Newmarket Road 2 | Roadside | 547998 | 259349 | NO2 | Cambridge AQMA | 30.0 | 3.7 | No | 2.0 |
| 13 | East Road | Kerbside | 545904 | 258431 | NO2 | Cambridge AQMA | 4.5 | 0.5 | No | 2.5 |
| 14 | Mill Road | Roadside | 546080 | 257949 | NO2 | Cambridge AQMA | 0.0 | 2.0 | No | 2.0 |
| 15 | Eddington | Suburban | 542748 | 260046 | NO2 | NO | 2.0 | 0.4 | No | 2.0 |
| 16 | Regent Street | Roadside | 545289 | 258133 | NO2 | Cambridge AQMA | 0.0 | 2.3 | No | 5.5 |
| 17 | Coldhams Lane | Roadside | 547216 | 258286 | NO2 | NO | 10.0 | 3.5 | No | 2.0 |
| 18 | Pembroke Street | Kerbside | 544884 | 258098 | NO2 | Cambridge AQMA | 0.0 | 1.0 | No | 2.0 |
| 19 | Huntingdon Road 2 west | Roadside | 543010 | 260344 | NO2 | NO | 25.0 | 2.5 | No | 2.0 |
| N20 | Northfield Avenue | Kerbside | 545543 | 261367 | NO2 | NO | 3.0 | 0.5 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 21 | Victoria Road (outside 208a) | Roadside | 544425 | 259560 | NO2 | Cambridge AQMA | 0.0 | 1.8 | No | 2.0 |
| 22 | Madingley Road | Kerbside | 543784 | 259093 | NO2 | NO | 20.0 | 0.8 | No | 2.0 |
| 23 | Huntingdon Road 1 | Kerbside | 543761 | 259813 | NO2 | NO | 15.0 | 1.0 | No | 2.0 |
| 24 | Histon Road 1 | Kerbside | 544308 | 259664 | NO2 | NO | 2.0 | 0.5 | No | 2.0 |
| 25 | Barton Road | Roadside | 544100 | 257473 | NO2 | NO | 20.0 | 2.2 | No | 2.0 |
| 26 | Fen Causeway | Roadside | 544943 | 257567 | NO2 | Cambridge AQMA | 50.0 | 2.1 | No | 2.0 |
| 27 | Trumpington Road | Roadside | 544575 | 255307 | NO2 | NO | 5.0 | 2.7 | No | 2.0 |
| 28 | Babraham Road | Roadside | 546961 | 255132 | NO2 | NO | 20.0 | 1.2 | No | 2.0 |
| 29 | Cherry Hinton Road | Kerbside | 548331 | 256252 | NO2 | NO | 10.0 | 0.8 | No | 2.5 |
| 30 | Arbury Road | Kerbside | 545693 | 260473 | NO2 | NO | 5.0 | 0.8 | No | 2.0 |
| 31 | Newnham Road | Roadside | 544529 | 257730 | NO2 | Cambridge AQMA | 0.0 | 1.6 | No | 2.0 |
| 32 | Hills Road 2 VI form | Roadside | 545893 | 257234 | NO2 | NO | 2.0 | 3.6 | No | 2.5 |
| 33 | Victoria Avenue | Roadside | 545333 | 259439 | NO2 | Cambridge AQMA | 0.0 | 1.4 | No | 2.0 |
| 34 | Parker Street | Roadside | 545390 | 258390 | NO2 | Cambridge AQMA | 0.0 | 1.4 | No | 2.5 |
| 35 | Abbey Road | Roadside | 546163 | 258983 | NO2 | Cambridge AQMA | 1.0 | 1.7 | No | 2.0 |
| 36 | Cockburn Street | Suburban | 546596 | 257594 | NO2 | Cambridge AQMA | 0.0 | 1.5 | No | 2.0 |
| 37 | Oaktree Avenue | Suburban | 545885 | 260088 | NO2 | Cambridge AQMA | 10.0 | 1.0 | No | 2.0 |
| 38 | Chesterton Road | Roadside | 545566 | 259579 | NO2 | Cambridge AQMA | 2.0 | 2.7 | No | 2.0 |
| 39 | Maids Causeway | Kerbside | 545710 | 258782 | NO2 | Cambridge AQMA | 5.0 | 0.8 | No | 2.0 |
| 40 | Emmanual Road | Roadside | 545405 | 258521 | NO2 | Cambridge AQMA | 0.0 | 1.5 | No | 2.0 |
| 41 | Downing Street | Roadside | 545162 | 258240 | NO2 | Cambridge AQMA | 0.0 | 1.3 | No | 2.0 |

| Diffusion Tube ID | Site Name | Site Type | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored | In AQMA? Which AQMA? | Distance to Relevant Exposure (m) (1) | Distance to kerb of nearest road (m) (2) | Tube Co-located with a Continuous Analyser? | Tube Height (m) |
|---|---|---|---|---|---|---|---|---|---|---|
| 42 | Trumpington Street | Roadside | 544981 | 257890 | NO2 | Cambridge AQMA | 2.0 | 1.4 | No | 2.0 |
| 43 | Lensfield Road | Roadside | 545271 | 257675 | NO2 | Cambridge AQMA | 5.0 | 1.8 | No | 2.0 |
| 44 | Park Terrace | Roadside | 545271 | 258271 | NO2 | Cambridge AQMA | 3.0 | 1.9 | No | 2.5 |
| 45 | St Andrew's St | Kerbside | 545135 | 258391 | NO2 | Cambridge AQMA | 1.0 | 0.8 | No | 2.5 |
| 46 | Parkside | Kerbside | 545549 | 258283 | NO2 | Cambridge AQMA | 5.0 | 0.5 | No | 2.0 |
| N47 | Gonville Place | Roadside | 545511 | 257837 | NO2 | Cambridge AQMA | 5.0 | 1.5 | No | 2.5 |
| N48 | New Chesterton High Street | Roadside | 546214 | 259845 | NO2 | Cambridge AQMA | 5.0 | 1.5 | No | 2.5 |
| N49 | Milton Road 2 | Roadside | 546709 | 261054 | NO2 | NO | 5.0 | 2.0 | No | 2.5 |
| 50 | Hills Road 3 Botanic | Roadside | 545854 | 257229 | NO2 | Cambridge AQMA | 3.0 | 3.0 | No | 2.0 |
| 51 | Shelford Road | Roadside | 544960 | 257152 | NO2 | Cambridge AQMA | 5.0 | 2.0 | No | 2.0 |
| 52 | Station Road 2 East - Station | Kerbside | 546019 | 257300 | NO2 | NO | 10.0 | 0.4 | No | 2.0 |
| 53 | Station Road 1 West - Jupiter | Kerbside | 545897 | 257325 | NO2 | NO | 10.0 | 0.4 | No | 2.0 |
| 54 | Tenison Road 1 96 | Kerbside | 546027 | 257683 | NO2 | Cambridge AQMA | 4.0 | 0.2 | No | 2.5 |
| N55 | Cherry Hinton Road 2 | Roadside | 545504 | 261492 | NO2 | NO | 5.0 | 2.0 | No | 2.5 |
| 56 | Coldhams Lane 2 Silverwood | Roadside | 546602 | 258796 | NO2 | Cambridge AQMA | 8.0 | 1.7 | No | 2.5 |
| 57 | Great Northern Road | Kerbside | 546060 | 257389 | NO2 | Cambridge AQMA | 3.0 | 0.2 | No | 2.5 |
| 58 | Station Place | Kerbside | 546080 | 257092 | NO2 | Cambridge AQMA | 3.0 | 0.5 | No | 2.0 |
| 59 | Coldhams Lane 3 | Roadside | 548858 | 257162 | NO2 | NO | 7.5 | 2.5 | No | 2.5 |
| 60 | Barnwell Road | Kerbside | 547917 | 258942 | NO2 | NO | 7.5 | 0.2 | No | 2.5 |
| 61 | Newmarket Road 3 | Roadside | 546341 | 258882 | NO2 | NO | 10.0 | 2.0 | No | 2.5 |
| 62 | Mill Road 2 | Roadside | 547181 | 257566 | NO2 | NO | 0.0 | 2.5 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 63 | Station Square | Kerbside | 546177 | 257309 | NO2 | Cambridge AQMA | 3.0 | 1.0 | No | 2.5 |
| 64 | Park Street | Roadside | 544952 | 258856 | NO2 | NO | 8.0 | 2.0 | No | 2.5 |
| 65 | Brooklands Avenue | Kerbside | 545896 | 257025 | NO2 | Cambridge AQMA | 3.0 | 1.0 | No | 2.5 |
| 66 | Shelford/Trumpington | Kerbside | 544614 | 254646 | NO2 | Cambridge AQMA | 15.0 | 1.0 | No | 2.5 |
| N67 | Devonshire Road | Kerbside | 546246 | 257598 | NO2 | Cambridge AQMA | 0.5 | 1.0 | No | 2.5 |
| 68 | Addenbrookes Road | Roadside | 545211 | 254217 | NO2 | NO | 10.0 | 3.0 | No | 2.5 |
| 69 | Fendon Road | Kerbside | 546854 | 255405 | NO2 | NO | 20.0 | 0.5 | No | 2.5 |
| 70 | Hills Road 4 | Roadside | 546693 | 255379 | NO2 | NO | 30.0 | 3.0 | No | 2.5 |
| 71 | Trumpington Road 2 | Kerbside | 545245 | 256860 | NO2 | NO | 20.0 | 0.5 | No | 2.5 |
| 72, 73, 74 | Montague | Roadside | 546055 | 259486 | NO2 | Cambridge AQMA | 1.4 | 3.9 | No | 2.0 |

**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 $NO_2$ Monitoring Results: Automatic Monitoring (µg/m$^3$)**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| CM1 Gonville Place | 545508 | 257828 | Roadside | 0 | 0 | 28 | 20 | 21 | 22 | |
| CM2 Montague Road | 546057 | 259487 | Roadside | 91.77 | 91.77 | 22 | 16 | 18 | 18 | 18 |
| CM3 Newmarket Road | 546317 | 258900 | Roadside | 92.16 | 92.16 | 22 | 18 | 20 | 17 | 16 |
| CM4 Parker Street | 545366 | 258391 | Roadside | 99.21 | 99.21 | 33 | 24 | 23 | 24 | 22 |
| CM5 Regent Street | 545289 | 258118 | Roadside | 95.32 | 95.32 | 27 | 22 | 23 | 24 | 20 |

☒ **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 $NO_2$ 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/m$^3$.

Exceedances of the $NO_2$ annual mean objective of 40µg/m$^3$ 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 $NO_2$ Monitoring Results: Non-Automatic Monitoring (µg/m$^3$)

| Diffusion Tube ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Valid Data Capture for Monitoring Period (%) (1) | Valid Data Capture 2023 (%) (2) | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 545220 | 258357 | Roadside | 84.6 | 92.3 | 35.0 | 20.2 | 22.0 | 28.5 | 27.6 |
| 2 | 544307 | 261135 | Roadside | 92.3 | 92.3 | 21.0 | 13.8 | 12.0 | 15.1 | 15.1 |
| 3 | 544677 | 258992 | Roadside | 82.7 | 90.4 | 20.0 | 12.4 | 13.6 | 16.6 | 15.1 |
| 4 | 544492 | 259008 | Roadside | 65.4 | 73.1 | 31.0 | 20.1 | 19.8 | 20.1 | 22.6 |
| 5 | 544770 | 258112 | Roadside | 92.3 | 100.0 | 24.0 | 13.0 | 13.7 | 16.8 | 15.3 |
| 6 | 544867 | 255709 | Kerbside | 92.3 | 100.0 | 34.0 | 24.3 | 25.6 | 28.7 | 26.3 |
| 7 | 546181 | 258886 | Kerbside | 92.3 | 100.0 | 31.0 | 26.0 | 22.7 | 27.4 | 26.0 |
| 8 | 545979 | 260357 | Roadside | 92.3 | 92.3 | 18.0 | 14.0 | 12.7 | 15.3 | 12.2 |
| 9 | 545235 | 258485 | Roadside | 92.3 | 100.0 | 23.0 | 16.7 | 17.7 | 21.2 | 20.3 |
| 10 | 545314 | 259777 | Kerbside | 92.3 | 100.0 | 24.0 | 15.7 | 13.9 | 16.9 | 16.6 |
| 11 | 544811 | 256744 | Urban Background | 92.3 | 100.0 | 11.0 | 7.4 | 7.2 | 8.6 | 7.6 |
| 12 | 547998 | 259349 | Roadside | 92.3 | 100.0 | 23.0 | 20.4 | 19.1 | 21.1 | 20.6 |
| 13 | 545904 | 258431 | Kerbside | 57.7 | 65.4 | | | | 25.4 | 23.4 |
| 14 | 546080 | 257944 | Roadside | 82.7 | 90.4 | 21.0 | 15.8 | 14.9 | 17.7 | 17.5 |
| 15 | 542748 | 260049 | Suburban | 92.3 | 100.0 | 18.0 | 12.7 | 11.6 | 14.6 | 13.1 |
| 16 | 545289 | 258133 | Roadside | 67.3 | 75.0 | 26.0 | 17.0 | 18.8 | 22.1 | 20.0 |
| 17 | 547216 | 258286 | Roadside | 92.3 | 100.0 | 22.0 | 15.1 | 17.6 | 18.6 | 14.8 |
| 18 | 544884 | 258098 | Kerbside | 92.3 | 100.0 | 30.0 | 17.9 | 17.9 | 21.0 | 21.5 |
| 19 | 543010 | 260344 | Roadside | 92.3 | 100.0 | 18.0 | 11.7 | 12.1 | 15.5 | 13.0 |
| N20 | 545543 | 261367 | Kerbside | 92.3 | 100.0 | | | | | 13.2 |
| 21 | 544425 | 259560 | Roadside | 76.9 | 84.6 | 22.0 | 15.8 | 15.5 | 18.2 | 15.8 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 543784 | 259093 | Kerbside | 92.3 | 100.0 | 30.0 | 18.1 | 17.5 | 21.2 | 20.6 |
| 23 | 543761 | 259813 | Kerbside | 84.6 | 84.6 | 17.0 | 11.7 | 10.7 | 15.0 | 13.2 |
| 24 | 544308 | 259664 | Kerbside | 84.6 | 84.6 | 25.0 | 19.0 | 16.5 | 20.2 | 19.6 |
| 25 | 544100 | 257473 | Roadside | 75 | 75.0 | 18.0 | 11.2 | 11.9 | 13.8 | 13.0 |
| 26 | 544943 | 257567 | Roadside | 84.6 | 92.3 | 18.0 | 12.0 | 12.5 | 14.0 | 13.1 |
| 27 | 544575 | 255307 | Roadside | 92.3 | 100.0 | 18.0 | 13.0 | 12.4 | 15.7 | 14.1 |
| 28 | 546961 | 255132 | Roadside | 84.6 | 92.3 | 33.0 | 21.5 | 19.6 | 18.1 | 16.1 |
| 29 | 548331 | 256252 | Kerbside | 92.3 | 100.0 | 19.0 | 14.4 | 14.2 | 16.2 | 16.1 |
| 30 | 545693 | 260473 | Kerbside | 84.6 | 92.3 | 18.0 | 14.9 | 14.9 | 17.6 | 15.4 |
| 31 | 544529 | 257730 | Roadside | 92.3 | 100.0 | 29.0 | 20.3 | 21.3 | 25.7 | 22.7 |
| 32 | 545893 | 257234 | Roadside | 92.3 | 100.0 | 22.0 | 15.3 | 17.3 | 21.1 | 18.6 |
| 33 | 545333 | 259439 | Roadside | 92.3 | 100.0 | 31.0 | 21.4 | 23.5 | 27.9 | 26.2 |
| 34 | 545390 | 258390 | Roadside | 82.7 | 82.7 | 31.0 | 19.3 | 20.9 | 28.0 | 24.6 |
| 35 | 546163 | 258983 | Roadside | 92.3 | 100.0 | 17.0 | 13.5 | 13.2 | 14.3 | 13.4 |
| 36 | 546596 | 257594 | Suburban | 92.3 | 100.0 | 15.0 | 11.1 | 10.9 | 14.7 | 11.2 |
| 37 | 545885 | 260088 | Suburban | 92.3 | 100.0 | 15.0 | 11.0 | 11.4 | 13.0 | 11.9 |
| 38 | 545566 | 259579 | Roadside | 73.1 | 80.8 | 23.0 | 15.9 | 14.4 | 18.3 | 18.7 |
| 39 | 545710 | 258782 | Kerbside | 92.3 | 100.0 | 27.0 | 18.7 | 18.1 | 22.0 | 21.6 |
| 40 | 545405 | 258521 | Roadside | 92.3 | 100.0 | 31.0 | 23.0 | 25.1 | 28.6 | 24.6 |
| 41 | 545162 | 258240 | Roadside | 92.3 | 100.0 | 27.0 | 16.3 | 16.9 | 22.9 | 20.6 |
| 42 | 544981 | 257890 | Roadside | 92.3 | 100.0 | 20.0 | 13.1 | 13.0 | 16.4 | 15.0 |
| 43 | 545271 | 257675 | Roadside | 65.4 | 65.4 | 27.0 | 18.6 | 19.6 | 22.9 | 23.4 |
| 44 | 545271 | 258271 | Roadside | 84.6 | 92.3 | 21.0 | 13.9 | 14.6 | 18.0 | 15.4 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 545135 | 258391 | Kerbside | 92.3 | 100.0 | 32.0 | 20.6 | 17.8 | 26.0 | 23.3 |
| 46 | 545549 | 258283 | Kerbside | 82.7 | 82.7 | 19.0 | 13.9 | 13.7 | 13.6 | 14.5 |
| N47 | 545511 | 257837 | Roadside | 75 | 82.7 | | | | | 28.3 |
| N48 | 546214 | 259845 | Roadside | 92.3 | 100.0 | | | | | 20.8 |
| N49 | 546709 | 261054 | Roadside | 92.3 | 100.0 | | | | | 18.3 |
| 50 | 545854 | 257229 | Roadside | 92.3 | 100.0 | 23.0 | 15.9 | 17.6 | 21.3 | 18.7 |
| 51 | 544960 | 257152 | Roadside | 76.9 | 84.6 | 25.0 | 14.9 | 16.5 | 18.7 | 15.4 |
| 52 | 546019 | 257300 | Kerbside | 92.3 | 100.0 | 24.0 | 15.8 | 17.6 | 20.9 | 23.5 |
| 53 | 545897 | 257325 | Kerbside | 51.9 | 59.6 | 27.0 | 19.2 | 18.8 | 22.1 | 18.4 |
| 54 | 546027 | 257683 | Kerbside | 92.3 | 100.0 | 20.0 | 15.1 | 13.8 | 16.5 | 14.6 |
| N55 | 545504 | 261492 | Roadside | 51.9 | 59.6 | | | | | 15.9 |
| 56 | 546602 | 258796 | Roadside | 75 | 82.7 | 20.0 | 17.3 | 16.9 | 19.9 | 18.0 |
| 57 | 546060 | 257389 | Kerbside | 82.7 | 90.4 | 31.0 | 17.6 | 18.3 | 24.1 | 22.8 |
| 58 | 546080 | 257092 | Kerbside | 59.6 | 67.3 | 30.0 | 23.1 | 23.6 | 29.1 | 26.3 |
| 59 | 548858 | 257162 | Roadside | 73.1 | 80.8 | 16.0 | 12.1 | 11.3 | 14.7 | 13.6 |
| 60 | 547917 | 258942 | Kerbside | 92.3 | 100.0 | 22.0 | 16.4 | 17.5 | 20.5 | 17.5 |
| 61 | 546341 | 258882 | Roadside | 92.3 | 100.0 | 34.0 | 21.8 | 26.3 | 30.7 | 27.0 |
| 62 | 547181 | 257566 | Roadside | 92.3 | 92.3 | 20.0 | 14.6 | 15.1 | 18.6 | 15.8 |
| 63 | 546177 | 257309 | Kerbside | 92.3 | 92.3 | 33.0 | 17.9 | 20.6 | 23.8 | 22.5 |
| 64 | 544952 | 258856 | Roadside | 82.7 | 82.7 | 23.0 | 15.4 | 15.3 | 18.6 | 15.9 |
| 65 | 545896 | 257025 | Kerbside | 65.4 | 73.1 | 22.0 | 16.1 | 16.1 | 19.6 | 20.7 |
| 66 | 544614 | 254646 | Kerbside | 92.3 | 100.0 | 28.0 | 20.9 | 21.1 | 23.5 | 24.0 |
| N67 | 546246 | 257598 | Kerbside | 50 | 57.7 | | | | | 13.6 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 68 | 545211 | 254217 | Roadside | 92.3 | 100.0 | 16.0 | 12.5 | 12.2 | 14.1 | 14.6 |
| 69 | 546854 | 255405 | Kerbside | 92.3 | 100.0 | 21.0 | 15.4 | 17.2 | 19.7 | 18.2 |
| 70 | 546693 | 255379 | Roadside | 92.3 | 100.0 | 21.0 | 16.7 | 16.2 | 17.8 | 17.6 |
| 71 | 545245 | 256860 | Kerbside | 75 | 82.7 | 25.0 | 14.5 | 18.7 | 18.9 | 18.2 |
| 72, 73, 74 | 546055 | 259486 | Roadside | 92.3 | 100.0 | | | | 16.6 | 17.5 |

☒ **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 $NO_2$ Monitoring Results, Number of 1-Hour Means > 200µg/m$^3$**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| CM1 Gonville Place | 545508 | 257828 | Roadside | 0 | 0 | 0 | 0 | 0 | 0 | |
| CM2 Montague Road | 546057 | 259487 | Roadside | 91.77 | 91.77 | 0 | 0 | 1 | 0 | 0 |
| CM3 Newmarket Road | 546317 | 258900 | Roadside | 92.16 | 92.16 | 0 | 0 | 0 | 0 | 0 |
| CM4 Parker Street | 545366 | 258391 | Roadside | 99.21 | 99.21 | 0 | 0 | 0 | 0 | 0 |
| CM5 Regent Street | 545289 | 258118 | Roadside | 95.32 | 95.32 | 0 | 0 | 0 | 0 | 0 |

**Notes:**

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m$^3$ have been recorded.

Exceedances of the $NO_2$ 1-hour mean objective (200µg/m$^3$ 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%).

**Table A.6 – Annual Mean $PM_{10}$ Monitoring Results ($\mu g/m^3$)**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| CM1 Gonville Place | 545508 | 257828 | Roadside | 0 | 0 | 19 | 15 | 14 | 16 | |
| CM2 Montague Road | 546057 | 259487 | Roadside | 80.8 | 80.8 | 22 | 19 | 15 | 17 | 14 |
| CM4 Parker Street | 545366 | 258391 | Roadside | 98.62 | 98.62 | 21 | 17 | 18 | 21 | 18 |

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

**Notes:**

The annual mean concentrations are presented as $\mu g/m^3$.

Exceedances of the $PM_{10}$ annual mean objective of 40$\mu g/m^3$ 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.

(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.7 – 24-Hour Mean $PM_{10}$ Monitoring Results, Number of $PM_{10}$ 24-Hour Means > 50µg/m$^3$**

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| CM1 Gonville Place | 545508 | 257828 | Roadside | 0 | 0 | 2 | 0 | 0 | 1 | |
| CM2 Montague Road | 546057 | 259487 | Roadside | 80.8 | 80.8 | 6 | 0 | 0 | 0 | 0 |
| CM4 Parker Street | 545366 | 258391 | Roadside | 98.62 | 98.62 | 5 | 0 | 2 | 2 | 1 |

**Notes:**

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m$^3$ have been recorded.

Exceedances of the $PM_{10}$ 24-hour mean objective (50µg/m$^3$ not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th percentile of 24-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%).

## Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m$^3$)

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| CM1 Gonville Place | 545508 | 257828 | Roadside | 0 | 0 | 14 | 11 | 12 | 15 | |
| CM2 Montague Road | 546057 | 259487 | Roadside | 77.25 | 58.9 | | | | | 7 |
| CM3 Newmarket Road | 546317 | 258900 | Roadside | 94.12 | 94.12 | 10 | 8 | 8 | 7 | 7 |

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

**Notes:**

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

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.

(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%).

# Appendix B: Full Monthly Diffusion Tube Results for 2023

## Table B.1 – $NO_2$ 2023 Diffusion Tube Results ($\mu g/m^3$)

| DT ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual Mean:Raw Data | Annual Mean: Annualised and Bias Adjusted (0.8) | Annual Mean: Distance Corrected to Nearest Exposure | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 545220 | 258357 | 41.6 | 46.9 | 39.6 | 40.0 | 31.2 | 27.6 | 26.8 | 26.9 | 32.9 | | 32.3 | 33.6 | 34.5 | 27.6 | - | |
| 2 | 544307 | 261135 | 22.8 | 23.6 | 19.6 | 18.2 | 16.7 | 15.5 | 12.3 | 14.0 | 21.0 | 22.3 | 21.6 | | 18.9 | 15.1 | - | |
| 3 | 544677 | 258992 | 23.5 | 25.1 | 21.4 | 20.7 | 17.0 | | 12.2 | 16.1 | 16.5 | 20.6 | 21.0 | 14.2 | 18.9 | 15.1 | - | |
| 4 | 544492 | 259008 | 28.4 | 40.5 | 30.9 | 29.7 | 25.3 | 26.6 | | | 27.6 | 29.8 | | 15.0 | 28.2 | 22.6 | - | |
| 5 | 544770 | 258112 | 24.2 | 29.9 | 22.0 | 17.2 | 16.3 | 16.9 | 14.1 | 13.1 | 17.6 | 22.2 | 20.7 | 15.5 | 19.1 | 15.3 | - | |
| 6 | 544867 | 255709 | 42.2 | 45.5 | 31.1 | 37.7 | 28.0 | 28.8 | 26.2 | 29.6 | 32.6 | 29.2 | 36.1 | 27.3 | 32.9 | 26.3 | - | |
| 7 | 546181 | 258886 | 39.8 | 43.2 | 34.0 | 28.8 | 27.1 | 29.1 | 25.9 | 27.6 | 36.2 | 36.2 | 35.8 | 26.9 | 32.6 | 26.0 | - | |
| 8 | 545979 | 260357 | 19.9 | 25.0 | 18.2 | 13.3 | 11.0 | 11.7 | 11.0 | 9.9 | 16.0 | 16.2 | 16.1 | | 15.3 | 12.2 | - | |
| 9 | 545235 | 258485 | 29.8 | 35.1 | 24.1 | 31.4 | 31.1 | 31.4 | 15.0 | 18.3 | 19.5 | 25.5 | 23.1 | 20.0 | 25.4 | 20.3 | - | |
| 10 | 545314 | 259777 | 30.4 | 30.8 | 22.4 | 18.3 | 15.1 | 17.1 | 16.7 | 14.4 | 17.6 | 20.6 | 24.5 | 20.8 | 20.7 | 16.6 | - | |
| 11 | 544811 | 256744 | 14.1 | 12.8 | 10.2 | 9.2 | 5.7 | 7.7 | 5.4 | 7.6 | 8.0 | 11.1 | 13.1 | 9.3 | 9.5 | 7.6 | - | |
| 12 | 547998 | 259349 | 29.7 | 32.9 | 25.5 | 24.7 | 17.2 | 19.4 | 20.4 | 22.3 | 32.0 | 33.1 | 32.0 | 19.8 | 25.8 | 20.6 | - | |
| 13 | 545904 | 258431 | 34.0 | | 35.8 | 24.8 | 28.5 | | 24.5 | | 33.5 | | 27.2 | 27.6 | 29.5 | 23.4 | - | |
| 14 | 546080 | 257944 | 22.8 | 22.2 | 21.3 | 22.0 | 18.5 | 32.0 | 12.5 | | 21.2 | 23.7 | 26.4 | 17.8 | 21.9 | 17.5 | - | |
| 15 | 542748 | 260049 | 24.0 | 27.4 | 16.1 | 14.6 | 10.2 | 9.2 | 11.0 | 11.3 | 15.2 | 16.9 | 25.1 | 15.3 | 16.4 | 13.1 | - | |
| 16 | 545289 | 258133 | 34.0 | 34.5 | 19.6 | 29.2 | 20.8 | 18.1 | | 21.3 | 24.5 | | | 23.3 | 25.0 | 20.0 | - | |
| 17 | 547216 | 258286 | 28.3 | 31.0 | 20.5 | 16.9 | 15.5 | 13.0 | 10.9 | 12.5 | 15.6 | 21.6 | 18.4 | 17.1 | 18.4 | 14.8 | - | |
| 18 | 544884 | 258098 | 34.8 | 33.8 | 28.2 | 28.8 | 22.1 | 21.0 | 22.1 | 20.5 | 25.6 | 32.8 | 31.6 | 21.9 | 26.9 | 21.5 | - | |

| 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 (0.8) | Annual Mean: Distance Corrected to Nearest Exposure | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 543010 | 260344 | 25.2 | 30.1 | 13.3 | 17.0 | 9.1 | 10.1 | 11.3 | 12.3 | 15.3 | 15.8 | 20.3 | 15.7 | 16.3 | 13.0 | - | |
| N20 | 545543 | 261367 | 26.0 | 25.8 | 19.0 | 15.1 | 12.7 | 11.3 | 10.9 | 11.9 | 16.1 | 16.7 | 17.9 | 14.1 | 16.5 | 13.2 | - | |
| 21 | 544425 | 259560 | | | 18.9 | 17.9 | 17.6 | 15.7 | 14.0 | 17.3 | 22.0 | 25.2 | 28.0 | 20.3 | 19.7 | 15.8 | - | |
| 22 | 543784 | 259093 | 32.0 | 33.0 | 31.5 | 27.8 | 24.5 | 24.7 | 19.6 | 20.5 | 25.5 | 27.2 | 24.2 | 19.1 | 25.8 | 20.6 | - | |
| 23 | 543761 | 259813 | 19.9 | 22.0 | 16.4 | 14.7 | | 20.5 | 11.7 | 12.0 | 15.3 | 12.4 | 20.4 | | 16.5 | 13.2 | - | |
| 24 | 544308 | 259664 | 29.2 | 31.3 | 24.3 | | 16.0 | 17.6 | 21.6 | 18.8 | 24.0 | 31.2 | 31.1 | | 24.5 | 19.6 | - | |
| 25 | 544100 | 257473 | 23.7 | 21.1 | 15.6 | 15.2 | 14.0 | | 8.6 | 10.5 | | 16.0 | 21.2 | | 16.2 | 13.0 | - | |
| 26 | 544943 | 257567 | 23.2 | 24.1 | 18.0 | | 16.4 | 14.4 | 9.1 | 12.4 | 14.0 | 15.0 | 20.9 | 13.1 | 16.4 | 13.1 | - | |
| 27 | 544575 | 255307 | 22.0 | 26.8 | 20.9 | 18.0 | 13.5 | 13.3 | 9.1 | 11.9 | 17.1 | 23.6 | 18.2 | 16.6 | 17.6 | 14.1 | - | |
| 28 | 546961 | 255132 | 25.6 | 27.5 | 20.2 | | 28.2 | 18.2 | 12.6 | 18.9 | 18.1 | 21.0 | 18.2 | 12.3 | 20.1 | 16.1 | - | |
| 29 | 548331 | 256252 | 31.2 | 29.8 | 19.4 | 17.5 | 13.3 | 14.5 | 13.6 | 16.9 | 17.6 | 21.6 | 27.3 | 18.9 | 20.1 | 16.1 | - | |
| 30 | 545693 | 260473 | 26.2 | 29.2 | 19.3 | 18.7 | 14.1 | 11.9 | | 15.1 | 18.8 | 15.7 | 28.0 | 15.0 | 19.3 | 15.4 | - | |
| 31 | 544529 | 257730 | 31.4 | 37.3 | 30.1 | 26.6 | 20.4 | 25.5 | 21.5 | 24.8 | 33.8 | 32.7 | 32.3 | 23.4 | 28.3 | 22.7 | - | |
| 32 | 545893 | 257234 | 33.8 | 32.2 | 28.8 | 23.2 | 19.3 | 20.4 | 16.4 | 19.3 | 23.0 | 22.5 | 21.6 | 18.2 | 23.2 | 18.6 | - | |
| 33 | 545333 | 259439 | 37.2 | 41.0 | 37.7 | 40.9 | 34.4 | 32.3 | 20.1 | 27.7 | 32.3 | 33.4 | 31.7 | 24.2 | 32.7 | 26.2 | - | |
| 34 | 545390 | 258390 | 39.5 | 41.5 | | 29.6 | 28.6 | 27.2 | 22.6 | 22.9 | 25.4 | 32.2 | 37.8 | | 30.7 | 24.6 | - | |
| 35 | 546163 | 258983 | 24.8 | 24.7 | 18.6 | 13.0 | 9.1 | 10.2 | 12.5 | 11.8 | 15.8 | 17.6 | 23.1 | 19.6 | 16.7 | 13.4 | - | |
| 36 | 546596 | 257594 | 22.5 | 22.6 | 16.3 | 12.8 | 10.5 | 9.4 | 9.2 | 10.7 | 11.1 | 12.0 | 18.4 | 12.6 | 14.0 | 11.2 | - | |
| 37 | 545885 | 260088 | 24.5 | 22.4 | 14.5 | 11.4 | 9.8 | 10.3 | 9.5 | 9.3 | 12.4 | 14.3 | 21.1 | 18.7 | 14.9 | 11.9 | - | |
| 38 | 545566 | 259579 | 36.1 | 34.7 | | 19.4 | 16.6 | 16.1 | 15.1 | | 19.9 | 24.0 | 30.8 | 20.8 | 23.4 | 18.7 | - | |
| 39 | 545710 | 258782 | 39.5 | 35.8 | 28.5 | 26.8 | 23.6 | 22.9 | 16.9 | 23.1 | 26.4 | 30.5 | 26.3 | 23.5 | 27.0 | 21.6 | - | |

| 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 (0.8) | Annual Mean: Distance Corrected to Nearest Exposure | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 545405 | 258521 | 38.6 | 42.1 | 29.6 | 32.5 | 28.5 | 30.9 | 27.0 | 28.0 | 29.8 | 33.3 | 20.8 | 27.4 | 30.7 | 24.6 | - | |
| 41 | 545162 | 258240 | 31.4 | 36.3 | 25.4 | 28.2 | 22.1 | 17.9 | 18.5 | 20.5 | 23.9 | 23.0 | 35.5 | 26.4 | 25.8 | 20.6 | - | |
| 42 | 544981 | 257890 | 27.1 | 26.8 | 20.6 | 17.4 | 12.5 | 13.7 | 13.5 | 14.7 | 18.0 | 20.1 | 26.2 | 14.5 | 18.8 | 15.0 | - | |
| 43 | 545271 | 257675 | 38.4 | 39.4 | 26.0 | 26.3 | 24.5 | 21.2 | 22.5 | | 27.0 | | | | 28.2 | 23.4 | - | |
| 44 | 545271 | 258271 | 27.5 | 25.5 | 21.4 | 17.5 | 18.5 | 15.2 | | 14.0 | 15.3 | 17.9 | 23.9 | 15.6 | 19.3 | 15.4 | - | |
| 45 | 545135 | 258391 | 40.4 | 34.8 | 33.1 | 36.0 | 23.3 | 19.4 | 20.3 | 21.5 | 29.5 | 29.6 | 29.9 | 31.0 | 29.1 | 23.3 | - | |
| 46 | 545549 | 258283 | 24.5 | 22.0 | 17.5 | 15.6 | 13.1 | | 11.8 | 11.8 | 12.6 | 18.1 | 33.7 | | 18.1 | 14.5 | - | |
| N47 | 545511 | 257837 | 38.9 | 43.7 | 38.4 | 37.3 | | | 30.4 | 29.5 | 34.2 | 34.6 | 38.8 | 27.6 | 35.3 | 28.3 | - | |
| N48 | 546214 | 259845 | 35.2 | 33.8 | 27.0 | 23.0 | 21.4 | 18.8 | 19.6 | 19.3 | 27.2 | 30.3 | 28.3 | 27.4 | 25.9 | 20.8 | - | |
| N49 | 546709 | 261054 | 17.2 | 33.3 | 28.1 | 22.1 | 18.7 | 19.7 | 17.6 | 18.1 | 23.1 | 29.4 | 25.6 | 22.1 | 22.9 | 18.3 | - | |
| 50 | 545854 | 257229 | 30.2 | 33.1 | 22.2 | 27.7 | 24.6 | 21.2 | 16.5 | 16.2 | 22.5 | 22.5 | 27.9 | 16.4 | 23.4 | 18.7 | - | |
| 51 | 544960 | 257152 | | 22.4 | 22.6 | 22.3 | 17.7 | 19.2 | 10.4 | 17.8 | 20.4 | | 22.0 | 17.7 | 19.3 | 15.4 | - | |
| 52 | 546019 | 257300 | 34.9 | 36.6 | 31.6 | 28.4 | 23.2 | 22.8 | 25.0 | 28.9 | 36.3 | 29.0 | 32.5 | 23.3 | 29.4 | 23.5 | - | |
| 53 | 545897 | 257325 | | | | | 19.4 | 17.1 | 15.4 | 19.0 | 22.7 | | 24.7 | 17.9 | 19.5 | 18.4 | - | |
| 54 | 546027 | 257683 | 27.3 | 28.1 | 19.5 | 17.4 | 14.2 | 12.1 | 12.6 | 13.9 | 18.0 | 19.8 | 23.6 | 13.2 | 18.3 | 14.6 | - | |
| N55 | 545504 | 261492 | 24.3 | | 18.2 | 19.4 | 16.5 | 14.8 | | 16.3 | | | | 16.3 | 18.0 | 15.9 | - | |
| 56 | 546602 | 258796 | 30.8 | 31.9 | 24.8 | 27.5 | | | 14.8 | 17.8 | 20.3 | 18.8 | 18.5 | 19.7 | 22.5 | 18.0 | - | |
| 57 | 546060 | 257389 | 35.6 | 35.1 | 32.1 | 25.9 | 20.1 | | 27.3 | 22.6 | 33.8 | 31.7 | 25.8 | 24.0 | 28.5 | 22.8 | - | |
| 58 | 546080 | 257092 | 40.2 | 53.6 | 44.8 | | 28.5 | 22.4 | 27.7 | | | | 30.3 | 27.0 | 34.3 | 26.3 | - | |
| 59 | 548858 | 257162 | 26.8 | 29.0 | 17.1 | 15.8 | 13.2 | | 10.3 | 10.9 | 14.6 | 17.9 | | 14.0 | 17.0 | 13.6 | - | |
| 60 | 547917 | 258942 | 13.3 | 34.0 | 26.7 | 21.5 | 20.2 | 19.2 | 18.8 | 19.7 | 19.0 | 26.3 | 28.9 | 15.1 | 21.9 | 17.5 | - | |

| 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 (0.8) | Annual Mean: Distance Corrected to Nearest Exposure | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 61 | 546341 | 258882 | 44.8 | 40.8 | 35.4 | 32.6 | 25.1 | 30.6 | 22.7 | 28.8 | 38.4 | 41.5 | 32.4 | 31.4 | 33.7 | 27.0 | - | |
| 62 | 547181 | 257566 | 16.9 | 28.8 | 25.6 | 21.2 | 16.8 | 16.0 | 15.8 | 16.0 | 20.8 | 24.4 | 15.1 | | 19.8 | 15.8 | - | |
| 63 | 546177 | 257309 | 26.2 | 43.7 | 36.0 | 25.8 | 21.2 | 23.1 | 23.3 | 24.1 | 27.2 | 24.9 | 33.2 | | 28.1 | 22.5 | - | |
| 64 | 544952 | 258856 | 27.2 | 30.9 | | 18.9 | 14.8 | 15.8 | 15.4 | 14.1 | 13.7 | 21.0 | 26.7 | | 19.9 | 15.9 | - | |
| 65 | 545896 | 257025 | 27.3 | 33.2 | 25.0 | 21.7 | 26.7 | | 35.1 | | | 20.6 | 22.4 | 21.0 | 25.9 | 20.7 | - | |
| 66 | 544614 | 254646 | 38.8 | 39.1 | 32.4 | 27.6 | 24.6 | 26.5 | 25.1 | 23.1 | 29.3 | 30.2 | 35.7 | 26.9 | 29.9 | 24.0 | - | |
| N67 | 546246 | 257598 | | | | | 14.0 | | 12.7 | 12.1 | 15.1 | 18.5 | 22.1 | 15.0 | 15.6 | 13.6 | - | |
| 68 | 545211 | 254217 | 25.9 | 30.2 | 16.9 | 17.6 | 14.8 | 11.9 | 17.1 | 11.3 | 15.2 | 20.7 | 23.3 | 14.7 | 18.3 | 14.6 | - | |
| 69 | 546854 | 255405 | 31.7 | 34.1 | 24.7 | 21.3 | 17.0 | 17.6 | 16.5 | 18.2 | 21.8 | 21.0 | 25.5 | 23.2 | 22.7 | 18.2 | - | |
| 70 | 546693 | 255379 | 33.8 | 32.0 | 23.3 | 19.1 | 18.6 | 18.3 | 16.1 | 17.6 | 21.6 | 21.1 | 24.8 | 17.3 | 22.0 | 17.6 | - | |
| 71 | 545245 | 256860 | 30.0 | 33.0 | 18.2 | 25.0 | | | 18.3 | 21.8 | 26.0 | 19.7 | 19.6 | 15.9 | 22.8 | 18.2 | - | |
| 72 | 546055 | 259486 | 28.4 | 31.2 | | 25.4 | 20.3 | 20.3 | 16.1 | 16.3 | 22.9 | 23.7 | 22.0 | 17.6 | - | - | - | Triplicate Site with 72, 73 and 74 - Annual data provided for 74 only |
| 73 | 546055 | 259486 | 31.6 | 33.3 | 19.1 | 26.1 | 23.4 | 19.7 | 15.0 | 14.3 | 20.7 | 19.0 | 20.7 | 18.5 | - | - | - | Triplicate Site with 72, 73 and 74 - Annual data provided for 74 only |
| 74 | 546055 | 259486 | 31.3 | 30.4 | 21.8 | 24.2 | 22.3 | 19.4 | 13.3 | 16.3 | 22.2 | 20.7 | 25.2 | 14.8 | 21.9 | 17.5 | - | Triplicate Site with 72, 73 and 74 - Annual data provided for 74 only |

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

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

☒ **Local bias adjustment factor used.**

☐ **National bias adjustment factor used.**

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

☒ **Cambridge City Council confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**.

**Notes:**

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

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

See Appendix C for details on bias adjustment and annualisation.

# Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

## New or Changed Sources Identified Within Cambridge City During 2023

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

## Additional Air Quality Works Undertaken by Cambridge City Council During 2023

Diffusion Tube Wind Cap Project

Nitrogen dioxide levels saw a marked decrease during the COVID 19 lockdowns, and since the return to 'normal' have remained well below pre COVID levels. In parallel to this we have seen a greater variation in the diffusion tube results than compared with the automatic monitoring.

Whilst the reduced levels of $NO_2$ can partially be explained by changes in behaviour, levels have remained lower than expected most notably due to increasing traffic levels.

We are undertaking a small wind cap project over a three year period with funding from Cambridgeshire County Council to investigate whether the more unsettled windier weather is having a significant impact on the diffusion tube results. Data collection began in June 2023 at 9 locations (triplicate tubes at one site) representing a cross section of tube classifications including rural, urban background, roadside, kerbside & suburban. We hope to understand whether the windier climate is having an effect on diffusion tube readings in Cambridge or whether nitrogen dioxide levels are actually improving due to improvements in the transport fleet, changes in the travel patterns of residents and business following the pandemic and increases in active travel.

## QA/QC of Diffusion Tube Monitoring

Socotec UK Ltd supply and analyse the nitrogen dioxide tubes for Cambridge City Council. The tubes are prepared by spiking acetone: triethanolamine (50:50) onto the grids prior to

being assembled. The tubes are desorbed with distilled water and the extract is analysed using a segmented flow auto-analyser with ultraviolet detection. Socotec UK Ltd, Didcot is one of the laboratories that follows the AIR PT inter-comparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes; SOCOTEC currently holds the highest rank of a **Satisfactory** laboratory.

Exposure periods for the diffusion tubes are those of the UK Nitrogen Dioxide Diffusion Tube Network run by National Physical Laboratory, with the tubes being changed every four or five weeks.

QA/QC procedures are as detailed in the UK $NO_2$ Diffusion Tube Network Instruction Manual. Some diffusion tube data were rejected from the dataset in line with guidance. Low concentrations are rare at urban background or roadside sites and are likely to result from an analytical problem or a faulty tube and therefore are rejected, particularly if they are an isolated occurrence. High concentrations are included unless there is a reason to reject them.

Monitoring was completed in adherence with the Diffusion Tube Monitoring Calendar in 2023.

## Diffusion Tube Annualisation

### Table C.1 a – Annualisation Summary (concentrations presented in µg/m$^3$) – Diffusion Tubes

Six Tubes required annualisation Tube number 67 (Devonshire Road) is a new tube for 2023 and was not installed until April with first results in May. The remaining tubes 13 (East Road), 42 (Lensfield Road), 53 (Station Road West), N55 (Cherry Hinton Road 2), and 58 (Station Place) had data capture of either 58.3% or 66.7%. The Diffusion Tube Data Entry System template was used to annualise the tube.

| Site ID | Annualisation Factor Boreham Wood Meadow Park | Annualisation Factor Wicken Fen | Annualisation Factor Norwich Laken Field (<85%) | Annualisation Factor Northampton Spring Park | Average Annualisation Factor | Raw Data Annual Mean | Annualised Annual Mean |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 13 | 0.9941 | 0.9963 | | 0.9890 | 0.9931 | 29.5 | 29.3 |

| Site ID | Annualisation Factor Boreham Wood Meadow Park | Annualisation Factor Wicken Fen | Annualisation Factor Norwich Laken Field (<85%) | Annualisation Factor Northampton Spring Park | Average Annualisation Factor | Raw Data Annual Mean | Annualised Annual Mean |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 43 | 1.0319 | 0.9979 | | 1.0834 | 1.0377 | 28.2 | 29.2 |
| 53 | 1.1859 | 1.2230 | | 1.1443 | 1.1844 | 19.5 | 23.0 |
| N55 | 1.0960 | 1.0718 | | 1.1513 | 1.1063 | 18.0 | 19.9 |
| 58 | 0.9639 | 0.9364 | | 0.9721 | 0.9575 | 34.3 | 32.9 |
| N67 | 1.0888 | 1.1618 | | 1.0208 | 1.0904 | 15.6 | 17.1 |

## 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.

Cambridge City council have applied a local bias adjustment factor of 0.80 to the 2023 monitoring data. A summary of bias adjustment factors used by Cambridge City council over the past five years is presented in Table C.2.

Cambridge City Council has always applied a local bias adjustment factor, with the exception of 2022 due to insufficient data capture from the triplicate tube. Historically this was co-located with the Gonville Place (CM1) automatic Monitor. This was removed in May 2022 and has only recently (March 2024) become operational again. The Triplicate tube was co-located with Montague Road (CM2) in 2023. Data capture was 100%. We have opted to return to the use of a Local Bias adjustment Figure as the use of local data is felt to be more representative of the local situation.

## Table C.2 – Bias Adjustment Factor

| Monitoring Year | Local or National | If National, Version of National Spreadsheet | Adjustment Factor |
|---|---|---|---|
| **2023** | Local | - | 0.80 |
| **2022** | National | 03/23 | 0.76 |
| **2021** | Local | - | 0.67 |
| **2020** | Local | - | 0.68 |
| **2019** | Local | - | 0.68 |

## Table C.3 – Local Bias Adjustment Calculation

| | Local Bias Adjustment Input 1 | Local Bias Adjustment Input 2 | Local Bias Adjustment Input 3 | Local Bias Adjustment Input 4 | Local Bias Adjustment Input 5 |
|---|---|---|---|---|---|
| **Periods used to calculate bias** | 12 | | | | |
| **Bias Factor A** | 0.8 | | | | |
| **Bias Factor B** | 25% | | | | |
| **Diffusion Tube Mean (µg/m$^3$)** | 22 | | | | |
| **Mean CV (Precision)** | 7 | | | | |
| **Automatic Mean (µg/m$^3$)** | 18 | | | | |
| **Data Capture** | 92% | | | | |
| **Adjusted Tube Mean (µg/m$^3$)** | 18 | | | | |

**Notes:**

A single local bias adjustment factor has been used to bias adjust the 2023 diffusion tube results.

## $NO_2$ 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.

No diffusion tube $NO_2$ monitoring locations within Cambridge City Council required distance correction during 2023.

## QA/QC of Automatic Monitoring

Cambridge City Council had four continuous monitors operating during 2023; all are at roadside sites.

Regent Street (CM5) is located within the office of Cambridge City Council in Mandela House. It is part of the National Automatic Urban Network (AURN) on behalf of DEFRA and has been in place since 1993.

Montague (CM2) was replaced in March 2023 at the same location and now monitors Nitrogen dioxide, $PM_{10}$ and $PM_{2.5}$. Both Newmarket Road and Parker Street are still to be replaced.

We had to remove the Gonville Place (CM1) monitor in May 2022 due to redevelopment of the site and it has proven difficult to secure a new site on this busy junction. The New Gonville Place monitor was operational as of March 2024.

Each of the sites is calibrated and maintained every 2 (Regent street), 3 (Parker Street and Newmarket Road) or 4 (Montague Road) weeks by the Local Site Operator (LSO), Cambridge City Council. The sites are serviced every six months. Our Equipment Support Unit (ESU) services are provided by Matts Monitors. The sites are audited by Ricardo Energy & Environment either as part of the AURN or through the 'Calibration Club'. All data is collated and ratified externally by Ricardo Energy & Environment. The results are ratified and returned as hourly sequential data.

Both live and historical data is available at UK Air (Home - Defra, UK) for the Regent Street Monitor (Cambridge Roadside) and Air quality England ( www.airqualityengland.co.uk) for the other sites.

### $PM_{10}$ and $PM_{2.5}$ Monitoring Adjustment

During 2023 Particulate Matter Monitoring was undertaken at three sites within Cambridge:

- **Parker Street (CM4)** – $PM_{10}$ monitoring is undertaken using a Beta Attenuation Monitor (BAM). The monitor has had the BAM Gravimetric Equivalent correction factor applied by the QA/QC contractor.
- **Newmarket Road (CM3)** – $PM_{2.5}$ monitoring is undertaken at this site. The $PM_{2.5}$ monitor at Newmarket Road has had the conventional TEOM Gravimetric Equivalent correction factor applied by the QA/QC contractor.

- **Montague Road (CM2)** – Both PM10 and PM2.5 monitoring is undertaken at this site using Dynamics Measurement System (TEOM-FDMS) which was installed at this site on 28th March 2023. The FDMS1405DF has been declared equivalent to the reference method. And can be used without the need for correction for slope and/or intercept.

## Automatic Monitoring Annualisation

The $PM_{2.5}$ data for Montague Road (CM1) required annualisation due to low data capture of 58.90%. The data was annualised against four sites, all of which were either Rural or Urban Background sites with data capture above 85%.

**Table C.4 b – Annualisation Summary (concentrations presented in µg/m$^3$) – $PM_{2.5}$**

| Site ID | Annualisation Factor Boreham Wood Meadow Park | Annualisation Factor Wicken Fen | Annualisation Factor Norwich Lakenfield | Annualisation Factor Northampton Spring Park | Average Annualisation Factor | Raw Data Annual Mean | Annualised Annual Mean |
|---|---|---|---|---|---|---|---|
| CM1 | 1.05 | 1.06 | 1.04 | 1.05 | 1.05 | 6.86 | 7.20 |

## $NO_2$ Fall-off with Distance from the Road

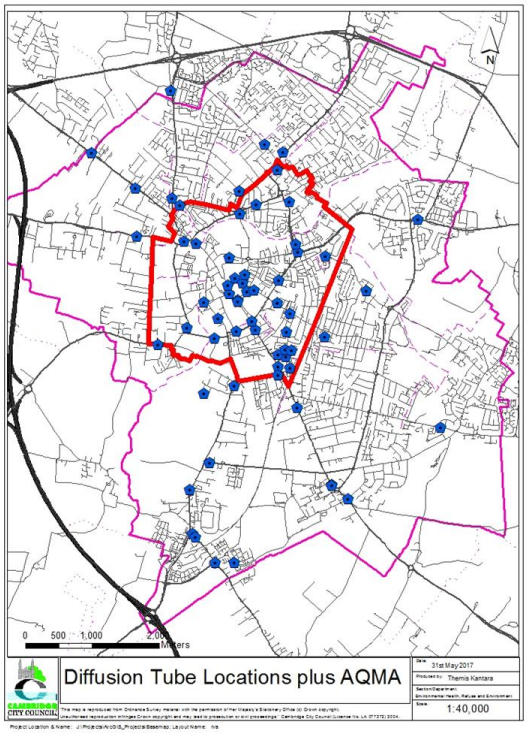
Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the $NO_2$ concentration at the nearest location relevant for exposure has been estimated using the $NO_2$ fall-off with distance calculator available on the LAQM Support website. Where appropriate, automatic annual mean $NO_2$ concentrations corrected for distance are presented in Table A.3.

No automatic $NO_2$ monitoring locations within Cambridge City Council required distance correction during 2023.

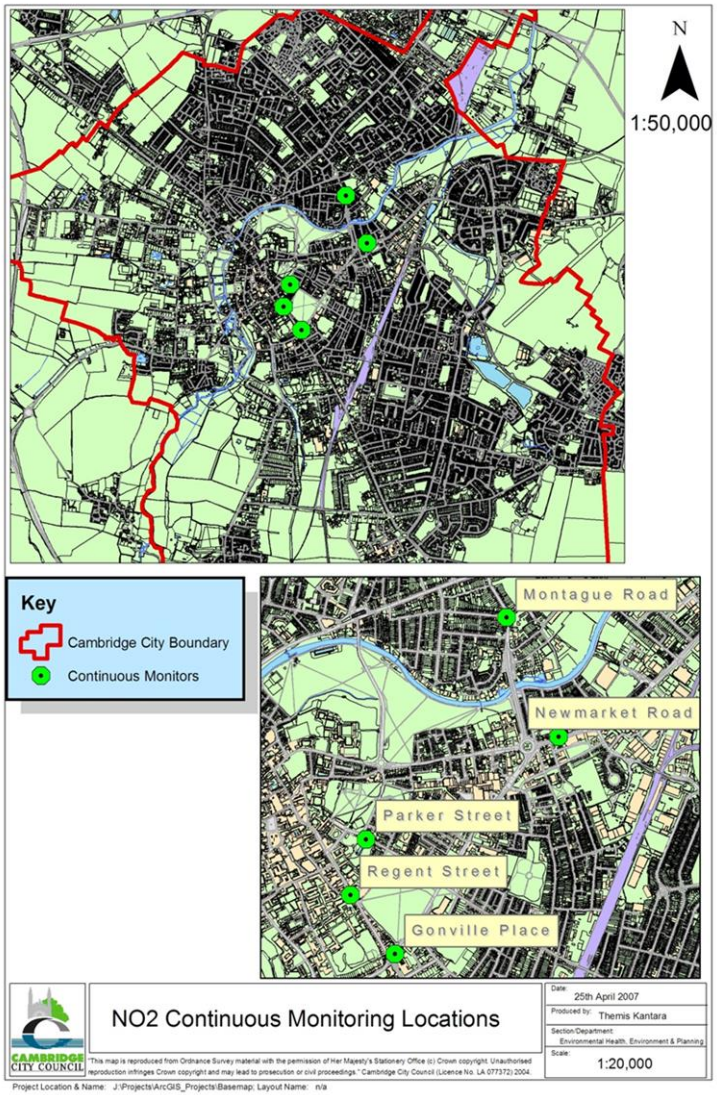
# Appendix D: Map(s) of Monitoring Locations and AQMAs

## Figure D.1 – Map of Non-Automatic Monitoring Sites

The Cambridge City Council website has a map showing the locations of the monitoring stations in Cambridge which can be zoomed in and out to discover the specific locations. A click on the icon will provide the name and number of each site.

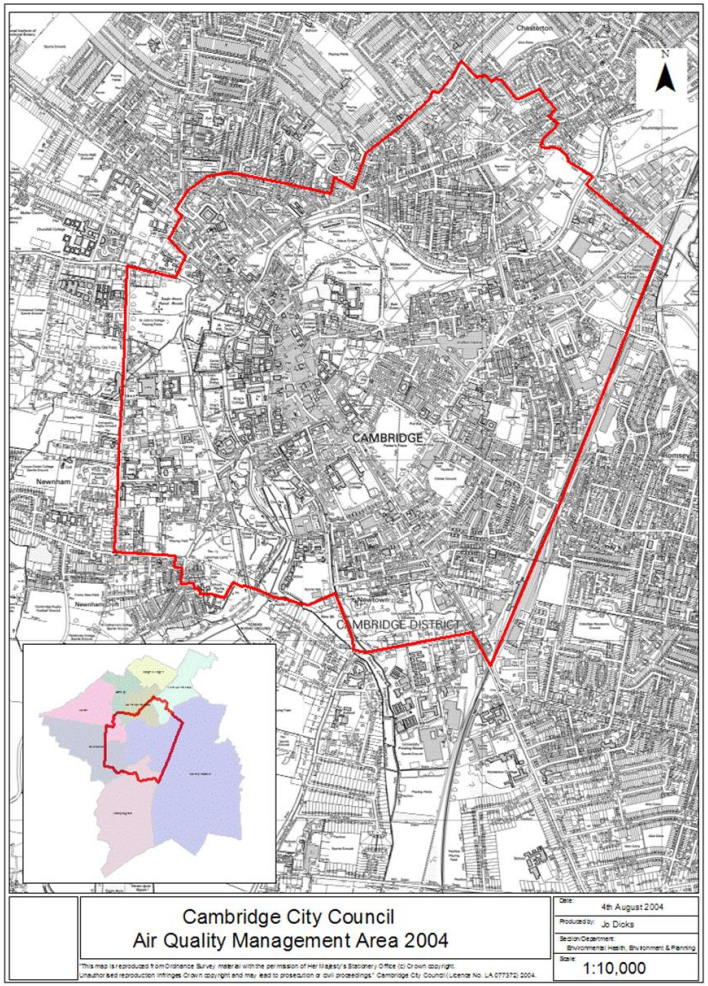


## Figure D.2 – Map of Automatic Monitoring Sites



## Figure D.3 – Map of Air Quality Management Area

The Cambridge City Council website has a map of the Air Quality Management Area.



# Appendix E: Summary of Air Quality Objectives in England

### Table E.1 – Air Quality Objectives in England[10]

| 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 |

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

# Glossary of Terms

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


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