

# Fenland District Council

2025 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management, as amended by the Environment Act 2021

Date: December 2025

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## **Local Responsibilities and Commitment**

This ASR was prepared by the Environmental Health Department of Fenland District Council.

This ASR has been approved by:

This ASR has been signed off by a Director of Public Health.

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## **Executive Summary: Air Quality in Our Area**

## **Air Quality in Fenland District Council**

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Low-income communities are also disproportionately impacted by poor air quality, exacerbating health and social inequalities.

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO <sub>2</sub> )	Nitrogen dioxide is a gas which is generally emitted from high- temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO <sub>2</sub> )	Sulphur dioxide (SO <sub>2</sub> ) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM <sub>10</sub> and PM <sub>2.5</sub> )	Particulate matter is everything in the air that is not a gas.  Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes.  PM <sub>10</sub> refers to particles under 10 micrometres. Fine particulate matter or PM <sub>2.5</sub> are particles under 2.5 micrometres.

## **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. Fenland District council has completed a number of key measures over the reporting year of 2024.

In 2023, a public consultation was undertaken to review the local NO<sub>2</sub> diffusion tube network. Residents were invited to suggest sites where they felt regular exposure to traffic pollution to help ensure testing is being carried out at the most at-risk areas. This allowed members of the community to have their say on where monitoring tubes should be located and lead to positive press coverage encouraging residents to take part. The tube network was reviewed using this information and data from previous years to relocate a number of tubes. These changes were implemented in January 2024.

The 'March Town Centre Transformation through Future High Streets Fund' is now complete and was shortlisted for 'Exemplary Approach to Active Travel & Public Space' at the National Transport Awards 2025. Further information can be found on the National Transport Awards website. The project was also highly commended for a national 'Chartered Institution of Highways and Transportation (CIHT) Creating Better Places Award', achieving second place.

Fenland District Council is prioritising the completion of the AQAP and reviewing existing AQMAs over the next reporting year. This will be done once a decision has been made on major developments in these areas that have the potential to impact air quality. Other measures expected to be completed are a new sensor on the A605 relief road funded through a project working with Cambridgeshire County Council and securing Net Zero Villages Grant funding from the Cambridgeshire and Peterborough Combined Authority to support rural communities with capital projects that deliver reductions in greenhouse gas emissions.

### **Conclusions and Priorities**

The 2024 air quality monitoring data shows that air quality in Fenland District Council continues to meet the national objectives for NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and SO<sub>2</sub> at all monitoring locations.

NO<sub>2</sub> annual mean concentrations were typically lower than those recorded in 2023, with an average reduction of 0.9  $\mu$ g/m³ across all sites. A small number of sites recorded increases between 2023 and 2024, with the most significant increase being 11.0  $\mu$ g/m³ at site S17 (Weasenham Lane/Cromwell Road, Wisbech), though the site remains well in compliance with national air quality objectives for annual mean NO<sub>2</sub> concentrations at 25.2  $\mu$ g/m³ in 2024.

The greatest decrease was 8.7  $\mu$ g/m³ at site S19 (Broad Street, March) from 24.7  $\mu$ g/m³ to 16.0  $\mu$ g/m³. PM<sub>10</sub> and PM<sub>2.5</sub> annual mean concentrations also saw a decrease in 2024

compared to 2023 levels.  $PM_{10}$  at the FEN001 site (Hallcroft Road) dropped by 2.7  $\mu g/m^3$ , and  $PM_{2.5}$  at the same site dropped by 1.8  $\mu g/m^3$ .

Monitoring results within all AQMAs continue to meet relevant Air Quality Objectives. Three AQMAs in Wisbech (No. 1, 2 and 3) have been compliant for 15 years, and Whittlesey AQMA has been compliant for 16 years. Fenland District Council is in the process of reviewing the suitability of revoking all AQMAs with consideration given to the likely impact that new developments will also have in the district.

### How to get Involved

Members of the public can get involved to improve local air quality by participating in active travel, such as walking, cycling, using public transport and car sharing in order to reduce the numbers of single car journeys made. Other methods include switching to energy efficient goods, reducing solid fuel burning and choosing low emission vehicles.

Fenland encourages a buy locally scheme and promotes each of the four market towns that host local markets including greengrocers, butchers, and fishmongers.

Fenland Transport and Access Group published the Walking, Cycling and Mobility Aid Strategy. This included increasing the number of walking and cycling routes between the market towns. More information can be found on our website at <a href="Community Transport">Community Transport</a> - Fenland District Council.

Fenland is part of the Action on Energy Retrofit partnership supporting households access grants to install energy efficiency improvements and low carbon heating. For more information see the website at Action on Energy grant scheme. For other schemes and General information on sustainable living and energy saving ideas can be found on our energy page at Energy - Fenland District Council or the Energy Saving Trust website: <a href="https://energysavingtrust.org.uk/">https://energysavingtrust.org.uk/</a>.

Information on air quality in Fenland can be found on our website. Fenland publish all their monthly NO<sub>2</sub> data and monitoring reports online at; <u>Air quality - Fenland District Council</u>. Further information on Air Quality and how to improve it can be found on the Clean Air Hub website: <a href="https://www.cleanairhub.org.uk/">https://www.cleanairhub.org.uk/</a>.

## **Table of Contents**

L	.ocal Re	sponsibilities and Commitment	i
Ex	ecutive	Summary: Air Quality in Our Area	ii
A	ir Quali	ty in Fenland District Council	ii
A	Actions t	o Improve Air Quality	ii
C	Conclusi	ons and Priorities	iii
H	low to g	et Involved	iv
1	Local	Air Quality Management	1
2	Actio	ns to Improve Air Quality	2
2.1	Air	Quality Management Areas	2
2.2 Co	Pro	gress and Impact of Measures to address Air Quality in Fenland District	t _
2.3 Co	_	2.5 – Local Authority Approach to Reducing Emissions and/or ations	10
3 Na		uality Monitoring Data and Comparison with Air Quality Objectives and Compliance	11
3.1	Sun	nmary of Monitoring Undertaken	11
	3.1.1	Automatic Monitoring Sites	11
	3.1.2	Non-Automatic Monitoring Sites	11
3.2	Indi	vidual Pollutants	12
	3.2.1	Nitrogen Dioxide (NO <sub>2</sub> )	12
	3.2.2	Particulate Matter (PM <sub>10</sub> )	13
	3.2.3	Particulate Matter (PM <sub>2.5</sub> )	13
	3.2.4	Sulphur Dioxide (SO <sub>2</sub> )	14
Αр	pendix	A: Monitoring Results	15
Аp	pendix	B: Full Monthly Diffusion Tube Results for 2024	40
Ар	pendix	C: Supporting Technical Information / Air Quality Monitoring Data QA/0	
N	New or C	Changed Sources Identified Within Fenland District Council During 2024	
		al Air Quality Works Undertaken by Fenland District Council During 2024	
		of Diffusion Tube Monitoring	
		on Tube Annualisation	
		on Tube Bias Adjustment Factors	
		all-off with Distance from the Road	
C		of Automatic Monitoring	
		nd PM <sub>2.5</sub> Monitoring Adjustment	
		atic Monitoring Annualisation	
	NO <sub>2</sub> Fa	all-off with Distance from the Road	48
Δn	pendix	D: Map(s) of Monitoring Locations and AQMAs	49

Appendix E: EarthSense Zephyr locations & monitoring results	59
Appendix F: Summary of Air Quality Objectives in England	63
Glossary of Terms	64
References	65

## **Figures**

Figure A. 1 – Trends in Annual Mean NO <sub>2</sub> Concentrations – AQMA Wisbech No.1	25
Figure A. 2 - Trends in Annual Mean NO <sub>2</sub> Concentrations – AQMA Wisbech No.2	26
Figure A. 3 - Trends in Annual Mean NO <sub>2</sub> Concentrations – AQMA Wisbech No.3	27
Figure A. 4 - Trends in Annual Mean NO <sub>2</sub> Concentrations – Whittlesey	28
Figure A. 5 - Trends in Annual Mean NO <sub>2</sub> Concentrations – Wisbech	29
Figure A. 6 - Trends in Annual Mean NO <sub>2</sub> Concentrations – March	30
Figure A. 7 - Trends in Annual Mean NO <sub>2</sub> Concentrations – A47	31
Figure A. 8 - Trends in Annual Mean NO <sub>2</sub> Concentrations – Chatteris	32
Figure A. 9 – Trends in Annual Mean PM <sub>10</sub> Concentrations	35
Figure A. 10 – Trends in Annual Mean PM <sub>2.5</sub> Concentrations	38
Figure D. 1 – Map showing all monitoring locations and AQMAs within the Fenland Dist	rict
boundary	49
Figure D. 2 – Map showing monitoring locations in Whittlesey	50
Figure D. 3 – Map showing monitoring locations in Wisbech	51
Figure A. 1 – Trends in Annual Mean NO₂ Concentrations – AQMA Wisbech No.1 Figure A. 2 - Trends in Annual Mean NO₂ Concentrations – AQMA Wisbech No.2 Figure A. 3 - Trends in Annual Mean NO₂ Concentrations – AQMA Wisbech No.3 Figure A. 4 - Trends in Annual Mean NO₂ Concentrations – Whittlesey Figure A. 5 - Trends in Annual Mean NO₂ Concentrations – Wisbech Figure A. 6 - Trends in Annual Mean NO₂ Concentrations – Wisbech Figure A. 7 - Trends in Annual Mean NO₂ Concentrations – March Figure A. 7 - Trends in Annual Mean NO₂ Concentrations – A47 Figure A. 8 - Trends in Annual Mean NO₂ Concentrations – Chatteris Figure A. 9 – Trends in Annual Mean PM₂ Concentrations Figure D. 1 – Map showing all monitoring locations and AQMAs within the Fenland Distributional stream of the properties of the propertie	
Figure D. 5 – Map showing monitoring locations on the A47 (S9 and S44)	53
Figure D. 6 – Map showing monitoring locations in Chatteris	54
Figure D. 7 – Map showing Whittlesey AQMA No. 1 (SO <sub>2</sub> )	55
Figure D. 8 – Map showing Wisbech AQMA No. 1 (SO <sub>2</sub> )	56
Figure D. 9 – Map showing Wisbech AQMA No. 2 (PM <sub>10</sub> )	57
Figure D. 10 – Map showing Wisbech AQMA No. 3 (NO <sub>2</sub> )	58
Tables	
Table 2.1 – Declared Air Quality Management Areas	3
Table 2.2 – Progress on Measures to Improve Air Quality	8
Table A. 1 – Details of Automatic Monitoring Sites	15
Table A. 2 – Details of Non-Automatic Monitoring Sites	16
Table A. 3 – Annual Mean NO <sub>2</sub> Monitoring Results: Automatic Monitoring (μg/m³)	20
Table A. 4 – Annual Mean $NO_2$ Monitoring Results: Non-Automatic Monitoring ( $\mu g/m^3$ ).	21
Table A. $5 - 1$ -Hour Mean NO $_2$ Monitoring Results, Number of 1-Hour Means > $200 \mu g/$	$m^3$
	33

Table A. 6 – Annual Mean PM₁₀ Monitoring Results (µg/m³)	34
Table A. 7 – 24-Hour Mean PM $_{ m 10}$ Monitoring Results, Number of PM $_{ m 10}$ 24-Hour Means >	
50μg/m³	36
Table A. 8 – Annual Mean PM <sub>2.5</sub> Monitoring Results (µg/m³)	37
Table A. 9 – SO <sub>2</sub> 2024 Monitoring Results, Number of Relevant Instances	39
Table B.1 – NO <sub>2</sub> 2024 Diffusion Tube Results (µg/m³)	40
Table C. 1 - Annualisation Summary (concentrations presented in μg/m³)	44
Table C. 2 – Bias Adjustment Factor	45
Table C. 3 – Automatic $NO_2$ Annualisation Summary (concentrations presented in $\mu g/m^3$	
	47
Table C. 4 – Automatic PM $_{ m 10}$ Annualisation Summary (concentrations presented in $\mu g/m^2$	3
	48
Table C. 5 – Automatic PM $_{2.5}$ Annualisation Summary (concentrations presented in $\mu g/m$	1 <sup>3</sup>
	48
Table F 1 – Air Quality Objectives in England	63

## 1 Local Air Quality Management

This report provides an overview of air quality in Fenland District Council during 2024. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Fenland District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table F.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 Fenland District Council can be found in Table 2.1. The table presents a description of the four AQMAs that are currently designated within Fenland District Council. Appendix D provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs. The air quality objectives pertinent to the current AQMA designations are as follows:

- NO<sub>2</sub> annual mean;
- PM<sub>10</sub> 24-hour mean;
- SO<sub>2</sub> 15-minute mean

Fenland District Council is in the process of reviewing the suitability of revoking all AQMAs with consideration given to the likely impact that new developments will also have in the district. In 2024, work started to revoke AQMAs 1 & 2, and a public consultation period began in November 2024. Work on this has continued throughout 2025, but revocation has yet to be formalised.

Fenland has seen changes in sources of pollution, with several sources such as the brick pits in Whittlesey removed. At the same time, new developments have seen new sources being introduced from road transport and construction as well as the introduction of new receptors. Fenland are currently working with local industries and developments to conduct a new AQ modelling assessment for the AQMA for Whittlesey and establish the impact of a proposed new development for Wisbech. It is a possibility that these AQMAs will need to be re-established rather than revoked depending on the outcome of the modelling works being undertaken.

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
Whittlesey AQMA No. 1	01/09/2006	SO <sub>2</sub> 15 Minute Mean	Pedestrian transport routes west and northwest and an area of residential and public spaces to the east of Whittlesey brickworks.	NO	15-Minute Mean objective is likely to be breached based on modelling		16	Fenland District Council Air Quality Action Plan 2018	https://www.fenland. gov.uk/airquality
AQMA Wisbech No. 1	01/05/2001	SO <sub>2</sub> 15 Minute Mean	An area in central Wisbech surrounding the canning factory.	NO	Number of 15 minute mean concentration s >266 µg/m³ = 1300	Source of pollution removed	15	Fenland District Council Air Quality Action Plan 2018	https://www.fenland. gov.uk/airquality
AQMA Wisbech No. 2	01/05/2001	PM <sub>10</sub> 24 Hour Mean	An area in central Wisbech surrounding the canning factory.	NO	Number of daily means > 50 µg/m³ (gravimetric) = 38 (modelled)	Source of pollution removed	15	Fenland District Council Air Quality Action Plan 2018	https://www.fenland. gov.uk/airquality

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
AQMA Wisbech No. 3	01/05/2001	NO <sub>2</sub> Annual Mean	An area extending along the B198 Lynn Road between Freedom Bridge Roundabout and Mount Pleasant Road and along the A1101, from Sandylands, along Churchill Road to just past Westmead Avenue.	NO	40.9 μg/m³	22.5 μg/m³	15	Fenland District Council Air Quality Action Plan 2018	https://www.fenland. gov.uk/airquality

<sup>☑</sup> Fenland District Council confirm the information on UK-Air regarding their AQMA(s) is up to date.

<sup>☑</sup> Fenland District Council confirm that all current AQAPs have been submitted to Defra.

## 2.2 Progress and Impact of Measures to address Air Quality in Fenland District Council

Defra's appraisal of last year's ASR concluded the following:

- The Council should begin the revocation process on all four of their current AQMAs due to low concentrations and the removal of some pollution sources.
- In Table A.4, sites S19, S28 and S42 have a data capture of 0% for 2023.
   However, Table B.1 indicates that monitoring was available for some of the year.
   This should be updated.
- 3. Although not required, it is recommended that more than two continuous monitoring sites are used for annualisation purposes. LAQM.TG(22) guidance suggests that two-to-four sites are used.
- 4. Good detail has been provided on the QA/QC procedures of the automatic monitoring where appropriate.
- Clear maps highlighting the location of AQMAs have been provided. Maps
  highlighting the location of monitoring sites have also been provided, however
  the labels on these are difficult to read. These maps could be updated to be
  clearer.
- 6. The bias adjustment factor should be included in the column headers on Table B.1.
- 7. The Council have demonstrated their commitment to improving air quality within the District through concerns regarding new developments. This is welcomed.

  The Council could expand their monitoring network to locations close to these developments to ensure air quality is not negatively impacted by their operation.

As stated in Section 2.1, Fenland District Council is assessing the likely air quality impact of new developments within existing AQMAs before revocation is formalised.

Fenland District Council has taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. 8 measures are included within Table 2.2, with the type of measure and the progress Fenland District Council have made during the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in their respective Action Plans. Key completed measures are:

- Reviewing and expanding the Diffusion tube network with the Cambridgeshire & Peterborough Combined Authority (CPCA). Tubes were relocated in January 2024, and five new locations were added.
- The 'March Town Centre Transformation through Future High Streets Fund' is now complete and was shortlisted for 'Exemplary Approach to Active Travel & Public Space' at the National Transport Awards 2025. The project was also highly commended for a national Chartered Institution of Highways and Transportation Creating Better Places Award, achieving second place.
- The installation of an AQ sensor monitor in Whittlesey, monitoring NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. Informing residents using online live data and participating in a multiagency action group to manage overlapping control and regulation of multiple industrial processes and land uses that impact the air quality in the town.
- Creating air quality standard conditions to use when consulting on planning and development applications, to ensure a thorough and consistent approach is taken.
- Consultation with local residents to decide on the new location on NO<sub>2</sub> diffusion tubes for 2024.
- Improvements to FDC's waste management fleet by upgrading to Euro 6 engines and electrically-powered -bin lift. These are now implemented on FDC refuse, recycling and garden waste fleet and they offer better fuel efficiency and reductions in emissions.
- Continued work contributing to the application process for a Development Consent Order and Environmental Permit for an Energy from Waste development in the Wisbech area.

Fenland District Council expects the following measures to be completed over the course of the next reporting year:

- New sensor on the A605 relief road funded through a project working with Cambridgeshire County Council for transport related monitoring.
- Council wide Bike Month Challenge, with points and prizes available for tracking bike riding with the 'Love to Ride' app.
- In December 2024 the council accessed Net Zero Villages Grant funding from the Cambridgeshire and Peterborough Combined Authority. The project aims to support rural communities with capital projects that deliver reductions in greenhouse gas

emissions, including projects for solar energy systems at community centers and replacement of parish hall roof with a 'green roof'.

Fenland District Council's priorities for the coming year are to complete the AQAP and review the existing AQMAs with a view to revoke or vary these. This will be done once a decision has been made on major developments in these areas that have the potential to impact air quality.

Fenland District Council worked to implement these measures in partnership with the following stakeholders during 2024:

- Cambridgeshire County Council, Norfolk County Council, Borough Council Kings
   Lynn and West Norfolk and Peterborough City Council.
- The Highways Authority.
- Environment Agency.
- Cambridgeshire & Peterborough Combined Authority.

The principal challenges and barriers to implementation that Fenland District Council anticipates facing are in relation to funding, staff resources, and the pressures on existing air quality from the introduction of new development within the district.

Fenland District Council anticipates that the measures stated above and in Table 2.2 will achieve continued compliance in all AQMAs.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Improve traffic management at key junctions - Wisbech Access Strategy	Traffic Management	UTC, Congestion management, traffic reduction	2016	2040	Cambridgeshire & Peterborough Combined Authority (CPCA) Cambridgeshire County Council (CCC)	Government Growth Fund & CPCA	Partially Funded	> £10 million	Planning	Reduced vehicle emissions / Maintain levels below standards	Reduced congestion and increased average speeds through AQMA	There are three phases to this scheme. The initial short-term phase is fully designed and ready to construct. This will commence when construction funding is secured and made available. A range of opportunities are being explored to secure the funding needed.	Funding for infrastructure project. Local development increasing demands on current networks
2	Develop Air Quality Action Plan	Policy Guidance and Development	Control Air Quality Planning and Policy Guidance	2018	2026	Local Authority Environmental Health	FDC	Funded	< £10k	Planning	Maintain levels below standards	Update Plan	Review Air Quality Action Plan and publish online. This is now aimed for completion in 2026.	Resources and skills available, costs of outsourcing.
3	Transport & Access Group	Promoting Travel Alternatives	Promotion of walking	2016	On-going	FDC	FDC & Hereward Community Rail Partnership	Partially Funded	£10k - 50k	Implementation	Reduced vehicle emissions / Maintain levels below standards	Reduced vehicle use and increased use of public transport / Active Travel	53 community champions have been provided with transport training to enable them to assist others access transport and help promote walking and cycling. In late 2020 FDC approved the development of a Walking, Cycling and Mobility Strategy to support infrastructure for non-motorised transport. This strategy was adopted in 2022.  Work is ongoing to source funding for walking and cycling improvements recommended in the strategy. In 2024 funding was secured to complete a feasibility study looking at measures for the National Cycle Network NCN63 between Whittlesea and Peterborough. An initial phase of work to improve the signing was completed in 2025. Conversations are ongoing about securing additional funding for 2026 to deliver the phase 1 of the feasibility study including upgrades to surfacing and solar stud lighting.	Funding
4	Improve traffic management - March Area Transport Study	Traffic Management	UTC, Congestion management, traffic reduction	2017	2026	Cambridgeshire & Peterborough Combined Authority (CPCA) Cambridgeshire County Council (CCC)	CPCA	Partially Funded	> £10 million	Implementation	Reduced vehicle emissions / Maintain levels below standards	Reduced congestion, Junction improvements, walking and cycling strategy, town centre proposals, new link road	Full Business Case 1 (FBC1) – March High Street/Broad Street is in construction and on target to complete in October 2024. The FB2 schemes at Twenty Foot Road, Peas Hill Roundabout, Hostmoor and St Peters Road have now all completed their detailed design phase. An additional £7 million pound has now been drawn down towards the project. This will see the FBC2 schemes at Twenty Foot Road and St Peters Road procedure to construction. The first phase up to March 2025 being approvals, land acquisition and construction procurement. Construction will commence after this time. The remaining funding will bring forward FBC3 which is the	The project is progressing well, but further funding is needed

LAQM Annual Status Report 2025

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
													detailed design phase of the Northern Industrial link road.	
5	Improve traffic management – March Town Centre Transformation through Future High Streets Fund	Traffic Management	UTC, Congestion management, traffic reduction	2019	2024	FDC, Hatch Regeneris	Future High Streets Fund & CPCA	Funded	> £10 million	Completed	Reduced vehicle emissions / Maintain levels below standards	Part pedestrianisation of key congested areas (Broad Street), reduced congestion, junction improvements	This project is now complete and operational. Furthermore, it has been shortlisted for 'Exemplary Approach to Active Travel & Public Space' at the National Transport Awards 2025. the project was also highly commended for a national Chartered Institution of Highways and Transportation Creating Better Places Award, achieving second place.	
6	Consideration of Air Quality Impacts when providing comments on planning applications within an AQMA or where an AQMA could be impacted or created.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	On-going	On-going	Local Authority Environmental Health	FDC	Funded	£10k - 50k	Implementation	Maintain levels below standards	Planning response time	On-going daily when consulting on planning applications. In 2023 work was undertaken to develop a standard planning conditions document, that includes standard conditions for air quality to ensure consistency across the service. This is in the last stages and should be implemented from 2024 onwards.	Resources
7	Review and Expand Diffusion Tube network	Policy Guidance and Development Control	Other policy	2019	2024	Local Authority Environmental Health	FDC	Funded	< £10k	Completed	Provide NO2 pollution data	Diffusion tube reviewed and expanded	Community engagement and a consultation period was completed with local residents at the end of 2023, with suggestions of tube locations being considered. Tubes were relocated January 2024, and 5 new locations were added.	Protect completed
8	Treescapes fund	Other	Other	2018	2024	FDC, Peterborough Environment City Trust, Forestry Commision, Groundworks East	Forestry Commision	Funded	£10k - 50k	Completed	Maintain levels below standards	Number of trees planted	Benwick Street Pride was provided £600 worth of ferns for stumpery creation	Public engagement

LAQM Annual Status Report 2025

# 2.3 PM<sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy<sup>1</sup>, local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter (PM<sub>2.5</sub>)). There is clear evidence that PM<sub>2.5</sub> (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Fenland District Council is taking the following measures to address PM<sub>2.5</sub>:

- Installation of five air quality sensors in March and Wisbech that monitor PM<sub>2.5</sub>.
- Participation in a multi authority initiatives across Cambridgeshire and
  Peterborough to provide members of the public with information on the impacts of
  solid fuel burning and bonfires on air quality and particulate matter through the Joint
  Cambridgeshire and Peterborough Pollution Group task force.
- Continuing to consult on planning applications to recommend planning conditions to control the introduction of sources of air quality emissions. This will include requirements for Construction Management Plans, in order to manage dust from construction and demolition activities, and Traffic Management data to determine the impact on local air quality management. For large developments Health Impact Assessments will be requested.
- To support the Action on Energy campaigns to support residents on solid fuels to move to more sustainable and efficient fuels.
- To use the Environmental Permitting regime to ensure that industrial processes are working towards best available technology and monitoring the rise in use of smallscale incinerators in manufacturing premises.

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<sup>&</sup>lt;sup>1</sup> Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

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

This section sets out the monitoring undertaken within 2024 by Fenland District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2020 and 2024 to allow monitoring trends to be identified and discussed.

## 3.1 Summary of Monitoring Undertaken

#### 3.1.1 Automatic Monitoring Sites

Fenland District Council undertook automatic (continuous) monitoring at one site during 2024. In addition to this, as part of a Part A Environmental Permit at Whittlesey brick pits, two 'MCerts' continuous monitors are maintained, and a yearly summary of air quality objectives is provided by the Environment Agency.

Monitoring was also undertaken by the Cambridgeshire and Peterborough Combined Authority (CPCA) at sites in March and Wisbech.

Table A.1 in Appendix A shows the details of the automatic monitoring sites. The <u>Hallcroft</u> Road (sensor) <u>Latest Data - Air Quality monitoring service</u> page presents automatic monitoring results for Fenland District Council.

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.

The Cambridgeshire and Peterborough Combined Authority also manages five low-cost Zephyr sensors within Fenland, specifically in the towns of March (three sensors) and Wisbech (two sensors). Data were collected at two sensors across the entire duration of 2024, the results and locations of which are presented in Appendix E.

#### 3.1.2 Non-Automatic Monitoring Sites

Fenland District Council undertook non- automatic (i.e. passive) monitoring of NO<sub>2</sub> at 41 sites during 2024. Table A.2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

#### 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<sub>2</sub>)

Table A. 3 and Table A. 4 in Appendix A compare the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past five years with the air quality objective of 40 µg/m<sup>3</sup>. 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 2024 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

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 200  $\mu$ g/m³, not to be exceeded more than 18 times per year.

Measured concentrations at all monitoring locations were compliant with the annual mean air quality objective for nitrogen dioxide (40 µg/m³).

Furthermore, as all annual mean nitrogen dioxide concentrations were well below 60  $\mu$ g/m³, it is unlikely there were any exceedances of the 1-hour mean nitrogen dioxide objective at any of the monitoring sites in 2024.

Changes to the monitoring network in 2024 involved the removal of 13 sites, and the addition of 12 new monitoring locations. New monitoring locations are located in areas which will be impacted by major infrastructure changes that are currently in planning

stages in order to gather background data. Site S36 (had an incorrect X OS Grid Ref in the 2023 ASR, this has been corrected from 450918 to 540918.

The monitoring results show that NO<sub>2</sub> levels are typically lower than those recorded in 2023 with an average reduction of 0.9 µg/m<sup>3</sup> across all sites.

Increased NO<sub>2</sub> levels were seen at 7 sites compared to 2023, with the most significant increases at site S17 (Weasenham Lane/Cromwell Road, Wisbech), though the site remains well in compliance with national air quality objectives for annual mean NO<sub>2</sub> concentrations at 25.2  $\mu$ g/m³ in 2024. The two sites with the next largest- increases were sites S36 (Gaul Road, March) and S28 (Broad Street, March) at 3.1  $\mu$ g/m³ and 2.5  $\mu$ g/m³ respectively.

The greatest decreases were seen at sites S19 (Broad Street, March), S31 (South Brink, Wisbech) and S15 (Churchill/Weasenham, Wisbech) at 8.7 μg/m³, 4.6 μg/m³ and 3.4 μg/m³ respectively.

Monitoring data from 2020 to 2024 displays a general downward trend in recorded NO<sub>2</sub> levels, as can be seen in Table A. 4.

#### 3.2.2 Particulate Matter (PM<sub>10</sub>)

Table A. 6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM<sub>10</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>.

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  $50\mu g/m^3$ , not to be exceeded more than 35 times per year.

No exceedances of the PM<sub>10</sub> daily mean were recorded at the Hallcroft Road sensor in 2024. The sensor was situated at this location due to industrial activity and resident concerns and will stay in place for 2025 and the location will continue to be reviewed on a 12-month basis.

#### 3.2.3 Particulate Matter (PM<sub>2.5</sub>)

Table A. 8 in Appendix A presents the ratified and adjusted monitored PM<sub>2.5</sub> annual mean concentrations for the past five years. The PM<sub>2.5</sub> annual mean concentration was 7.2 µg/m<sup>3</sup>, demonstrating the objectives have been met for this monitoring period. The sensor

will stay in place for 2025, and the location will continue to be reviewed on a 12-month basis.

#### 3.2.4 Sulphur Dioxide (SO<sub>2</sub>)

Table A. 9 in Appendix A compares the ratified continuous monitored SO<sub>2</sub> concentrations for 2024 with the air quality objectives for SO<sub>2</sub>. At all three locations monitoring SO<sub>2</sub> concentrations in Fenland there were no exceedances of the 24-hour, 1-hour and 15-minute objectives, demonstrating the sulphur dioxide objectives have been met for this monitoring period.

## **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? <sup>(1)</sup>	Monitoring Technique	Distance to Relevant Exposure (m) <sup>(2)</sup>	Distance to kerb of nearest road (m) <sup>(1)</sup>	Inlet Height (m)
FEN001	Hallcroft Road	Urban Background	526463	297061	NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub>	No	-	Sensor	5.0	1.8	3.3
AM1	Park Lane	Urban Background	526382	296859	SO <sub>2</sub>	Yes	AQMA 1 Whittlesey	UV Fluorescence	0.0	N/A	1.5
AM2	Bradley Fen	Industrial	523924	297974	SO <sub>2</sub>	Yes	AQMA 1 Whittlesey	UV Fluorescence	0.0	N/A	1.5

#### Notes:

- (1) N/A if not applicable
- (2) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co- located with a Continuous Analyser?	Tube Height (m)
S1	Syers Lane, Whittlesey [A605]	Kerbside	527059	297205	NO <sub>2</sub>	No	3.0	1.0	No	2.3
S2	Station Road, March [B1101]	Roadside	541980	297864	NO <sub>2</sub>	No	4.0	1.7	No	2.4
S3	Ramnoth Road, Wisbech [A1101]	Roadside	546860	308532	NO <sub>2</sub>	Yes, Wisbech AQMA 3 (NO <sub>2</sub> )	4.0	1.1	No	2.4
S5	Churchill Road, Wisbech (Bowthorpe) [A1101]	Roadside	546415	309602	NO <sub>2</sub>	Yes, Wisbech AQMA 1 (SO <sub>2</sub> ),2 (PM <sub>10</sub> ) &3 (NO <sub>2</sub> )	3.0	2.0	No	2.4
S6	Kings Dyke, Whittlesey [A605]	Roadside	525293	297406	NO <sub>2</sub>	No	10.0	1.6	No	2.4
S7	Cemetery Road Roundabout, Whittlesey [A605]	Roadside	527291	297159	NO <sub>2</sub>	No	5.0	2.0	No	2.3
S8	Westmead Ave, Wisbech [A1101]	Kerbside	546890	308368	NO <sub>2</sub>	Yes, Wisbech AQMA 3 (NO <sub>2</sub> )	12.0	0.8	No	2.4
S9	Thorney Toll [A47]	Roadside	534526	303907	NO <sub>2</sub>	No	1.0	1.9	No	2.9
S10	Coates [A605]	Kerbside	530615	297705	NO <sub>2</sub>	No	3.0	1.0	No	2.7
S13	Lynn Road / Mnt Pleasant, Wisbech [B198]	Roadside	546664	310342	NO <sub>2</sub>	Yes, Wisbech AQMA	3.0	1.4	No	2.6

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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co- located with a Continuous Analyser?	Tube Height (m)
						1 (SO <sub>2</sub> ) & 2			-	
S15	Churchill / Weasenham Wisbech	Roadside	546818	308568	NO <sub>2</sub>	Yes, Wisbech AQMA 3 (NO <sub>2</sub> )	4.0	1.4	No	2.4
S16	Lynn Road Roundabout, Wisbech [B198]	Kerbside	546238	309981	NO <sub>2</sub>	Yes, Wisbech AQMA 1 (SO <sub>2</sub> ),2 (PM <sub>10</sub> ) & 3 (NO <sub>2</sub> )	1.0	1.0	No	2.4
S17	Weasenham Lane / Cromwell Road, Wisbech [B198]	Roadside	545509	308735	NO <sub>2</sub>	No	2.0	2.0	No	2.3
S19	Broad Street, March (Natwest)	Roadside	541662	296814	NO <sub>2</sub>	No	1.0	2.1	No	2.4
S20	Napier Court, Churchill Road, Wisbech [A1101]	Roadside	546481	309387	NO <sub>2</sub>	Yes, Wisbech AQMA 1 (SO <sub>2</sub> ) & 3 (NO <sub>2</sub> )	3.0	1.8	No	2.5
S21	Norfolk Court, March [B1101]	Roadside	541838	296987	NO <sub>2</sub>	No	2.0	1.2	No	2.4
S24	Hocking Court, March [B1101]	Roadside	541779	296864	NO <sub>2</sub>	No	1.0	1.7	No	2.4
S26	Peas Hill Roundabout, March [A141]	Kerbside	540245	297613	NO <sub>2</sub>	No	5.0	1.0	No	2.1
S27	Dartford Road, March [B1099]	Roadside	541562	296920	NO <sub>2</sub>	No	6.0	1.1	No	2.4
S28	Broad Street, March (Tesco)	Roadside	541692	296840	NO <sub>2</sub>	No	1.0	2.1	No	2.3

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co- located with a Continuous Analyser?	Tube Height (m)
S29	The Causeway, March [B1101].	Roadside	541654	296055	NO <sub>2</sub>	No	3.0	1.8	No	2.3
S30	High Street, Chatteris [B1050]	Roadside	539332	286176	NO <sub>2</sub>	No	1.0	1.4	No	2.3
S31	South Brink, Wisbech [B198]	Roadside	545986	309618	NO <sub>2</sub>	Yes, Wisbech AQMA 1 (SO <sub>2</sub> )	1.0	1.8	No	2.2
S32	North End, Wisbech [A1101]	Roadside	545997	310092	NO <sub>2</sub>	Yes, Wisbech AQMA 1 (SO <sub>2</sub> )	5.0	2.5	No	2.4
S33	Weasenham Lane/New Drove, Wisbech [B198]	Roadside	546567	308374	NO <sub>2</sub>	No	5.0	1.7	No	2.2
S34	Weasenham Lane AQY, Wisbech	Roadside	546756	308522	NO <sub>2</sub>	Yes, Wisbech AQMA 3 (NO <sub>2</sub> )	1.0	1.5	No	2.2
S36	Gaul Road, March	Roadside	540918	296641	NO <sub>2</sub>	No	1.0	1.7	No	2.2
S37	Burrowmoor Road (East), March	Roadside	540718	296148	NO <sub>2</sub>	No	1.0	1.7	No	2.2
S42	Hallcroft Road, Whittlesey	Urban Backgrou nd	526463	297061	NO <sub>2</sub>	No	5.0	1.8	Yes	2.4
S43	Fenland Way, Chatteris [A141]	Roadside	538913	287157	NO <sub>2</sub>	No	15.0	1.2	No	2.4
S44	A47, Guyhirn	Roadside	539574	303042	NO <sub>2</sub>	No	5.0	1.5	No	2.4
S45	178a Wisbech Road, March	Roadside	540354	297558	NO <sub>2</sub>	No	8.0	1.4	No	2.3

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co- located with a Continuous Analyser?	Tube Height (m)
S46	Maple Grove, March	Roadside	541151	297366	NO <sub>2</sub>	No	5.0	1.1	No	2.4
S47	Wisbech Road, (Cobblestones), March	Roadside	540071	298081	NO <sub>2</sub>	No	10.0	1.2	No	2.5
S48	A605 13 - 15 Whitmore Street, Whittlesey	Kerbside	526892	297201	NO <sub>2</sub>	No	1.0	1.1	No	2.4
S49	1B West Delph, Whittlesey	Roadside	526979	297613	NO <sub>2</sub>	No	3.0	1.1	No	2.4
S50	Eastgate Mews, Whittlesey	Kerbside	527076	297056	NO <sub>2</sub>	No	1.0	1.0	No	2.1
S51	Dandelion Drive, Whittlesey	kerbside	528379	297150	NO <sub>2</sub>	No	7.0	1.0	No	2.4
S52	15 Old Market, Wisbech	Kerbside	546033	309701	NO <sub>2</sub>	Yes, Wisbech AQMA 3 (NO <sub>2</sub> )	8.0	1.0	No	2.3
S53	22 Southbrink, Wisbech	Roadside	545777	309529	NO <sub>2</sub>	Yes, Wisbech AQMA 3 (NO <sub>2</sub> )	3.0	1.2	No	2.3
S54	2 Leverington Road, Wisbech [A1101]	Roadside	545899	310325	NO <sub>2</sub>	Yes, Wisbech AQMA 3 (NO <sub>2</sub> )	3.0	1.5	No	2.3

### Notes:

- (1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).
- (2) N/A if not applicable.

Table A. 3 – Annual Mean NO<sub>2</sub> Monitoring Results: Automatic Monitoring (μg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%)	2020	2021	2022	2023	2024
FEN001	526463	297061	Urban Background	82.6	66.0				12	12.5

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

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

☑ Where exceedances of the NO₂ annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2024.

#### Notes:

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> 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<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (μg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
S1	527059	297205	Kerbside	100.0	100.0	15.8	17.8	17.6	14.8	14.4
S2	541980	297864	Roadside	100.0	100.0	15.7	16.6	14.3	13.9	14.3
S3	546860	308532	Roadside	100.0	100.0	17.7	18.1	17.4	16.6	13.9
S5	546415	309602	Roadside	100.0	100.0	23.7	26.8	23.7	23.5	20.3
S6	525293	297406	Roadside	100.0	100.0	15.1	15.4	12.8	13.3	11.6
S7	527291	297159	Roadside	100.0	100.0	16.2	16.1	16.4	14.2	14.0
S8	546890	308368	Kerbside	100.0	100.0	23.4	23.9	23.1	21.5	22.5
S9	534526	303907	Roadside	100.0	100.0	15.0	17.0	17.4	16.8	15.5
S10	530615	297705	Kerbside	100.0	100.0	13.9	14.9	15.2	13.2	13.1
S13	546664	310342	Roadside	100.0	100.0	26.9	28.7	27.1	24.0	24.7
S15	546818	308568	Roadside	100.0	100.0	24.4	25.5	25.1	23.5	20.1
S16	546238	309981	Kerbside	100.0	100.0	23.5	24.6	23.1	22.2	21.3

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
S17	545509	308735	Roadside	100.0	100.0	15.2	18.6	15.7	14.2	25.2
S19	541662	296814	Roadside	90.6	90.6	25.4	28.5	24.6	24.7	16.0
S20	546481	309387	Roadside	100.0	100.0	21.8	24.5	23.3	21.6	20.8
S21	541838	296987	Roadside	100.0	100.0	15.6	15.3	14.7	13.1	12.0
S24	541779	296864	Roadside	100.0	100.0	19.3	19.3	19.6	18.5	17.1
S26	540245	297613	Kerbside	100.0	100.0	27.7	30.8	27.1	28.1	25.6
S27	541562	296920	Roadside	100.0	100.0	17.1	18.6	17.6	16.1	14.2
S28	541692	296840	Roadside	100.0	100.0	21.9	23.0	22.6	16.3	18.8
S29	541654	296055	Roadside	83.0	83.0	17.7	18.3	15.4	16.0	16.1
S30	539332	286176	Roadside	92.5	92.5	17.1	17.1	17.5	16.1	14.4
S31	545986	309618	Roadside	100.0	100.0	30.7	34.7	33.1	33.8	29.2
S32	545997	310092	Roadside	100.0	100.0	17.2	18.2	17.8	17.1	15.1
S33	546567	308374	Roadside	100.0	100.0	-	-	13.9	14.3	12.0

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
S34	546756	308522	Roadside	100.0	100.0	-	-	19.9	18.8	17.0
S36	540918	296641	Roadside	100.0	100.0	-	-	13.2	10.5	13.6
S37	540718	296148	Roadside	100.0	100.0	-	-	14.8	14.5	12.3
S42	526463	297061	Urban Background	100.0	100.0	-	-	-	9.9	8.3
S43	538913	287157	Roadside	81.1	81.1	-	-	-	-	15.6
S44	539574	303042	Roadside	100.0	100.0	-	-	-	-	27.4
S45	540354	297558	Roadside	100.0	100.0	-	-	-	-	13.4
S46	541151	297366	Roadside	100.0	100.0	-	-	-	-	8.7
S47	540071	298081	Roadside	100.0	100.0	-	-	-	-	14.4
S48	526892	297201	Kerbside	100.0	100.0	-	-	-	-	18.0
S49	526979	297613	Roadside	100.0	100.0	-	-	-	-	14.7
S50	527076	297056	Kerbside	75.0	75.0	-	-	-	-	15.7
S51	528379	297150	Kerbside	64.2	64.2	-	-	-	-	10.5

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
S52	546033	309701	Kerbside	100.0	100.0	-	-		-	14.7
S53	545777	309529	Roadside	90.6	90.6	-	-	-	-	17.0
S54	545899	310325	Roadside	100.0	100.0	-	-	-	-	16.6

- ☑ 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/m³.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60μg/m³, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

- (1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
- (2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A. 1 – Trends in Annual Mean NO<sub>2</sub> Concentrations – AQMA Wisbech No.1

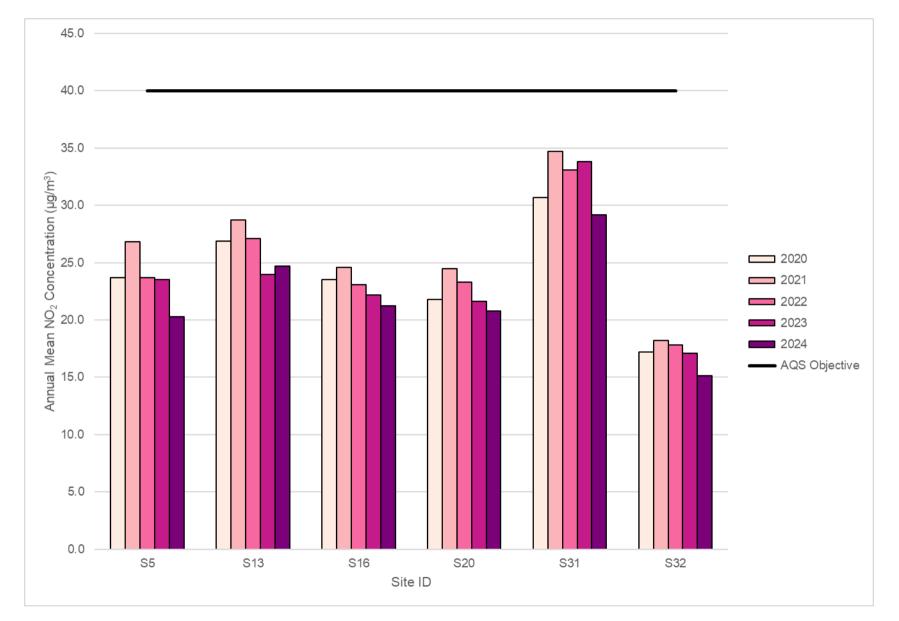


Figure A. 2 - Trends in Annual Mean NO<sub>2</sub> Concentrations – AQMA Wisbech No.2

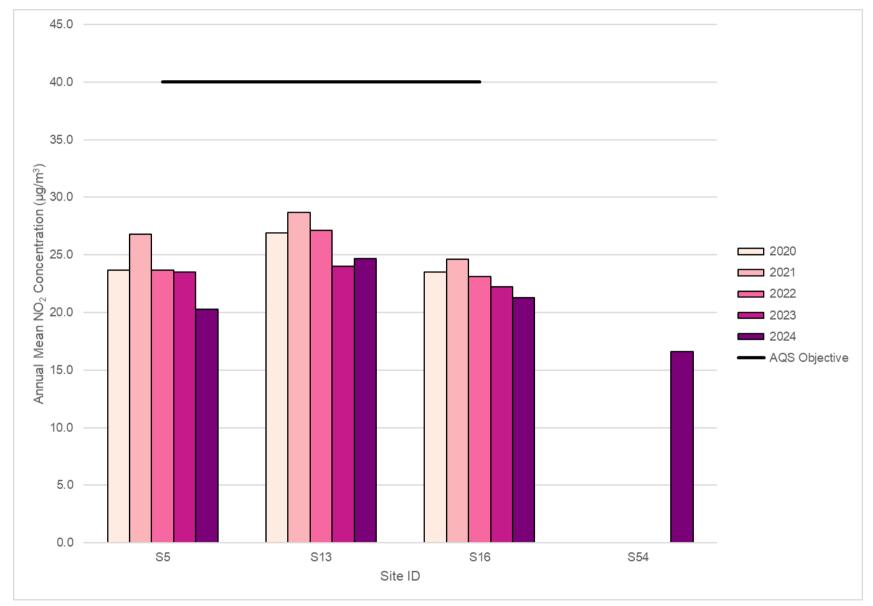


Figure A. 3 - Trends in Annual Mean NO<sub>2</sub> Concentrations - AQMA Wisbech No.3

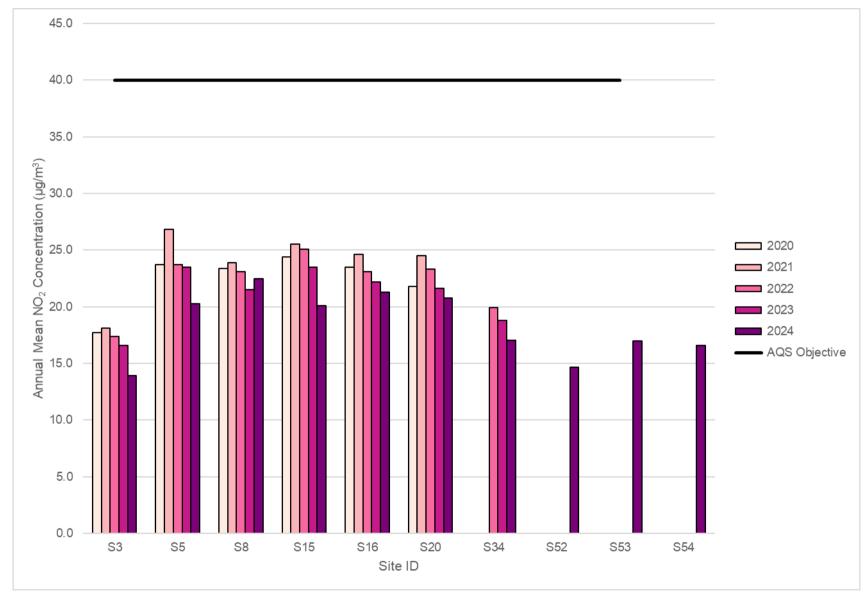


Figure A. 4 - Trends in Annual Mean NO<sub>2</sub> Concentrations – Whittlesey

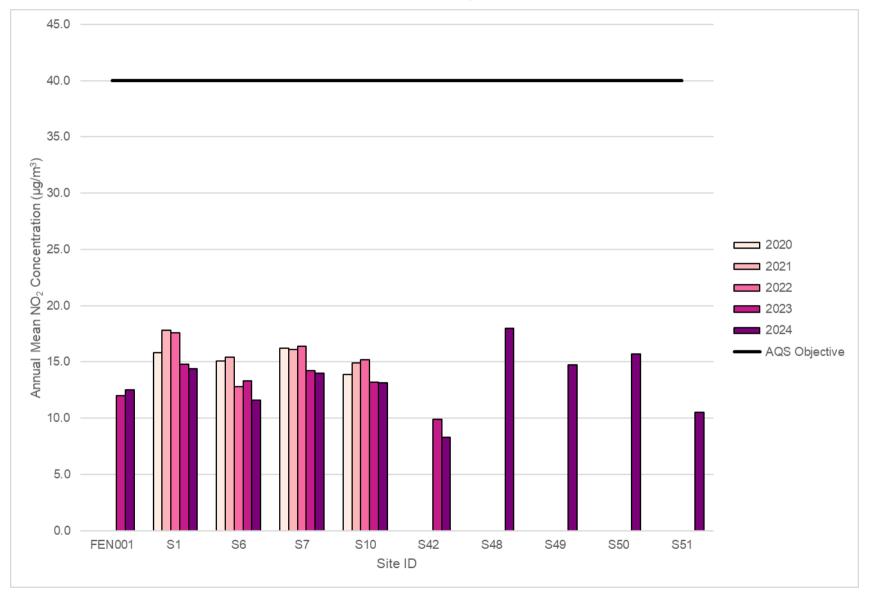


Figure A. 5 - Trends in Annual Mean NO<sub>2</sub> Concentrations - Wisbech

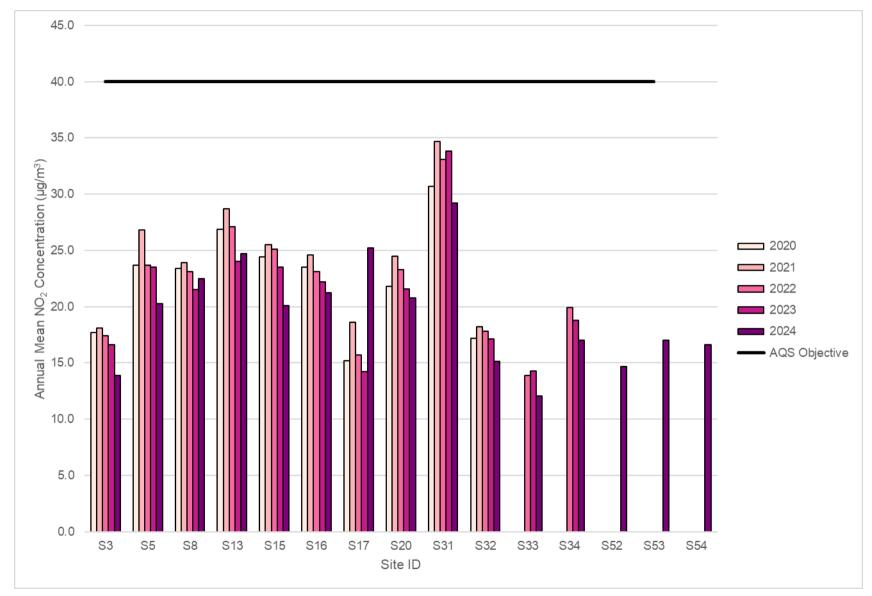


Figure A. 6 - Trends in Annual Mean NO<sub>2</sub> Concentrations - March

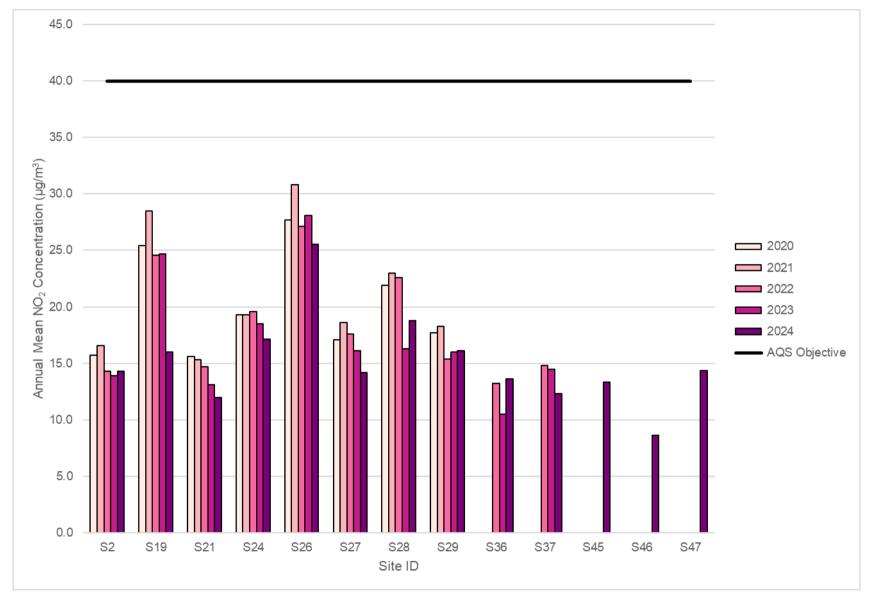


Figure A. 7 - Trends in Annual Mean NO<sub>2</sub> Concentrations - A47

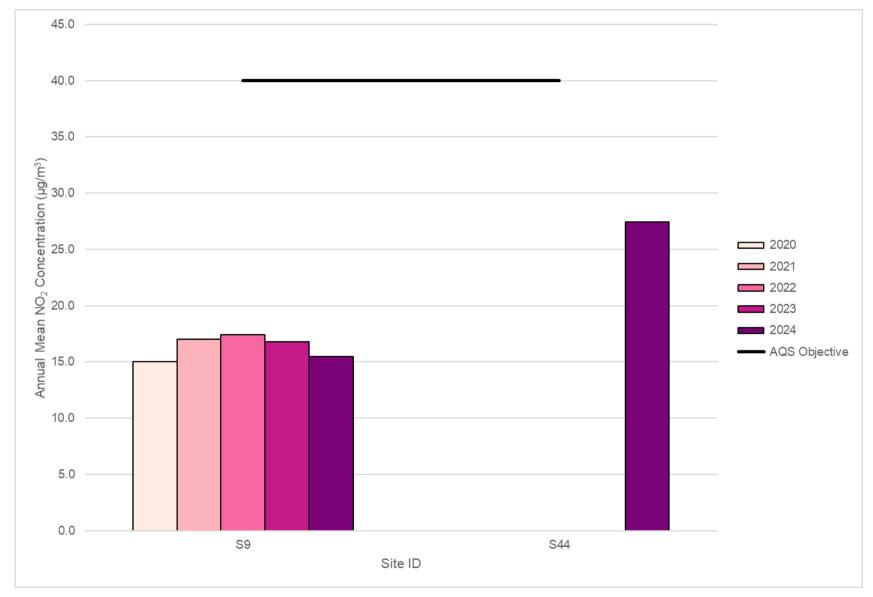


Figure A. 8 - Trends in Annual Mean NO<sub>2</sub> Concentrations - Chatteris

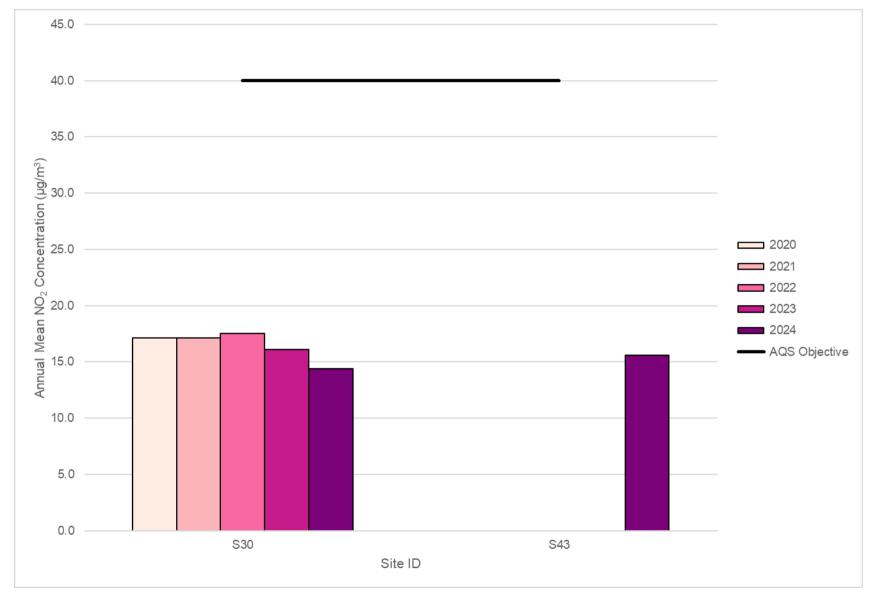


Table A. 5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
FEN001	526463	297061	Urban Background	82.6	66.0				0	0 (40)

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

Exceedances of the NO<sub>2</sub> 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

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

- (1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
- (2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table A. 6 – Annual Mean PM<sub>10</sub> Monitoring Results (μg/m<sup>3</sup>)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
FEN001	526463	297061	Urban Background	84.2	67.5				14	11.3

☑ 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<sup>3</sup>.

Exceedances of the PM<sub>10</sub> annual mean objective of 40µg/m<sup>3</sup> 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%).

Figure A. 9 - Trends in Annual Mean PM<sub>10</sub> Concentrations

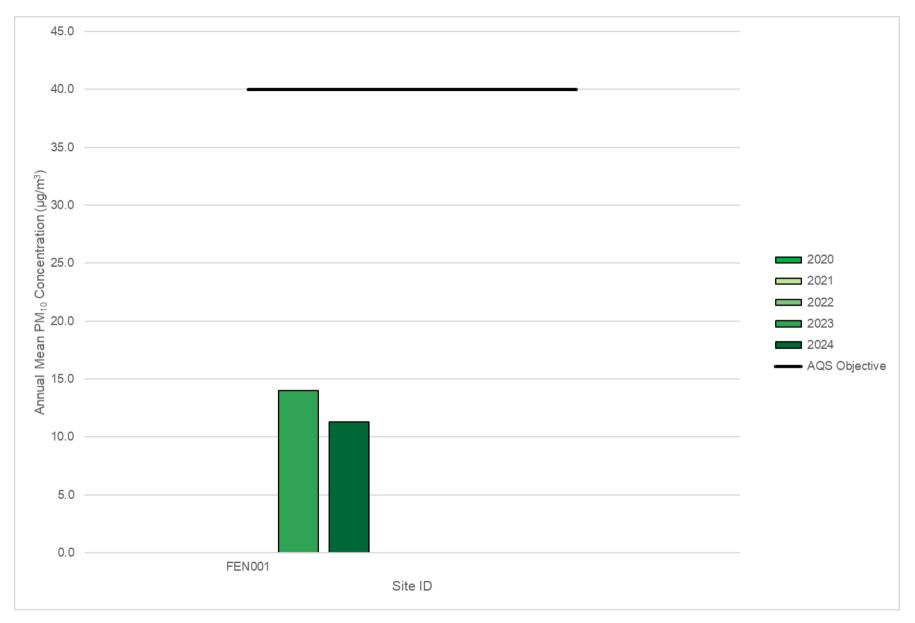


Table A. 7 – 24-Hour Mean PM<sub>10</sub> Monitoring Results, Number of PM<sub>10</sub> 24-Hour Means > 50μg/m<sup>3</sup>

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
FEN001	526463	297061	Urban Background	84.2	67.5				0	0 (21)

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m³ have been recorded.

Exceedances of the PM<sub>10</sub> 24-hour mean objective (50µg/m³ 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<sub>2.5</sub> Monitoring Results (µg/m<sup>3</sup>)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%)	Valid Data Capture 2024 (%) <sup>(2)</sup>	2020	2021	2022	2023	2024
FEN001	526463	297061	Urban Background	84.2	67.5				9	7.2

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

The annual mean concentrations are presented as µg/m<sup>3</sup>.

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%).

Figure A. 10 – Trends in Annual Mean PM<sub>2.5</sub> Concentrations

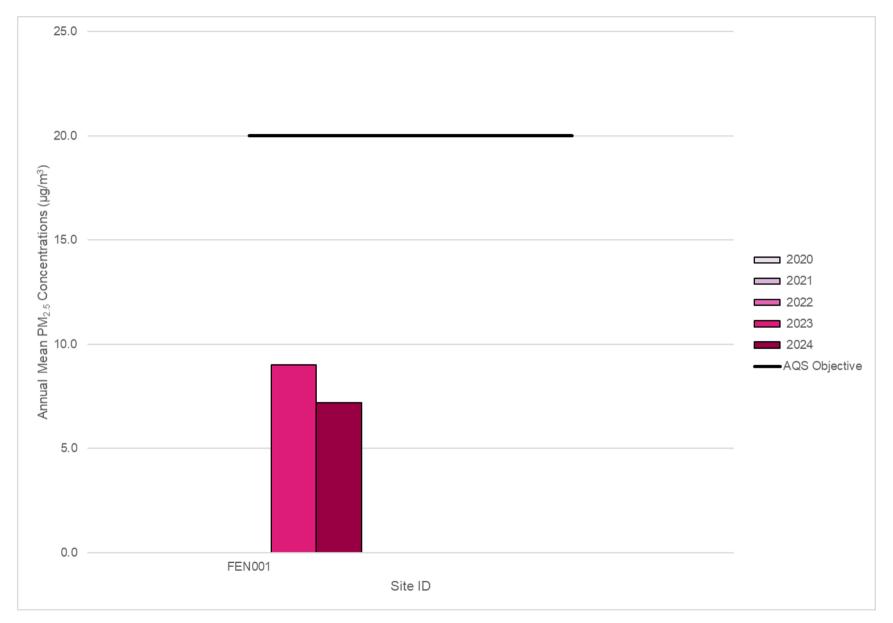


Table A. 9 - SO<sub>2</sub> 2024 Monitoring Results, Number of Relevant Instances

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2024 (%) <sup>(2)</sup>	Number of 15- minute Means > 266μg/m³	Number of 1- hour Means > 350μg/m³	Number of 24- hour Means > 125µg/m³
FEN001	526463	297061	Urban Background	67.5	67.5	14 (223)	0(150)	0(39)
AM1	526382	296859	Urban Background	96.5	96.5	0	0	0
AM2	523924	297974	Industrial	100.0	100.0	0	0	0

Results are presented as the number of instances where monitored concentrations are greater than the objective concentration.

Exceedances of the SO<sub>2</sub> objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year).

If the period of valid data is less than 85%, the relevant percentiles are 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%).

### **Appendix B: Full Monthly Diffusion Tube Results for 2024**

Table B.1 - NO<sub>2</sub> 2024 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S1	527059	297205	27.1	23.0	17.6	14.2	17.5	14.2	15.9	14.7	16.2	16.9	25.2	18.6	18.4	14.4	-	
S2	541980	297864	22.6	23.5	19.4	15.4	16.3	14.5	13.5	16.4	18.3	22.4	20.5	17.0	18.3	14.3	-	
S3	546860	308532	22.9	26.1	21.4	14.7	12.7	13.9	15.2	14.5	15.0	20.0	17.5	19.9	17.8	13.9	-	
S5	546415	309602	37.1	32.6	29.3	26.9	23.6	25.5	25.0	20.3	22.8	26.8	17.2	24.6	26.0	20.3	-	
S6	525293	297406	17.6	20.6	17.6	13.5	13.7	13.8	10.8	12.4	12.3	18.0	23.9	4.0	14.9	11.6	-	
S7	527291	297159	23.5	20.9	21.0	15.4	16.3	14.5	17.2	12.6	11.8	19.3	25.4	17.1	17.9	14.0	-	
S8	546890	308368	34.8	34.4	28.8	20.6	28.3	24.3	25.8	25.3	25.9	36.1	40.5	21.2	28.8	22.5	-	
S9	534526	303907	21.4	24.7	22.3	12.4	17.9	19.6	20.2	18.5	16.0	25.0	22.8	16.9	19.8	15.5	-	
S10	530615	297705	23.4	22.6	18.8	8.7	16.3	12.9	13.4	15.8	15.6	19.0	21.2	14.6	16.9	13.1	-	
S13	546664	310342	36.7	51.0	31.3	24.8	27.7	26.8	29.2	29.3	31.9	27.5	35.7	27.9	31.7	24.7	-	
S15	546818	308568	26.3	34.4	31.7	22.8	22.6	24.3	24.0	24.0	18.1	27.9	31.3	22.0	25.8	20.1	-	
S16	546238	309981	34.7	33.9	31.4	21.6	24.8	22.9	25.3	23.1	21.7	30.2	30.6	26.8	27.3	21.3	-	
S17	545509	308735	31.4	39.0	40.8	25.5	31.5	28.5	32.6	33.9	28.3	35.5	30.0	31.0	32.3	25.2	-	
S19	541662	296814	19.1		23.4	17.2	22.4	16.8	19.2	22.4	23.2	26.5	25.5	10.1	20.5	16.0	-	
S20	546481	309387	23.3	33.0	31.2	25.2	31.5	25.0	26.3	23.2	22.4	28.1	28.3	22.0	26.6	20.8	-	
S21	541838	296987	14.6	19.3	17.3	25.6	14.5	12.0	13.6	13.5	12.4	19.6	18.1	4.1	15.4	12.0	-	
S24	541779	296864	23.4	31.8	28.7	22.3	18.7	17.1	18.1	18.8	16.7	26.5	23.6	17.8	22.0	17.1	-	
S26	540245	297613	25.4	38.1	38.5	26.0	38.6	31.4	32.0	34.2	33.6	40.5	31.1	23.8	32.8	25.6	-	

LAQM Annual Status Report 2025

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S27	541562	296920	25.9	22.8	20.0	25.7	15.8	12.4	14.8	7.7	16.4	18.4	23.8	14.6	18.2	14.2	-	
S28	541692	296840	29.0	15.5	26.9	31.6	29.7	20.1	25.3	14.2	28.0	22.3	21.0	25.1	24.1	18.8	-	
S29	541654	296055	27.1	25.0	21.1		18.0	14.1	14.9		17.8	22.1	25.7	20.7	20.7	16.1	-	
S30	539332	286176	16.2	21.6	19.0	15.8	18.7	16.1		13.5	18.0	22.8	25.0	16.2	18.4	14.4	-	
S31	545986	309618	38.8	53.0	46.8	30.8	38.4	37.0	37.0	39.9	30.3	46.5	37.3	13.3	37.4	29.2	-	
S32	545997	310092	23.7	24.2	21.1	17.8	20.9	15.2	16.1	15.6	14.6	26.4	21.6	15.8	19.4	15.1	-	
S33	546567	308374	17.7	20.0	16.6	13.2	13.2	15.0	14.0	3.2	18.2	19.7	23.7	10.6	15.4	12.0	-	
S34	546756	308522	29.4	26.8	26.2	17.6	24.7	19.9	19.0	18.4	17.6	21.0	28.6	12.6	21.8	17.0	-	
S36	540918	296641	24.1	24.3	22.6	14.4	14.9	15.1	15.0	14.6	14.7	14.2	18.1	17.2	17.4	13.6	-	X OS Grid Ref corrected from 2023 data (previously 450918).
S37	540718	296148	10.8	17.4	18.0	15.2	16.0	10.5	12.7	13.6	16.6	16.1	23.8	18.6	15.8	12.3	-	
S42	526463	297061	13.5	14.6	14.3	8.6	9.7	7.7	8.8	7.2	9.8	10.4	9.9	12.8	10.6	8.3	-	
S43	538913	287157	23.0	25.7	21.2	11.6		12.8	17.1	13.5	22.2	29.3	23.2		20.0	15.6	-	
S44	539574	303042	38.2	42.4	37.7	14.0	40.2	17.6	43.9	43.7	38.2	50.7	40.1	15.4	35.2	27.4	-	
S45	540354	297558	11.1	20.9	19.9	15.5	16.9	14.5	16.3	16.4	17.3	23.2	22.8	10.8	17.1	13.4	-	
S46	541151	297366	17.5	15.2	14.8	9.9	10.9	8.2	8.8	8.0	5.2	12.9	17.9	3.8	11.1	8.7	-	
S47	540071	298081	25.6	10.0	22.1	17.8	17.1	14.5	13.9	15.4	14.7	25.4	25.5	18.9	18.4	14.4	-	
S48	526892	297201	32.6	28.1	29.1	20.3	23.7	16.9	21.5	16.1	20.3	31.0	15.5	21.5	23.1	18.0	-	
S49	526979	297613	19.5	21.7	22.0	14.7	18.8	17.4	17.7	17.4	16.8	22.3	20.0	18.0	18.9	14.7	-	
S50	527076	297056	24.0	24.9	22.4	15.3		16.6		13.4	14.7	23.3	26.3		20.1	15.7	-	
S51	528379	297150	20.9		18.2	11.5	11.4	6.4	13.1	12.1			9.0		12.8	10.5	-	
S52	546033	309701	18.2	23.4	20.7	16.6	19.6	15.7	16.4	16.1	18.9	22.2	18.1	19.9	18.8	14.7	-	

LAQM Annual Status Report 2025

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S53	545777	309529	27.2	25.4	26.9	16.6	21.4	17.2	20.6		15.8	26.4	25.1	17.2	21.8	17.0	-	
S54	545899	310325	25.9	26.9	24.1	16.7	17.7	16.3	17.3	17.4	19.4	25.4	25.4	22.9	21.3	16.6	-	

- ☑ All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.
- ☑ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.
- Local bias adjustment factor used.
- National bias adjustment factor used.
- ☑ Where applicable, data has been distance corrected for relevant exposure in the final column.
- ☑ Fenland District Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding  $60\mu g/m^3$ , indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**. See Appendix C for details on bias adjustment and annualisation.

LAQM Annual Status Report 2025

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

# New or Changed Sources Identified Within Fenland District Council During 2024

The following planning applications have been identified as having a potential to impact air quality due to new dwellings creating more traffic and sensitive receptors:

- F/YR24/0396/O: Erection of up to 230 dwellings on Land North and South Of Cherryholt Farm, Burrowmoor Road, March.
- F/YR24/0456/O: Erection of up to 50 dwellings involving the demolition of existing dwelling and outbuildings on Land North of Lambs Hill Drove, March
- F/YR24/0827/O: Erection of up to 200 dwellings (including affordable housing and self-build/custom dwellings), 2.3ha of safeguarded land for primary education, public open space, landscaping, children's play area, sustainable drainage infrastructure, the formation of 2 x vehicular accesses and all other associated infrastructure. At Land East Of 61 March Road, Coates.

# Additional Air Quality Works Undertaken by Fenland District Council During 2024

Fenland District Council has not completed any additional works within the reporting year of 2024.

#### **QA/QC** of Diffusion Tube Monitoring

Socotec Didcot supplies and analyses the diffusion tubes for Fenland. The tubes were prepared by spiking acetone:triethanolamine (50:50) onto the grids prior to the tubes being assembled. The tubes were desorbed with distilled water and the extract analysed using a segmented flow auto-analyser with ultraviolet detection.

The monitoring was undertaken in adherence with the 2024 Diffusion Tube Monitoring Calendar.

The laboratory has taken part in the AIR (previously WASP) proficiency scheme since its inception. To achieve the highest ranking of "Satisfactory" a laboratory must achieve a z-score of ≤2. For 2024, 100% of results from SOCOTEC were determined as satisfactory.

Bought in ISO Guide 34 and ISO/IEC 17025 certified standards are used to prepare calibration and QC standards.

2% of tubes are checked for blankness during manufacture, to ensure there is no contamination introduced during the manufacturing process.

The method meets the requirements laid out in DEFRA's "Diffusion Tubes for Ambient NO2 Monitoring: A Practical Guidance."

#### **Diffusion Tube Annualisation**

Annualisation was required at one site for 2024. Details of the annualisation for site S51 can be found in Table C. 1.

Table C. 1 - Annualisation Summary (concentrations presented in μg/m³)

Site ID	Annualisation Factor Wicken Fen	Annualisation Factor Northampton Spring Park	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
S51	1.0346	1.0726	1.0536	12.8	13.5

#### **Diffusion Tube Bias Adjustment Factors**

The diffusion tube data presented within the 2024 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<sub>x</sub>/NO<sub>2</sub> continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Fenland District Council have applied a national bias adjustment factor of 0.78 to the 2024 monitoring data. A summary of bias adjustment factors used by Fenland District Council over the past five years is presented in Table C.2.

Table C. 2 - Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	06/25	0.78
2023	National	03/24	0.77
2022	National	03/23	0.76
2021	National	06/22	0.78
2020	National	09/19	0.76

#### NO<sub>2</sub> Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO<sub>2</sub> concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO<sub>2</sub> fall-off with distance calculator available on the LAQM Support website.

No diffusion tube NO<sub>2</sub> monitoring locations within Fenland District Council required distance correction during 2024.

#### **QA/QC** of Automatic Monitoring

The two automatic monitors (AM1 and AM2) situated in Kings Dyke, Whittlesey, are owned and operated by Forterra Building Products Ltd Whittlesey Brickworks, Kings Dyke Works, Peterborough Road, Whittlesey, Cambridgeshire, PE7 1PD. The monitors have been installed to demonstrate compliance with their EA Environmental Permit for manufacturing ceramic products (bricks) under registered permit EPR/GP3435WX. As part of their permitting requirements a yearly summary of compliance with Local Air Quality Objectives is provided to the Local Authority for reporting. The data is not published live, but further information is available from the public register at <a href="View registration EPR/GP3435WX">View registration EPR/GP3435WX</a> (data.gov.uk). With regards to the QA, SLR visit both monitoring sites each month to collect the raw data from the analysers. Whilst on site they check the analyser zero reading by calibrating it against the known value of the concentrated SO<sub>2</sub> cylinder at 450ppb.

For the sensor situated in Hallcroft Road, Whittlesey (FEN001), data management and Local Site Operator (LSO) duties are completed by Ricardo. The <u>Hallcroft Road (sensor)</u> <u>Latest Data - Air Quality monitoring service (airqualityengland.co.uk)</u> page on the UK-Air

website presents automatic monitoring results for Fenland District Council. The following information details how the sensors quality control is maintained by Ricardo.

#### Sensor dataset correction using UK MCERTS reference measurements

Sensor responses for a given pollutant are known to vary widely, even across the same make and model when run side by side, as such data correction is required. For each sensor Ricardo achieve this via a characterisation and co-location task, undertaken predeployment of the senor and annually thereafter.

#### **Sensor Unit Characterisation**

Characterisation of each sensor pollutant is the first stage in the sensor unit calibration process. Sensor units usually take circa 2-3 days to settle once installed at the MCERTS reference monitoring station. Following this, comparison of the sensor and reference datasets take place, the sensor software for each pollutant will be reset (zero and r2 regression) to mirror the reference measurements. Each sensor species (NO, NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>) requires characterising for each unit as each sensor cartridge responds differently to ambient concentrations –it's not possible to characterise and co-locate one sensor unit and apply the same correction factor to other sensors (even if it's the same make, model, and age).

#### **Co-location Correction**

The co-location correction processing is crucial to establish that sensor responses mirror reference instrument measurements under current meteorological conditions, and to assess changes in responses across time. During the co-location phase the sensors remain in situ following characterisation. The provisional datasets from the sensors and reference instruments are compared, the difference in response is then calculated, and a provisional correction factor is applied to the provisional datasets. This process is repeated following ratification of the reference datasets, and the sensor datasets are then corrected again. Best practice guidance suggests co-location is required every 3-months in the UK to account for changes in meteorological conditions, however many local authorities undertake this annually due to budget constraints and/or to meet data capture requirements. Following the co-location tasks, Ricardo use the results as part of the quality control and ratification process for each pollutant. This essentially involves screening out any suspicious looking or faulty data and applying the necessary correction factors and baseline adjustments during ratification.

#### Quarterly QA/QC and Ratification

Following ratification of the reference monitoring station datasets, Ricardo reprocess the sensor datasets for each pollutant, from each sensor, using an updated co-location correction factor. This can increase or decrease the resulting datasets significantly, by up to 25% if not applied correctly. We then compare the measurements to other similar datasets to evaluate and address any inconsistencies. Where evidence supports, we screen out inconsistencies and faulty data. The data are then re-checked by an independent team member prior to being marked as ratified. At this point the datasets are suitable to feed into longer term policy decision making, and LAQM reporting.

#### PM<sub>10</sub> and PM<sub>2.5</sub> Monitoring Adjustment

The type of PM<sub>10</sub> and PM<sub>2.5</sub> monitors utilised within Fenland District Council do not require the application of a correction factor.

#### **Automatic Monitoring Annualisation**

Annualisation was required for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> at the FEN001 automatic monitoring site. Annualisation data is presented in Table C. 3, Table C. 4 and Table C. 5.

Table C. 3 – Automatic NO<sub>2</sub> Annualisation Summary (concentrations presented in μg/m<sup>3</sup>

	Annual Data	A	FEN001						
Background Site	Annual Data Capture (%)	Annual Mean (A <sub>m</sub> )	Period Mean (P <sub>m</sub> )	Ratio (A <sub>m</sub> / P <sub>m</sub> )					
Wicken Fen	95.8	4.9	4.4	1.120					
Northampton Spring Park	99.4	9.2	8.7	1.058					
Į.	Average (R <sub>a</sub> )		1.0	989					
Raw Da	Raw Data Annual Mean (M)								
Annualised	12.5								

Table C. 4 – Automatic PM $_{10}$  Annualisation Summary (concentrations presented in  $\mu g/m^3$ 

Deckground Site	Annual Data	Annual Mean	FEN	1001					
Background Site	Capture (%)	(A <sub>m</sub> )	Period Mean (P <sub>m</sub> )	Ratio (A <sub>m</sub> / P <sub>m</sub> )					
Wicken Fen	99.8	10.8	10.5	1.023					
Tallington	99.6	10.8	10.7	1.010					
,	Average (R <sub>a</sub> )		1.0	016					
Raw Da	Raw Data Annual Mean (M)								
Annualised	Annualised Annual Mean (M x R <sub>a</sub> )								

Table C. 5 – Automatic PM<sub>2.5</sub> Annualisation Summary (concentrations presented in  $\mu g/m^3$ 

	Annual Data Capture (%)	Annual Mean (A <sub>m</sub> )	FEN001	
Background Site			Period Mean (P <sub>m</sub> )	Ratio (A <sub>m</sub> / P <sub>m</sub> )
Wicken Fen	99.8	6.6	6.1	1.086
Tallington	99.6	6.6	6.3	1.053
ı	1.0	70		
Raw Da	6.7			
Annualised Annual Mean (M x R <sub>a</sub> )			7.	2

#### NO<sub>2</sub> Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO<sub>2</sub> concentration at the nearest location relevant for exposure has been estimated using the NO<sub>2</sub> fall-off with distance calculator available on the LAQM Support website.

No automatic NO<sub>2</sub> monitoring locations within Fenland District Council required distance correction during 2024.

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

Figure D. 1 – Map showing all monitoring locations and AQMAs within the Fenland District boundary

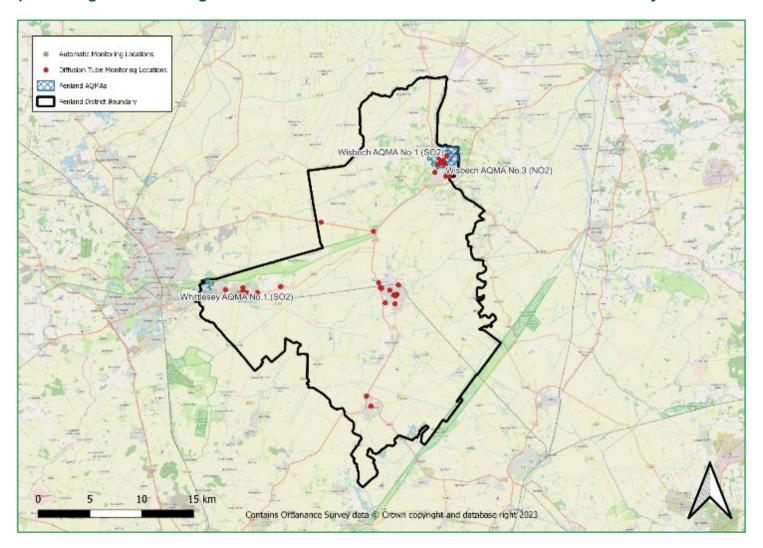


Figure D. 2 – Map showing monitoring locations in Whittlesey

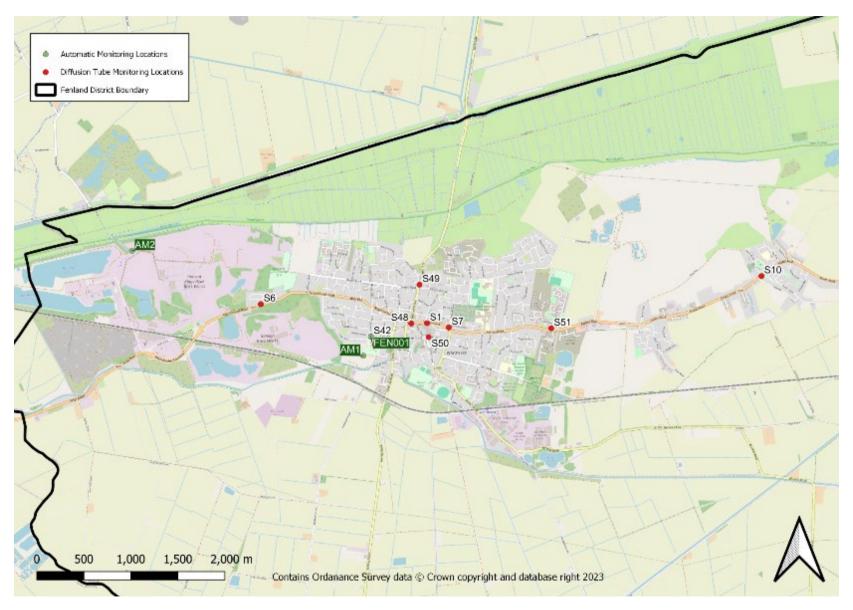


Figure D. 3 – Map showing monitoring locations in Wisbech

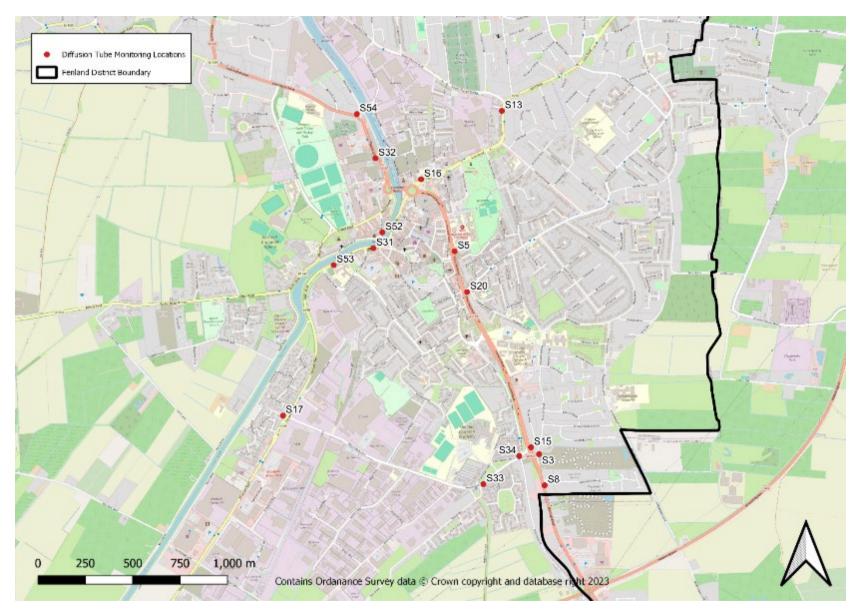
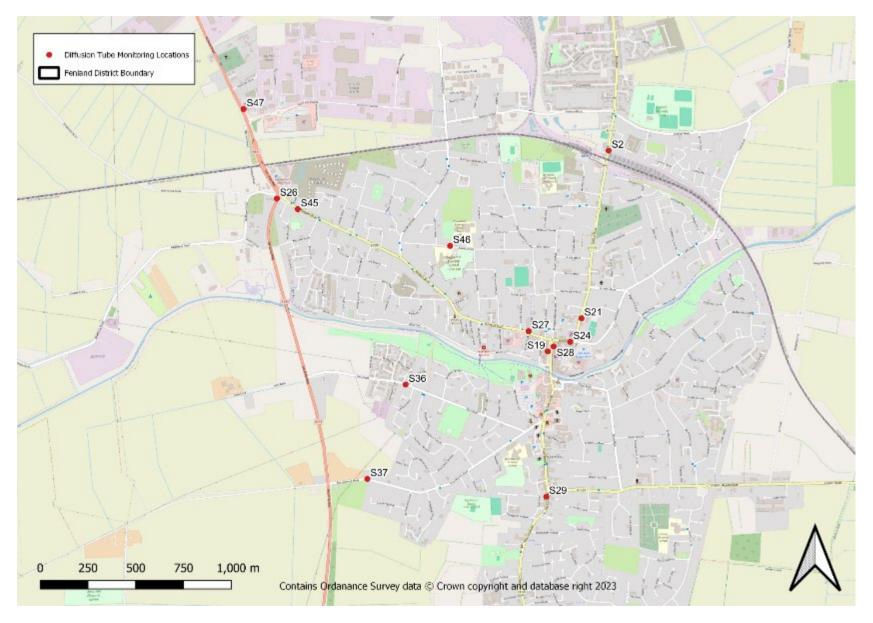


Figure D. 4 – Map showing monitoring locations in March



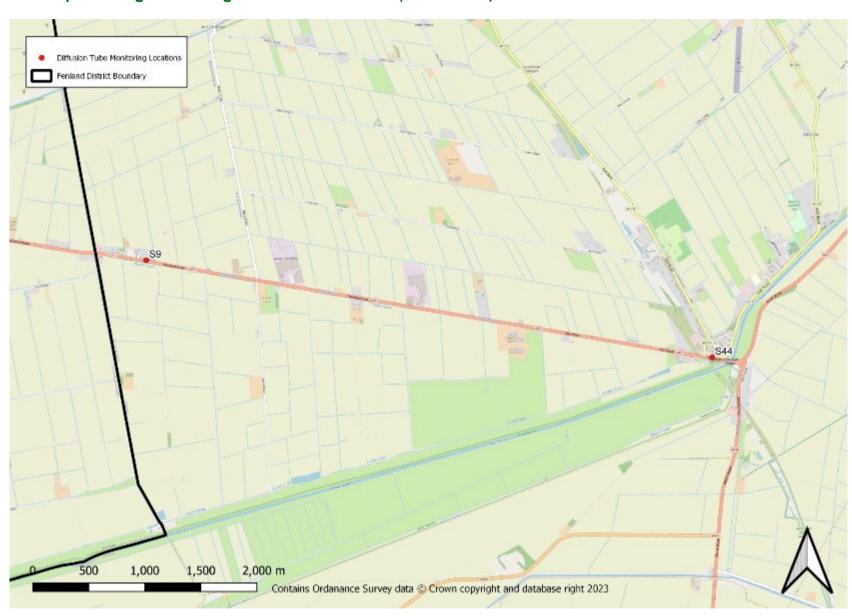


Figure D. 5 – Map showing monitoring locations on the A47 (S9 and S44)

Figure D. 6 – Map showing monitoring locations in Chatteris



Figure D. 7 – Map showing Whittlesey AQMA No. 1 (SO<sub>2</sub>)

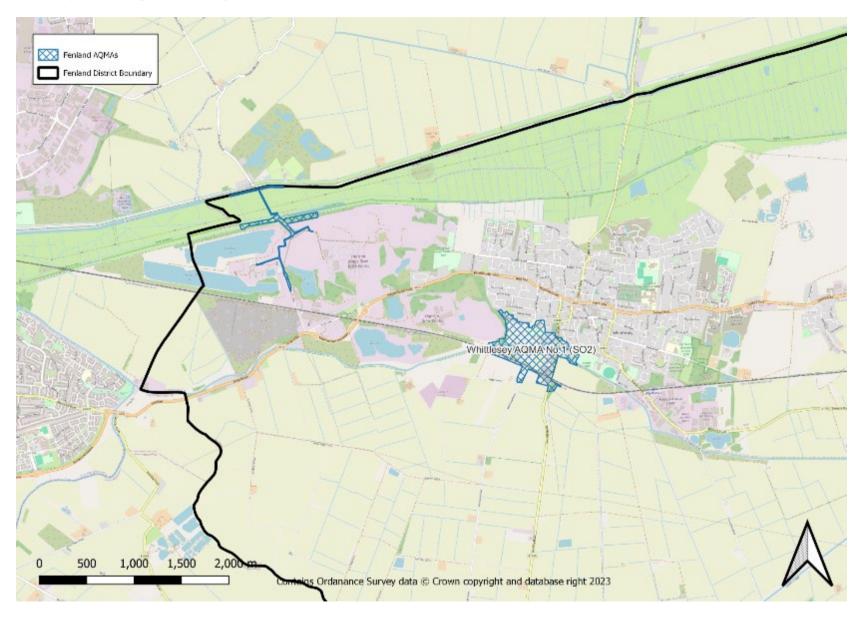


Figure D. 8 – Map showing Wisbech AQMA No. 1 (SO<sub>2</sub>)

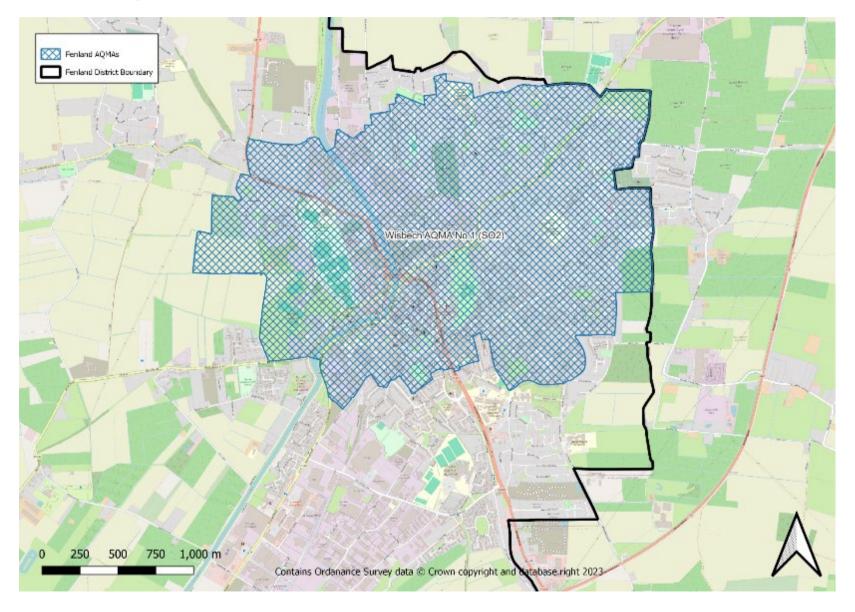


Figure D. 9 – Map showing Wisbech AQMA No. 2 (PM<sub>10</sub>)

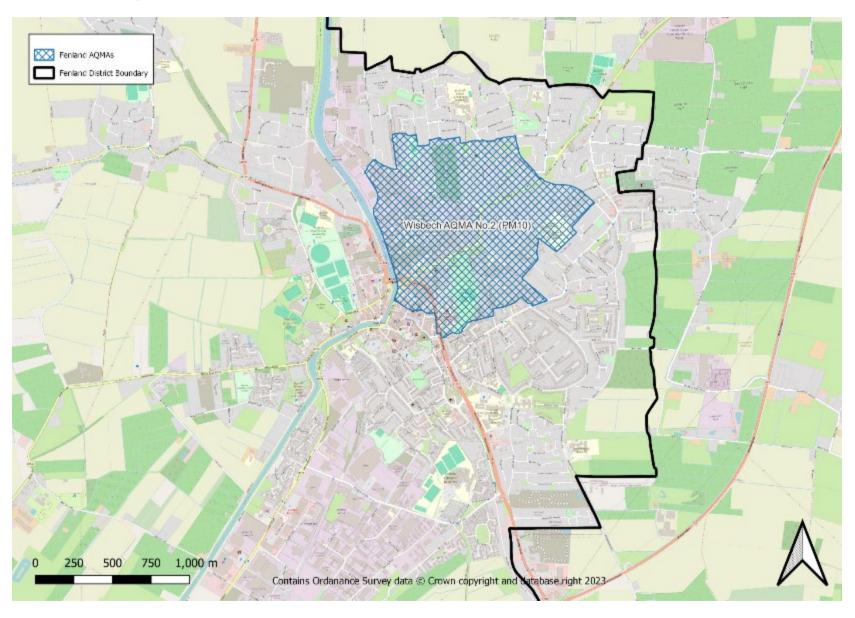
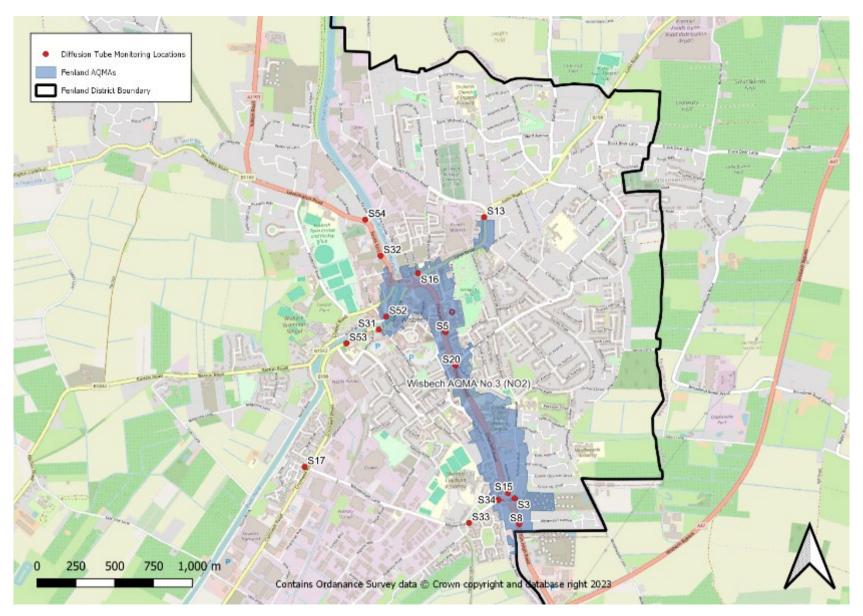


Figure D. 10 – Map showing Wisbech AQMA No. 3 (NO<sub>2</sub>)



# Appendix E: EarthSense Zephyr locations & monitoring results

Table E.1 contains the locations of five EarthSense Zephyr locations that measure NO<sub>2</sub>, O<sub>3</sub>, PM<sub>1</sub>, PM<sub>2.5</sub> and PM<sub>10</sub> over short-term averaging periods of 15-minute, 1-hour, 8-hour and 24-hour.

Table E.1- locations of EarthSense Zephyr

Site ID	Location	Latitude	Longitude
1307	March	52°33'04.9"N	0°05'17.8"E
1395	March	52°33'03.6"N	0°05'16.9"E
1511	March	52°32'59.0"N	0°05'17.5"E
1448	Wisbech	52°39'51.4"N	0°09'22.5"E
1451	Wisbech	52°39'17.2"N	0°10'09.3"E

As per LAQM Technical Guidance (TG22), it is noted that low-cost sensors are not suitable for measuring PM<sub>10</sub> or PM<sub>2.5</sub> annual mean (Section 7.261) for the purposes of demonstrating compliance with annual mean objectives. These instruments are nonetheless useful in identifying short-term pollution events caused by e.g. construction & demolition.

The following tables present the concentrations of each measured pollutants for two sites in March (1307 and 1395). The number of exceedances of relevant short-term LAQM air quality objectives are shown in brackets where relevant. No annualisation or further quality assurance has been conducted for these sites, and these results are indicative and are supplementary to the automatic and non-automatic monitoring conducted by Fenland District Council.

The concentrations across all averaging periods are consistent to one decimal place for the given site & pollutant. Site 1395 exceeded the 8-hour ozone objective (100  $\mu$ g/m³) over 10 times per year (21 times), this occurred between 16:00 21<sup>st</sup> December 2024 and 16:00 28<sup>th</sup> December 2024. The exceedances remained between 100.0-103.4  $\mu$ g/m³.

Table E.2 – average concentrations for measured pollutants (μg/m³) over a 15-minute averaging period at Zephyr low-cost sensor sites deployed in March

Site ID	Location	NO <sub>2</sub>	O <sub>3</sub>	PM <sub>1</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>
1307	March	14.2	14.8	4.8	6.7	10.2
1395	March	17.5	16.3	5.7	8.0	11.6

Table E.3 – average concentrations for measured pollutants (μg/m³) over a 1-hour averaging period at Zephyr low-cost sensor sites deployed in March

Site ID	Location	NO <sub>2</sub>	О3	PM <sub>1</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>
1307	March	14.2 (0)	14.8	4.8	6.7	10.2
1395	March	17.5 (0)	16.3	5.7	8.0	11.6

Table E.4 – average concentrations for measured pollutants (μg/m³) over an 8-hour averaging period at Zephyr low-cost sensor sites deployed in March

Site ID	Location	NO <sub>2</sub>	<b>O</b> <sub>3</sub>	PM <sub>1</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>
1307	March	14.2	14.8 (0)	4.8	6.7	10.2
1395	March	17.5	16.3 (21)	5.7	8.0	11.6

Table E.5 – average concentrations for measured pollutants (μg/m³) over a 24-hour averaging period at Zephyr low-cost sensor sites deployed in March

Site ID	Location	NO <sub>2</sub>	O <sub>3</sub>	PM <sub>1</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>
1307	March	N/A	N/A	N/A	N/A	N/A
1395	March	17.5	16.3	5.7	8.0	11.6 (0)

The location of the five Zephyr low-cost sensors are presented in Figure E.1 (March) and Figure E.2 (Wisbech).

Figure E. 1 – Map showing Zephyr locations in March

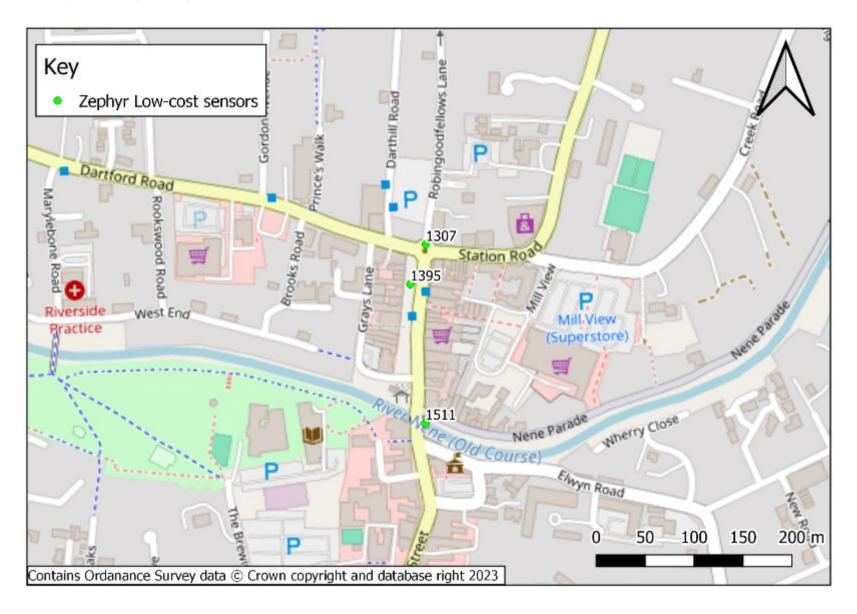
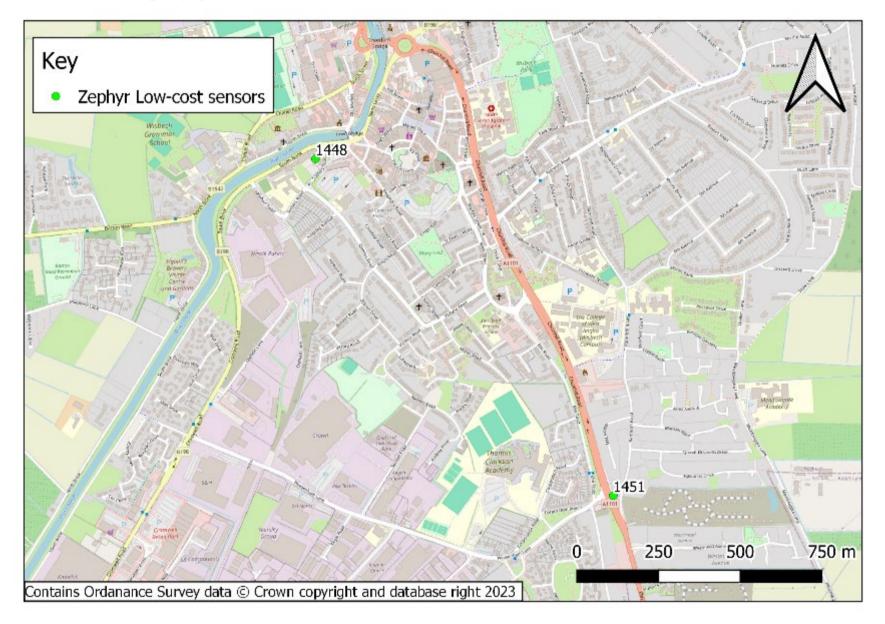


Figure E. 1 – Map showing Zephyr locations in Wisbech



## Appendix F: Summary of Air Quality Objectives in England

Table F.1 – Air Quality Objectives in England<sup>2</sup>

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO <sub>2</sub> )	200μg/m³ not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO <sub>2</sub> )	40μg/m³	Annual mean
Particulate Matter (PM <sub>10</sub> )	50µg/m³, not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM <sub>10</sub> )	40μg/m³	Annual mean
Sulphur Dioxide (SO <sub>2</sub> )	350μg/m³, not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO <sub>2</sub> )	125µg/m³, not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO <sub>2</sub> )	266μg/m³, not to be exceeded more than 35 times a year	15-minute mean

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<sup>&</sup>lt;sup>2</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

## **Glossary of Terms**

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NOx	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5μm or less
QA/QC	Quality Assurance and Quality Control
SO <sub>2</sub>	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.