



2022 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995
Local Air Quality Management

Date: 30th September, 2022

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Executive Summary: Air Quality in Our Area

Air Quality in Fenland

This report demonstrates how Fenland meet air quality objectives. Fenland District Council monitored for the pollutant Nitrogen Dioxide (NO₂) throughout the district (32 diffusion tube monitoring sites); the primary source for this pollutant in the district is vehicle emissions. Automatic (continuous) Sulphur Dioxide (SO₂) monitoring was undertaken at Whittlesey Brickworks; this monitoring is stipulated as a condition of their Part A Environmental Permit. Although 2021 was not a representative year in terms of emissions, due to the continuing Covid-19 pandemic restrictions, the monitoring results have shown an increase in NO₂ in 2021 from 2020, although still below levels typically monitored across the district pre-pandemic. The report also recognises growth in industry and residential developments in the district relevant to other air quality objectives and a raise in public and political concern for local air quality. This report identifies a way forward to monitor and ensure Fenland maintains good air quality.

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas^{1,2}.

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

¹ Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

³ Defra. Air quality appraisal: damage cost guidance, July 2021

⁴ Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

Air Quality Management Areas

Fenland currently have four Air Quality Management Areas (AQMAs); three in Wisbech (SO₂, PM₁₀ and NO₂) and one in Whittlesey for SO₂. The AQMAs can be viewed in Appendix D of this report or on the Defra website via the following link: https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=104. Work is underway to review the AQMAs, although any revocation will be balanced with additional pressure from new developments. With regards to the Whittlesey AQMA, it has been agreed with the Environment Agency that further modelling is to be undertaken before a decision is made regarding this AQMA.

Development in Fenland and new sources of emissions

Fenland is a growing district and has highlighted areas for residential growth within its 2014 Adopted Local Plan. As a result, Fenland has relatively large scale residential developments either in construction or proposed within the planning process. Strategic allocations are located in: West March, South-East March, East and South Chatteris, North and South of Eastrea Road in Whittlesey and East Wisbech. A number of new developments have either received planning permission, or are currently within the planning system, for example at the pre-application stage. The public consultation and pre application consultation for an Energy from Waste Combined Heat and Power Facility has begun and a number of Part A permitted sites have relocated to former brickworks in Whittlesey. The air quality officer will continue to work closely with planning colleagues and the Environment Agency to ensure that any future applications and permits do not have a detrimental effect on air quality.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, and will continue to improve due to national policy decisions, there are some areas where local action is needed to improve air quality further.

The 2019 Clean Air Strategy⁵ sets out the case for action, with goals to reduce exposure to harmful pollutants. The Road to Zero⁶ sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Fenlands air quality action plan is embedded in our Health and Wellbeing Strategy ([FDC](#)) to promote and encourage better development and policy to continue to improve air quality locally.

A review of the Taxi Licensing Policy is an example of where this has had an influence. The Fenland District Council Taxi Licensing Policy and Conditions 2021 – 2026 encourages the use of cleaner, low emission vehicles as hackney carriages or private hire vehicles and will offer a subsidised licence fee for electric or hybrid vehicles from April 2022 ([FDC](#))

This policy also encourages anti idling and supports four action days a year a schools inspecting school contract drivers, ensuring compliance with the policy including a contract condition of no idling in the proximity of school grounds. Over these four inspections no taxi's were found to be idling.

Environmental Permitting monitoring and recording standard operating procedures have been reviewed, resulting in a change to the recording system used for permits and monitoring results for permit compliance. The transition over to an electronic system has increased efficiency and access to data of pollutants of concern in the district.

Due to the pandemic restrictions car sharing initiatives have not been promoted, although the alternative transport policy has continued to develop through a transport and cycling survey.

Air Quality Action day was acknowledged and a social media campaign was undertaken promoting national messages of alternative transport and sources of information to improve your local air quality.

⁵ Defra. Clean Air Strategy, 2019

⁶ DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

March Access redevelopment of Broad Street in March is continuing to progress through the consultation process. The overall aim is to open the high street up to pedestrians and businesses alongside easing the flow of vehicles through the high street.

The local transport strategy continues to develop across the district, with the most noticeable improvement in 2021 at the Guyhirn junction of the A47 and A141 easing the flow of traffic along the A47 reducing congestion back into Guyhirn and Rings End villages.

Conclusions and Priorities

The 2022 ASR shows that air quality in Fenland continues to meet the national objectives for NO₂. The 2021 NO₂ monitoring results showed that levels had increased from 2020, which was to be expected as Covid-19 restrictions were eased, although generally has not increased to levels seen pre pandemic.

Detailed modelling and additional monitoring to support the review and potential revocation of some AQMAs could not be completed and will continue into 2022.

Fenland District Council has been working closely with Statutory Consultees for permit and planning applications of air quality significance for developments including road improvements, housing developments, an Energy from Waste Combined Heat and Power Facility application and Incinerator Bottom Ash Recycling plant application.

Fenlands priorities for the coming year are to maintain involvement in planning of major developments and determine their impact whilst reviewing the AQMA's. Fenland will revoke AQMAs where they are not relevant, but in light of these major developments a review is being undertaken to determine if a variation of the AQMA's is the more appropriate option.

Fenland is seeking options and funding to widen our range of pollutants monitored to understand the districts background pollution levels in light of new developments in the planning and development stages.

Local Engagement and How to get Involved

Members of the public can also 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 Transport and Access Group have undertaken a public consultation on the Walking, Cycling and Mobility Aid Strategy completed in Autumn 2021. A final draft strategy is going to FDC Cabinet for approval in Autumn 2022. More information can be found on our website at; [Community Transport - Fenland District Council](#)

Information on air quality in Fenland can be found on our website:

<https://fenland.gov.uk/airpollution>. Further information on Air Quality and how to improve it can be found on the Clean Air Hub website: <https://www.cleanairhub.org.uk/>. General information on sustainable living and energy saving ideas can be found on the Energy Saving Trust website: <https://energysavingtrust.org.uk/>.

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Team of Fenland District Council with the support and agreement of the following officers and departments:

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This ASR has been approved by:

This ASR has not been submitted prior to being signed off by a Director of Public Health.

Edits after submission will be displayed on line at www.fenland.gov.uk/airquality

If you have any comments on this ASR please send them to Laura Harwood at:

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1 Local Air Quality Management

This report provides an overview of air quality in Fenland District Council during 2021. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) 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 pursuit of the objectives. 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 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 12 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Fenland District Council can be found in Table 2.1. The table provides a description of the four AQMAs that are currently designated within Fenland. Appendix D: Maps of Monitoring Locations and AQMAs 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:

- NO₂ annual mean;
- PM₁₀ 24-hour mean;
- SO₂ 15-minute mean

We are in the process of reviewing all AQMAs in balance with accessing the likely impact new developments will also have in the district.

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 National Highways ?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
Whittlesey AQMA No. 1	01/09/2006	SO ₂ 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	15-minute mean objective is met	Fenland District Council Air Quality Action Plan 2018	Air quality - Fenland District Council
AQMA Wisbech No. 1	01/05/2001	SO ₂ 15 Minute Mean	An area in central Wisbech surrounding the canning factory.	NO	Number of 15 minute mean concentrations >266 µg/m ³ = 1300	Source of pollution removed	Fenland District Council Air Quality Action Plan 2018	Air quality - Fenland District Council
AQMA Wisbech No. 2	01/05/2001	PM ₁₀ 24 Hour Mean	An area in central Wisbech surrounding the canning factory.	NO	Number of daily means > 50 µg/m ³ (gravimetric) = 38 (modelled)	Source of pollution removed	Fenland District Council Air Quality Action Plan 2018	Air quality - Fenland District Council

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by National Highways ?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
AQMA Wisbech No. 3	01/05/2001	NO ₂ 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/m ³	24.7 µg/m ³	Fenland District Council Air Quality Action Plan 2018	Air quality - Fenland District Council

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

1. The latest monitoring results continue to confirm Fenland District Council as achieving air quality objectives, with no exceedances for all sites.
2. Trends are presented and discussed and a comparison with air quality objectives is provided.
3. Additionally, Fenland District Council have added seven new sites deployed in January 2020. The monitoring review demonstrates the Council's proactive and dedicated approach to improving air quality across the area.
4. The Council should consider to continue AQMA revocation work through monitoring and detailed modelling to provide meaningful data to inform further action for the AQMAs.
5. The report includes a link to the Public Health Outcomes Framework, with key indicators included. We encourage this and hope to see this continue in future ASRs.
6. The diffusion tube and AQMA mapping is comprehensive and demonstrates the monitoring network. This clearly shows which sites are inside and outside of the AQMA.
7. The report is well structured and concise and satisfies the relevant criteria to a good standard. The Council should continue their good work.

Fenland District Council has taken forward a number of direct measures during the current reporting year of 2021 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Nine 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 2021 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 Fenland District Council Air Quality Action Plan 2018. Key completed measures are:

- The next phases of the transport access in Wisbech and March as an outcome of the Fenland Transport Study.

Fenland District Council's priorities for the coming year are to continue to engage with the planning process for the Energy from Waste Incinerator application in the South of Wisbech. Work with Whittlesey brickpits to review the SO₂ AQMA and develop a plan to expand monitoring across the district in light of new environmental permitted installations in Whittlesey and major housing developments in March and Wisbech.

Fenland District Council worked to implement these measures in partnership with the following stakeholders during 2021:

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

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 of new development within the district.

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

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Improve traffic management at key junctions - Wisbech Access Strategy	Traffic Management	TUC, Congestion management, traffic reduction	2016		Cambridgeshire & Peterborough Combined Authority (CPCA) Cambridgeshire County Council (CCC)	Government Growth Fund & CPCA	NO	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 will be ready to construct on completion of land procurement in 2022. Commence will start after construction funding is made available and secured.	Lengthy Timescale
2	Improve traffic management - March Area Transport Study	Traffic Management	UTC, Congestion management, traffic reduction	2017	2024 & 2026	Cambridgeshire & Peterborough Combined Authority (CPCA) Cambridgeshire County Council (CCC)	CPCA	No	Partially funded	>£10 million	Planning	Reduced vehicle emissions / Maintain levels below standards	Reduced congestion, Junction improvements, walking and cycling strategy, town centre proposals, new link road	The schemes are currently in detailed design which will be complete by the end of 2022. The full business case will also be complete at the end of 2022. A successful FBC is expected to enable construction funding to be drawn down. The schemes are phased for delivery and completion between 2024 and 2026.	Funding
3	Improve traffic management	Traffic Management	UTC, Congestion management	2019 -	2024 -	FDC, Hatch Regeneris	Future High Streets Fund & CPCA	No	- Funded	> £10 million	Implementation	Reduced vehicle emissions	Part pedestrianisation of key	The project is now at detailed design stage to	First phase successful

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
	– March Town Centre Transformation through Future High Streets Fund		t, traffic reduction									/ Maintain levels below standards	congested areas (Broad Street), reduced congestion, junction improvements	firm up costs and viability for the scheme. The scheme is currently on programme and has not deviated too much from the original plan submitted as part of the Future Highstreets Fund Bid.	, second phase on-going
4	Fletton Liaison Meetings	Environmental Permits	Measures to reduce pollution through PPC Permits going beyond BAT	On-going	On-going	Environment Agency / Whittlesey Brickworks, FDC	Whittlesey Brickworks	NO	Funded	< £10k	Implementation	Maintain levels below standards	Exceedances of emission limits detailed in Environmental Permits	On-going	Face to face meeting stopped during 2020 and 2021. For 2022 it is planned to bring these meeting back to track the progress with the AQMA review.
5	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	NO	Funded	£10k - 50k	Implementation	Maintain levels below standards	Planning response time	On-going	
6	Explore Air Quality automatic	Policy Guidance and	Other policy	2019	2020	Local Authority	Local Transport Fund	NO	Funded	< £10k	Implementation	Provide real-time Air	Purchase and Install sensors	Funding secured and two air quality	Air quality monitors did not

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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
	(continuous) monitoring options	Development Control				Environmental Health						Quality data for PM and NO2		sensors purchased and in place.	provide results during 2019 and service support was withdrawn for them from the service provider in 2020.
7	Review and Expand Diffusion Tube network	Policy Guidance and Development Control	Other policy	2019	Completed (data reported in this report)	Local Authority Environmental Health	FDC	NO	Funded	< £10k	Implementation	Provide NO2 pollution data	Diffusion tube reviewed and expanded	Diffusion tube network successfully reviewed in 2019, diffusion tubes positioned in January 2020 and data from revised network reported on in this report.	Typical NO2 will be determined after a further of years of results to see if current reductions due to the pandemic have been sustained.
8	Transport & Access Group	Promoting Travel Alternatives	Promotion of walking	2016	On-going	FDC	FDC & Hereward Community Rail Partnership	NO	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	

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	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	
															transport. A public consultation on the draft strategy is expected Autumn 2021.	
9	Develop Air Quality Action Plan	Policy Guidance and Development	Control Air Quality Planning and Policy Guidance	2018	2020	Local Authority Environmental Health	FDC	NO	Funded	< £10k	Completed	Maintain levels below standards	Update Plan	Plan published in online and review due in 2022.		

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

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases. The maximum (2018) background concentration in Fenland is 10.6 µg/m³ (<https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>).

Fenland District Council is taking the following measures to address PM_{2.5}:

- Fenland District Council has two sensors which will be placed to measure PM_{2.5} in order to extend their understanding of PM_{2.5} concentrations across the district, particularly at roadside locations. However, during 2021 the providers of the equipment were no longer able to support with the data handling and maintenance required and the data capture could not be achieved for this year. Funding is being sought for their maintenance and installation in 2022.
- The measures discussed in Table 2.2, Section 2.2 above will help in reducing traffic related PM_{2.5};
- Continuing 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; and
- Continuing to consult on planning applications to advise planning conditions for Construction Management Plans, in order to manage dust from construction and demolition activities.
- To pursue options for additional monitoring across the district to understand background concentrations of PM_{2.5}

Key indicators of the state of public health have been developed through the Public Health Outcomes Framework (PHOF) following the Health and Social Care Act 2012. The PHOF data tool, compiled by Public Health England, includes an indicator applicable to air pollution: fraction of mortality attributable to particulate pollution. The fraction of mortality attributed to particulate air pollution (2019 data) in Fenland is 5.3%, which has reduced by

0.1% from 2018. The value is slightly lower than the East of England region as a whole which was 5.5. in 2019, and is higher than the average for England (5.1%).

The above measures should help to improve the fraction of mortality attributed to particulate pollution for the air quality indicators in Fenland, along with measures implemented at national level.

There are currently no smoke control areas within the district.

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

This section sets out the monitoring undertaken within 2021 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 2017 and 2021 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Forterra Building Products Limited (Whittlesey Brick Pits) undertake SO₂ continuous monitoring as a condition for their Environment Agency Permit. A summary of this monitoring is provided to Fenland District Council as part of a Liaison Group and for the purposes of this report. Monitoring is undertaken in two locations in the vicinity of the brickworks in Whittlesey, one to the east-southeast of the former Saxon Works (Park Lane AM1) and one to the North of Kings Dyke (Bradley Fen AM2)

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

3.1.2 Non-Automatic Monitoring Sites

Fenland District Council undertook non- automatic (i.e. passive) monitoring of NO₂ at 32 sites during 2021. 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 (NO₂)

Error! Reference source not found. and Table A.3 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. 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 2020 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.

Error! Reference source not found. in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200µg/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). The levels across the district show a general increase from the 2020 data, which is likely to be a result of restriction from the Covid-19 pandemic being lifted during the year. Levels have not increased to that experienced in 2019 (pre-pandemic). Two sites showed a particular month where levels were significantly higher than expected, (S14, Chatteris recorded a level of 181.1 in May 2020, and site 17 Weasenham Lane Wisbech showed a level of 69.5 in September) It is thought that the Chatteris level is likely to be a data entering error, as 18.1 would be a level typically expected. At Weasenham Lane the elevated level has been contributed to road works that occurred in that area during that monitoring period. Neither result have resulted in an exceedance of the annual mean and both results have been left in the data set.

Five additional sites were monitored from January 2020, data from 2021 is showing areas of concern in two of these locations, site 26 Peas Hill Roundabout March and site 31 Southbrink (White Lion) Wisbech, although neither of these sites have exceeded the annual mean in 2021.

Overall, there has been good data capture at all monitoring locations across the district (>90%).

As all annual mean nitrogen dioxide concentrations were well below 60 µg/m³, it is unlikely there were any exceedances of the 1-hour mean nitrogen dioxide objective at any of the monitoring sites in 2021.

3.2.2 Particulate Matter (PM₁₀)

Fenland District Council have purchased sensors for monitoring PM₁₀. The data are not included in this ASR due to queries with the data.

3.2.3 Particulate Matter (PM_{2.5})

Fenland District Council have purchased sensors for monitoring PM_{2.5}. The data are not included in this ASR due to queries with the data.

3.2.4 Sulphur Dioxide (SO₂)

Table A.4 in Appendix A compares the ratified continuous monitored SO₂ concentrations for 2020 with the air quality objectives for SO₂.

The results confirm that all the sulphur dioxide objectives are being achieved at Park Lane (AM1) and Bradley Fen (AM2).

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)
AM1	Park Lane	Urban Background	526382	296859	SO2	YES AQMA 1	UV Fluorescence	0.0	N/A	1.5
AM2	Bradley Fen	Industrial	523924	297974	SO2	YES AQMA 1	UV Fluorescence	0.0	N/A	1.5

Notes:

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

(2) N/A if not applicable

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S1	A605 Whittlesey	Kerbside	527059	297205	NO2	No	3.0	1.0	No	2.3
S2	March Station	Roadside	541980	297864	NO2	No	4.0	1.7	No	2.4
S3	Ramnoth Road	Roadside	546860	308532	NO2	Yes, Wisbech No.3	4.0	1.1	No	2.4
S4	Orchard Street R/A	Roadside	526849	297246	NO2	No	6.0	2.0	No	2.3
S5	Churchill Road	Roadside	546415	309602	NO2	Yes, Wisbech No. 1,2&3	3.0	2.0	No	2.4
S6	Kings Dyke	Roadside	525293	297406	NO2	No	10.0	1.6	No	2.4
S7	Cemetery Road R/A	Roadside	527291	297159	NO2	No	5.0	2.0	No	2.3
S8	Westmead Ave	Kerbside	546890	308368	NO2	Yes, Wisbech No. 3	12.0	0.8	No	2.4
S9	Thorney Toll	Roadside	534526	303907	NO2	No	1.0	1.9	No	2.9
S10	Coates	Kerbside	530615	297705	NO2	No	3.0	1.0	No	2.7
S11	St Peters Church, March	Roadside	541653	296457	NO2	No	12.0	1.9	No	2.4

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)
S12	Lynn Road AWS	Urban Background	546592	310191	NO2	Yes, Wisbech No. 1&2	10.0	N/A	No	2.4
S13	Lynn Road / Mt Pleasant	Roadside	546664	310342	NO2	Yes Wisbech No. 1 & 2	3.0	1.4	No	2.6
S14	Aldi, Chatteris	Roadside	538976	287094	NO2	No	5.0	2.1	No	2.2
S15	Weasenham Lane	Roadside	546818	308568	NO2	Yes Wisbech No. 3	4.0	1.4	No	2.4
S16	Lynn Road R/A	Kerbside	546238	309981	NO2	Yes Wisbech 1,2 &3	1.0	1.0	No	2.4
S17	Weasenham Lane / Cromwell Road	Roadside	545509	308735	NO2	No	2.0	2.0	No	2.3
S18	New Road	Roadside	539475	286275	NO2	No	2.0	2.7	No	2.3
S19	Broad St March	Roadside	541662	296814	NO2	No	1.0	2.1	No	2.4
S20	Napier Court	Roadside	546481	309387	NO2	Yes Wisbech No. 1 & 3	3.0	1.8	No	2.5
S21	Norfolk Court	Roadside	541838	296987	NO2	No	2.0	1.2	No	2.4
S22	Wildboar / Station Road	Roadside	527357	296554	NO2	No	5.0	1.4	No	2.3
S23	West End, Whittlesey	Roadside	526348	297468	NO2	No	1.0	3.0	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) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S24	Hocking Court	Roadside	541779	296864	NO2	No	1.0	1.7	No	2.4
S25	Gildenburgh Crescent	Roadside	528091	297183	NO2	No	4.0	4.8	No	2.3
S26	Peas Hill R/A	Kerbside	540245	297613	NO2	No	5.0	1.0	No	2.1
S27	Lidl, March	Roadside	541562	296920	NO2	No	6.0	1.1	No	2.4
S28	Tesco/Greggs, March	Roadside	541692	296840	NO2	No	1.0	2.1	No	2.3
S29	Barnardos, March	Roadside	541654	296055	NO2	No	3.0	1.8	No	2.3
S30	Nisa, Chatteris	Roadside	539332	286176	NO2	No	1.0	1.4	No	2.3
S31	White Lion, Wisbech	Roadside	545986	309618	NO2	Yes Wisbech, No.1	1.0	1.8	No	2.2
S32	North End, Wisbech	Roadside	545997	310092	NO2	Yes, Wisbech No. 1	5.0	2.5	No	2.4

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
S1	527059	297205	Kerbside	100	98.6	23.3	21.7	21.3	15.8	17.8
S2	541980	297864	Roadside	92	98.6	22.8	20.0	20.3	15.7	16.6
S3	546860	308532	Roadside	100	98.6	25.7	21.1	21.6	17.7	18.1
S4	526849	297246	Roadside	92	98.6	24.7	22.2	22.1	17.2	16.9
S5	546415	309602	Roadside	83	98.6	35.7	28.2	30.1	23.7	26.8
S6	525293	297406	Roadside	100	98.6	20.6	16.1	19.0	15.1	15.4
S7	527291	297159	Roadside	100	98.6	23.3	20.6	18.3	16.2	16.1
S8	546890	308368	Kerbside	92	98.6	20.3	29.1	28.7	23.4	23.9
S9	534526	303907	Roadside	83	98.6	20.8	19.3	19.9	15.0	17.0
S10	530615	297705	Kerbside	100	98.6	22.7	18.6	18.6	13.9	14.9
S11	541653	296457	Roadside	100	98.6	19.9	20.5	19.4	15.5	17.1
S12	546592	310191	Urban Background	92	98.6	16.1	14.8	16.6	14.3	13.3
S13	546664	310342	Roadside	100	98.6	26.3	27.2	25.5	26.9	28.7

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 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
S14	538976	287094	Roadside	100	98.6	18.9	17.2	17.9	16.0	27.8
S15	546818	308568	Roadside	100	98.6	33.7	29.7	30.3	24.4	25.5
S16	546238	309981	Kerbside	100	98.6	29.7	30.6	29.6	23.5	24.6
S17	545509	308735	Roadside	100	98.6	20.4	17.6	18.9	15.2	18.6
S18	539475	286275	Roadside	100	98.6	14.8	13.7	14.0	11.6	11.2
S19	541662	296814	Roadside	100	98.6	35.8	30.1	28.7	25.4	28.5
S20	546481	309387	Roadside	100	98.6	29.0	27.3	26.9	21.8	24.5
S21	541838	296987	Roadside	100	98.6	-	19.1	20.2	15.6	15.3
S22	527357	296554	Roadside	100	98.6	-	16.1	15.9	14.2	13.7
S23	526348	297468	Roadside	100	98.6	-	22.4	22.9	16.3	17.4
S24	541779	296864	Roadside	100	98.6	-	26.2	26.5	19.3	19.3
S25	528091	297183	Roadside	92	98.6	-	16.7	16.8	15.7	15.1
S26	540245	297613	Kerbside	100	98.6	-	-	-	27.7	30.8
S27	541562	296920	Roadside	100	98.6	-	-	-	17.1	18.6

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 2021 (%) ⁽²⁾	2017	2018	2019	2020	2021
S28	541692	296840	Roadside	100	98.6	-	-	-	21.9	23.0
S29	541654	296055	Roadside	100	98.6	-	-	-	17.7	18.3
S30	539332	286176	Roadside	100	98.6	-	-	-	17.1	17.1
S31	545986	309618	Roadside	100	98.6	-	-	-	30.7	34.7
S32	545997	310092	Roadside	92	98.6	-	-	-	17.2	18.2

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

Diffusion tube data has been bias adjusted.

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

Notes:

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

Exceedances of the NO₂ annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO₂ annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG16 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%).

3.2.5 Figure A.1 – Trends in Annual Mean NO₂ Concentrations

Figure A.1 presents NO₂ annual mean concentrations for sites S1 to S32 between years 2017 to 2021. There are no exceedances of the annual mean objective in 2021. An increase in levels from 2020 has been experienced but there is a general trend of reduction experienced across the sites monitored pre 2020.

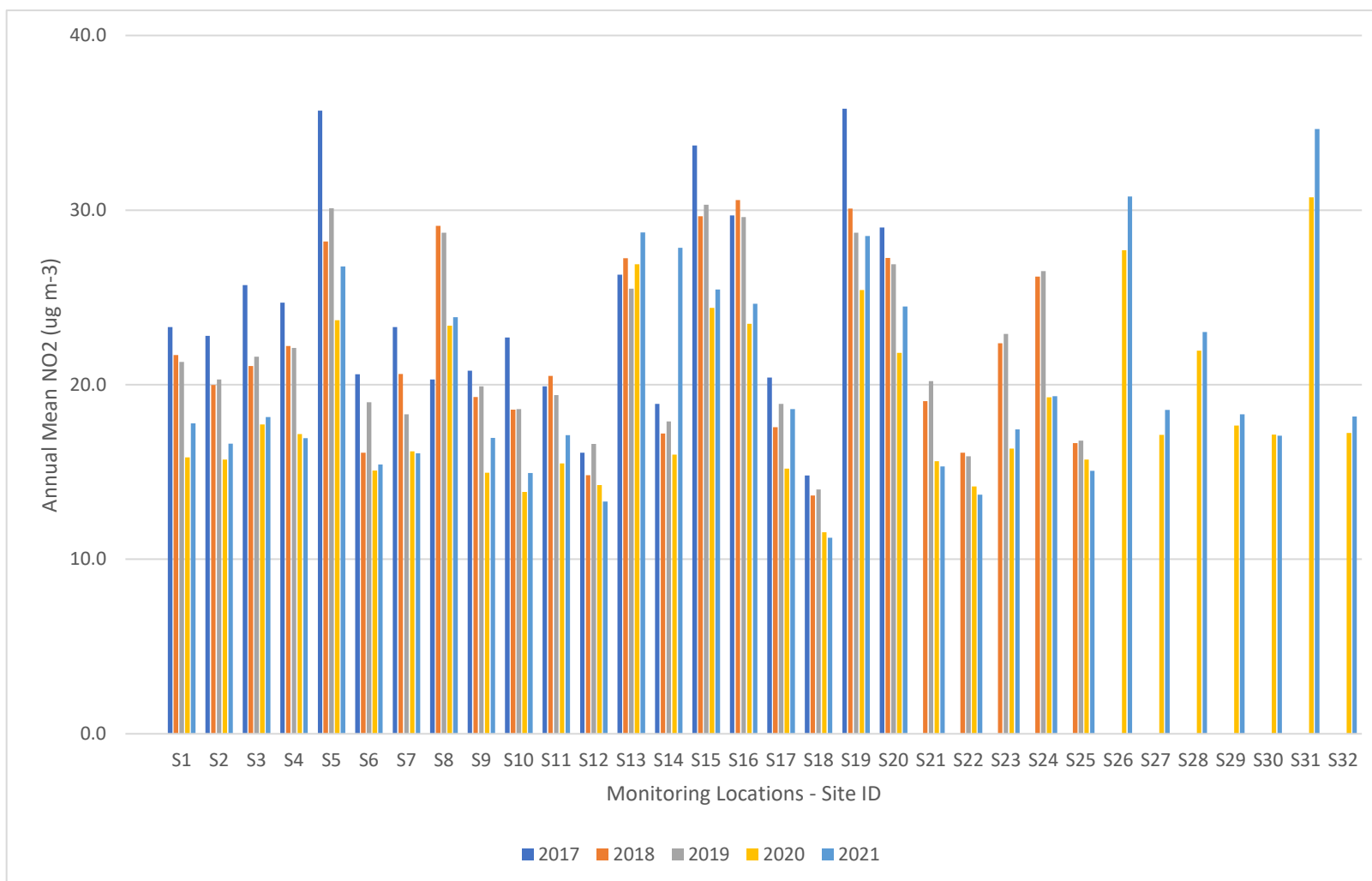


Figure A.2 – Trends in Annual Mean NO₂ Concentrations

Figure A.2 presents NO₂ annual mean concentrations for sites within Wisbech AQMA (NO₂) between years 2017 to 2021. There are no exceedances of the annual mean objective in 2021. An increase in levels from 2020 has been experienced but there is a general trend of reduction experienced across the sites monitored pre 2020.

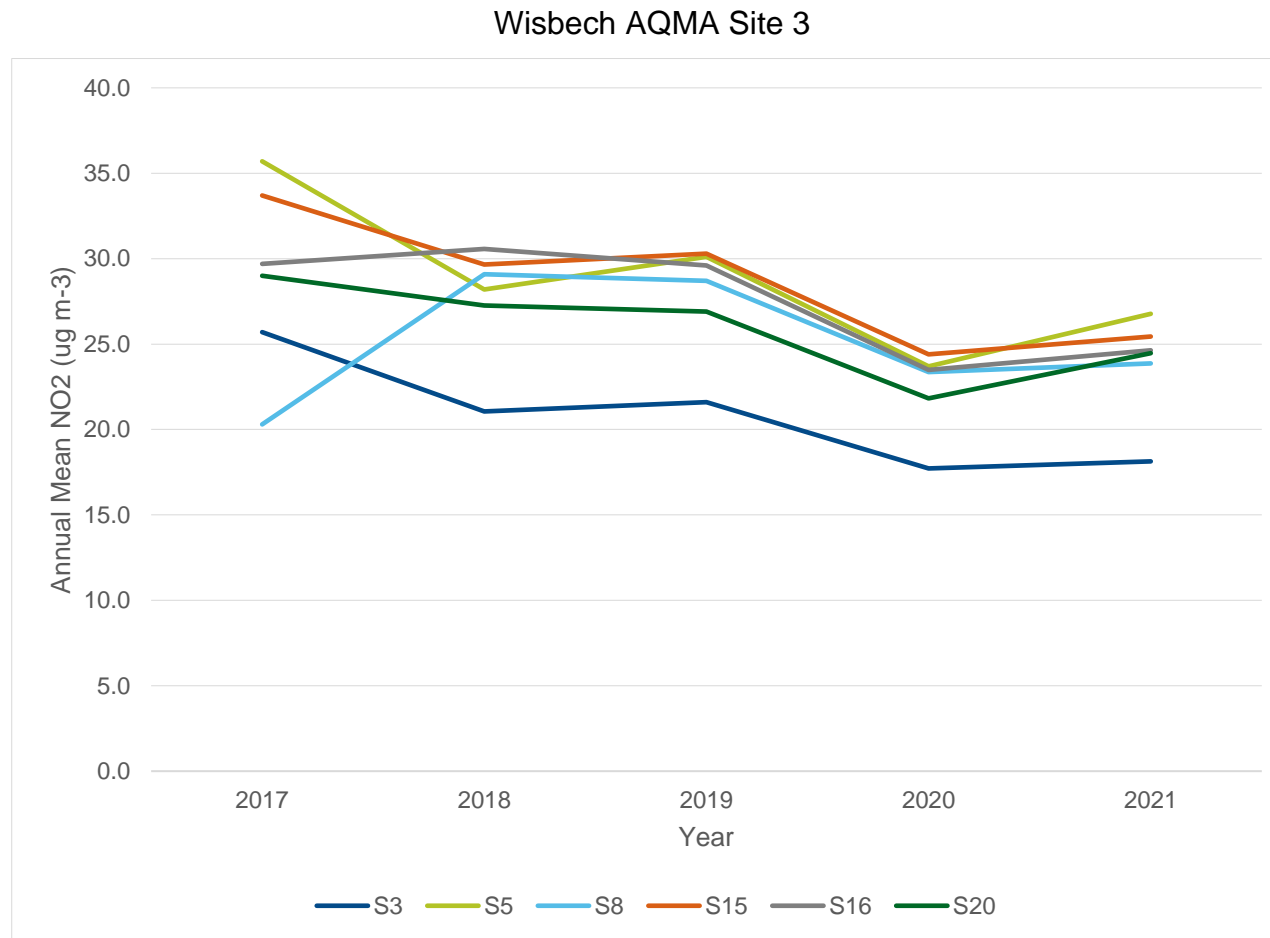


Table A.4 – SO₂ 2021 Monitoring Results, Number of Relevant Instances

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2021 (%) ⁽²⁾	Number of 15-minute Means > 266µg/m ³	Number of 1-hour Means > 350µg/m ³	Number of 24-hour Means > 125µg/m ³
AM1	526382	296859	Urban Background	100	100	1	0	0
AM2	523924	297974	Industrial	100	99.73	3	0	0

Notes:

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

Exceedances of the SO₂ 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 2021

Table B.1 – NO₂ 2021 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northin g)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (x.x)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S1	527059	297205	33.4	24.3	20.6	19.1	20.4	18.0	18.7	15.7	21.8	21.6	29.8	30.2	22.8	17.8	-	
S2	541980	297864	26.0	20.2	22.5	18.7		18.0	16.4	15.1	18.5	23.1	30.2	25.6	21.3	16.6	-	
S3	546860	308532	31.3	25.6	25.0	18.0	19.9	17.6	16.0	17.0	22.3	24.8	32.1	29.4	23.3	18.1	-	
S4	526849	297246	35.0	24.6	23.1	14.9	21.2	16.2	14.1	12.8	23.5	26.0		27.3	21.7	16.9	-	
S5	546415	309602	43.7	32.7	34.2	26.2			25.6	26.5	33.8	38.0	42.0	40.5	34.3	26.8	-	
S6	525293	297406	32.3	21.8	18.9	13.0	17.0	14.7	13.8	12.4	19.5	22.2	26.2	25.6	19.8	15.4	-	
S7	527291	297159	29.2	22.5	19.9	15.3	17.4	12.6	13.4	14.7	21.4	23.3	29.4	28.1	20.6	16.1	-	
S8	546890	308368	39.3	24.6	34.8	24.1	30.0	23.3	25.4	23.7	31.9		43.4	36.1	30.6	23.9	-	
S9	534526	303907	26.9	22.9	19.1	15.3		15.9	18.3	17.0	24.3		29.0	28.7	21.7	17.0	-	
S10	530615	297705	29.2	20.8	21.8	16.0	17.0	10.9	13.2	14.7	15.5	22.5	23.5	24.6	19.1	14.9	-	
S11	541653	296457	31.1	22.7	24.8	16.4	18.5	18.5	16.2	18.1	18.0	24.8	29.8	24.1	21.9	17.1	-	
S12	546592	310191	28.1	18.1	19.3	13.9	13.9	13.0	10.9	13.6	14.1	18.7		23.9	17.1	13.3	-	
S13	546664	310342	44.5	41.3	39.2	34.4	30.8	30.8	30.6	30.2	40.5	38.6	41.3	39.9	36.8	28.7	-	
S14	538976	287094	28.1	22.9	24.1	22.2	181.1	19.1	18.3	13.4	22.7	23.1	27.1	26.4	35.7	27.8	-	
S15	546818	308568	44.9	28.1	36.9	27.1	33.8	26.2	28.8	21.2	35.3	35.9	43.0	30.4	32.6	25.5	-	
S16	546238	309981	35.3		34.4	30.6	27.3	27.7	26.7	21.0	32.7	35.3	36.9	39.5	31.6	24.6	-	
S17	545509	308735	27.9	26.2	18.9	15.9	20.2	13.9	16.0	10.7	69.5	20.6	20.1	26.2	23.8	18.6	-	
S18	539475	286275	23.7	19.1	14.1	11.8	12.4	9.7	9.6	7.1	14.3	15.5	18.9	16.4	14.4	11.2	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northin g)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (x.x)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S19	541662	296814	44.1	33.0	41.1	29.2	34.8	36.5	30.2	30.2	33.4	40.3	47.4	38.6	36.6	28.5	-	
S20	546481	309387	39.3	36.7	31.7	29.6	25.0	25.6	25.6	23.3	34.6	33.0	35.9	36.1	31.4	24.5	-	
S21	541838	296987	28.7	15.1	21.8	16.0	16.8	12.2	14.5	17.0	18.7	22.7	27.5	24.6	19.6	15.3	-	
S22	527357	296554	27.5	19.7	17.6	15.9	16.4	13.4	8.4	8.0	17.4	16.8	22.7	26.9	17.6	13.7	-	
S23	526348	297468	34.8	23.3	23.7	15.3	18.3	12.4	13.9	15.1	21.0	25.4	36.5	28.7	22.4	17.4	-	
S24	541779	296864	33.6	20.8	26.9	18.5	24.8	19.5	17.8	19.5	25.6	29.2	31.3	30.0	24.8	19.3	-	
S25	528091	297183	33.0	18.5	20.4		15.9	11.5	12.0	12.4	17.2	20.1	27.9	23.5	19.3	15.1	-	
S26	540245	297613	40.9	43.4	38.6	37.2	42.4	38.0	37.6	32.7	41.8	41.8	37.4	41.6	39.5	30.8	-	
S27	541562	296920	31.9	25.8	24.4	17.4	21.6	19.3	18.7	19.3	23.5	25.0	31.1	27.5	23.8	18.6	-	
S28	541692	296840	31.5	36.7	31.5	32.3	31.9	26.0	27.1	19.9	32.1	28.8	29.2	27.1	29.5	23.0	-	
S29	541654	296055	30.2	26.0	25.6	22.7	19.5	22.3	20.2	12.2	20.6	23.7	30.8	27.7	23.5	18.3	-	
S30	539332	286176	31.3	22.2	23.1	20.6	17.6	19.9	18.3	9.9	20.6	23.7	27.7	27.9	21.9	17.1	-	
S31	545986	309618	46.2	51.4	42.6	34.4	47.8	39.2	40.9	31.5	52.0	48.5	45.8	52.9	44.4	34.7	-	
S32	545997	310092		24.1	27.1	22.0	17.6	21.2	20.1	18.0	21.4	27.1	28.1	29.8	23.3	18.2	-	

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.TG16.

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 2021 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Fenland District Council During 2021

Fenland District Council has not identified any new or changes sources (as outlined in Technical Guidance TG.16) relating to air quality within the reporting year of 2021. A site recycling IBA in the planning process have been raised for consideration on completion of its Environmental Permit application.

Additional Air Quality Works Undertaken by Fenland District Council During 2021

Environmental Permitting

- One new Part B permit issued for the use of mobile plant for crushing & screening
- No changes to Part B risk ratings awarded to existing permit holders
- One surrender of an existing Part B permit issued for the blending of cement and batching of ready-mixed concrete
- One new Part A permit issued involving –
 - Animal, Vegetable And Food; Disposing Etc Animal Carcasses Etc >10 T/Day
 - Combustion; Waste Derived Fuel =>3mw But <50mw
 - Recovery Or A Mix Of Recovery And Disposal Of > 50 T/D Non-Hazardous Waste (> 100 T/D If Only Ad) Involving Biological Treatment

March Future High Street Fund (Broad Street update)

The enhancement scheme is progressing well. The project is now at detailed design stage. The scheme is currently on programme. Details of the scheme can be found at

[March Future High Streets Fund - Fenland District Council](#)

Transport

Wisbech Access Strategy is progressing with phase one of three fully designed and ready for construction pending procurement and funding. More information can be found at [Wisbech Access Strategy - Fenland District Council](#)

March Area Transport Study – the schemes are currently in detailed design which will be complete by the end of 2022.

Fenland Transport and Access Group – A public consultation on the Walking, Cycling and Mobility Aid Strategy completed in Autumn 2021. A final draft strategy is going to FDC Cabinet for approval in Autumn 2022. Funding has been secured for new walking and cycling maps for Chatteris and March and an update to the Wisbech Map. These are due for completion in Spring 2023. A walking and cycling map for Whittlesey will be complete Summer 2022. Feasibility study funding has been secured for the Whittlesey to Peterborough NCN63 route. This study should be complete Spring/Summer 2023. Funding applications have been submitted to secure money to extend the Transport Champions Scheme and develop a travel buddy project (assisting people and giving confidence to use public transport) and we are waiting for the outcome of the applications. Further information can be found online at [Fenland Cycling, Walking and Mobility Improvement Strategy - Fenland District Council](#)

Planning Development

Fenland has seen an increase in the number of developments across the district. These applications have been considered for the impact on air quality, mainly through the introduction of new receptors to areas, but also through new pollutants being introduced to the district.

Application Ref	Location	Description of proposal
F/YR20/1235/O	Land South of Bridge Lane, Wimblington	Erect up to 88 dwellings

F/YR21/0154/O	Lorry Park Norwood Industrial Estate Norwood Road, March	Erect up to 52 flats
CCC/21/024/FUL	Former Saxon Brickworks, off Peterborough Road, Whittlesey	Importation, storage, processing including use of trommel, picking and recycling of 250,000 tonnes per annum of incinerator bottom ash (IBA) and 50,000 tonnes per annum of construction and demolition waste, for exportation for use as incinerator bottom ash secondary aggregates (IBAA).
F/YR21/0284/F	W H Feltham and Son Limited Estover Road, March	Erect 56 bed a care home
F/YR21/0654/F	Land North Of Gildenburgh Water Eastrea Road Whittlesey	Erect 203 dwellings
F/YR21/4002/LACON	Planning LACON County Road March Cambridgeshire	Consultation from MVV Environment Ltd for Medworth Energy from Waste Combined Heat and Power Facility
F/YR21/0852/O	Fridaybridge Agricultural Camp, 173 March Road	Erect up to 102 dwellings, a retail unit and sports changing facilities
F/YR21/0981/F	Land North Of Wenny Estate, Chatteris	Erect 93 dwellings
CCC/21/121/FUL	Coopers Farm, Land 500 Metres Southeast Of Langwood Fen Farm,	Creation of two irrigation reservoirs by the extraction and export of sand and gravel and the extraction of clay; infilling a redundant irrigation

	Langwood Fen Drove, Chatteris	reservoir with imported inert material.
F/YR21/1013/F	Land West Of 180 To 200 Elm Road, March	Erect 41 dwellings
F/YR21/1207/F	Storage Building At Dagless Limited Land North Of Brigstock Road, Wisbech	Installation of bio-mass boiler with 10.9m high flue, 10.0m high silo, 8.8m high filter
F/YR21/1072/FDC	Land East Of Bevills Close And North Of Eastmoor Lane Doddington	Erect 47 dwellings
F/YR21/1175/F	Land East Of York Lodge Gaul Road March	Erect 65 dwellings
F/YR21/1264/F	Land North Of Goldleaf Industrial Sandall Road, Wisbech	Erect 7no industrial/commercial units and 2.0 metres high (approx) weld mesh fence and gates
F/YR21/1360/O	Land North East Of 3-31 Hemmerley Drive, Whittlesey	Erect up to 58 dwellings

Pre-applications

Application Ref	Location	Description of proposal
21/0037/PREAPP	Land at Womb Farm Doddington Road, Chatteris	Erect 248 dwellings

21/0039/PREAPP	Land South And West of 300 Eastrea Road, Whittlesey	Erect supermarket (approx 1,315sqm)
21/0048/PREAPP	Land South Of March Trading Estate Westry Avenue, March	Erect 39 x Commercial Units, 17 x Commercial Retail Units, 1 x Retail Store and 1 x Drive-through Takeaway
21/0060/PREAPP	Land North Of 58-114 Knights End Road, March	Erect 300 dwellings
21/0073/PREAPP	Land East of Halfpenny Lane, Wisbech	Residential Development of approx 350 dwellings
21/0092/PREAPP	Land North Of 17-31 Gosmoor Lane, Elm	To erect 63 dwellings
21/0099/PREAPP	Land South Of Furlong Farm First Furlong Drove, Chatteris	Erect industrial estate (Use Classes E, B2 and B8)
21/0111/PREAPP	Land East Of 34-40 Wimblington Road, March	Erect 54 dwellings

QA/QC of Diffusion Tube Monitoring

Diffusion Tube Annualisation

All diffusion tube monitoring locations within Fenland District Council recorded data capture of 75% therefore it was not required to annualise any monitoring data.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2022 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.TG16 provides

guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Fenland District Council have applied a national bias adjustment factor of 0.78 to the 2021 monitoring data. A summary of bias adjustment factors used by Fenland District Council over the past five years is presented in Socotec (formerly ESG) 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.

Fenland District Council does not have any automatic analysers with which a collocation study could be undertaken, therefore a bias adjustment factor was obtained from the national bias adjustment database which is available at: <http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>. Adjustment factors are derived from data from diffusion tubes which were co-located with real-time analysers. Socotec, 50% triethanolamine (TEA) in acetone for 2021 gave an adjustment factor of 0.78 which has been applied to the Fenland data (see spreadsheet below).

In the summary of Laboratory Performance in AIR NO₂ Proficiency Testing Scheme, Socotec (formerly ESG) scored 100% in all the periods of 2021 where data are available.

Table C.1.

Socotec (formerly ESG) 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.

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triethanolamine (TEA) in acetone for 2021 gave an adjustment factor of 0.78 which has been applied to the Fenland data (see spreadsheet below).

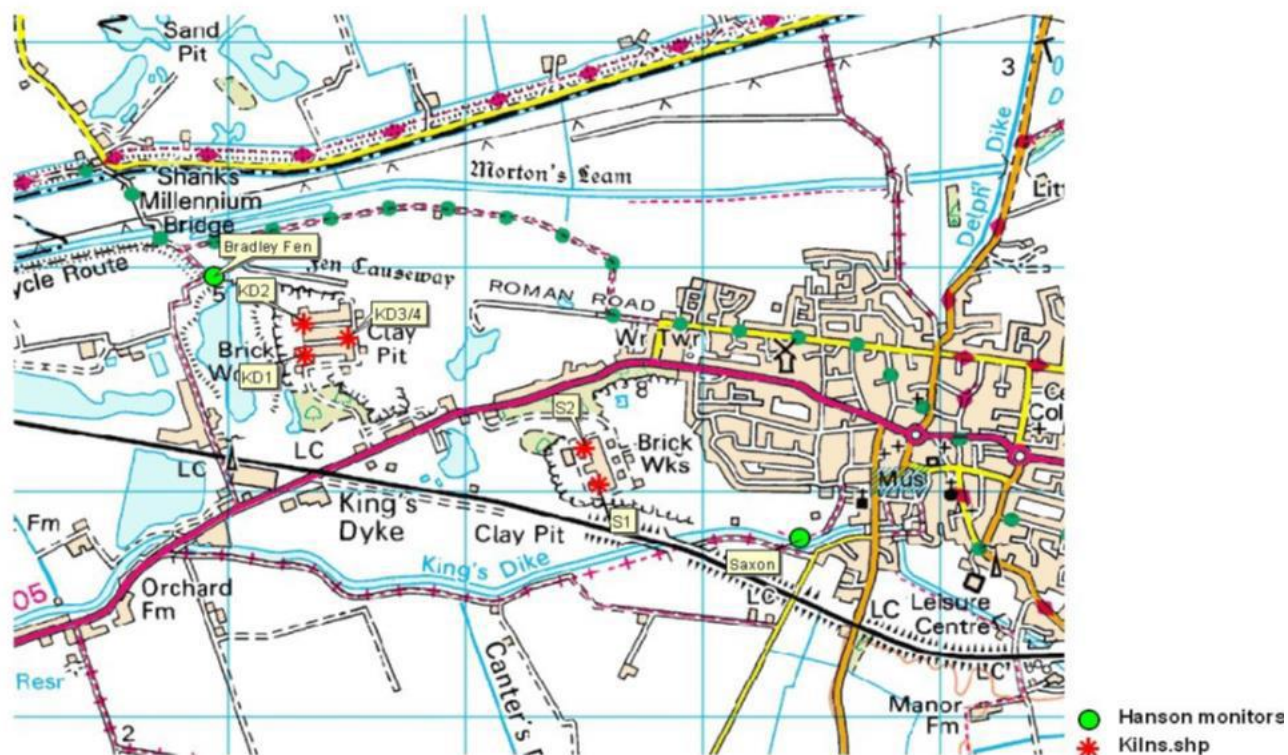
In the summary of Laboratory Performance in AIR NO₂ Proficiency Testing Scheme, Socotec (formerly ESG) scored 100% in all the periods of 2021 where data are available.

Table C.1 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	National	06/22	0.78
2020	National	09/19	0.76
2019	National	06/18	0.75
2018	National	09/17	0.77
2017	National	06/16	0.77

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Map of Automatic Monitoring Sites run by Forterra in Whittlesey



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Note: In 2021 Kilns S1 and S2 were demolished and the site has been redeveloped into an IBA recycling facility.

Figure D.2 – Map of AQMAs and Non-Automatic Monitoring Sites in Wisbech

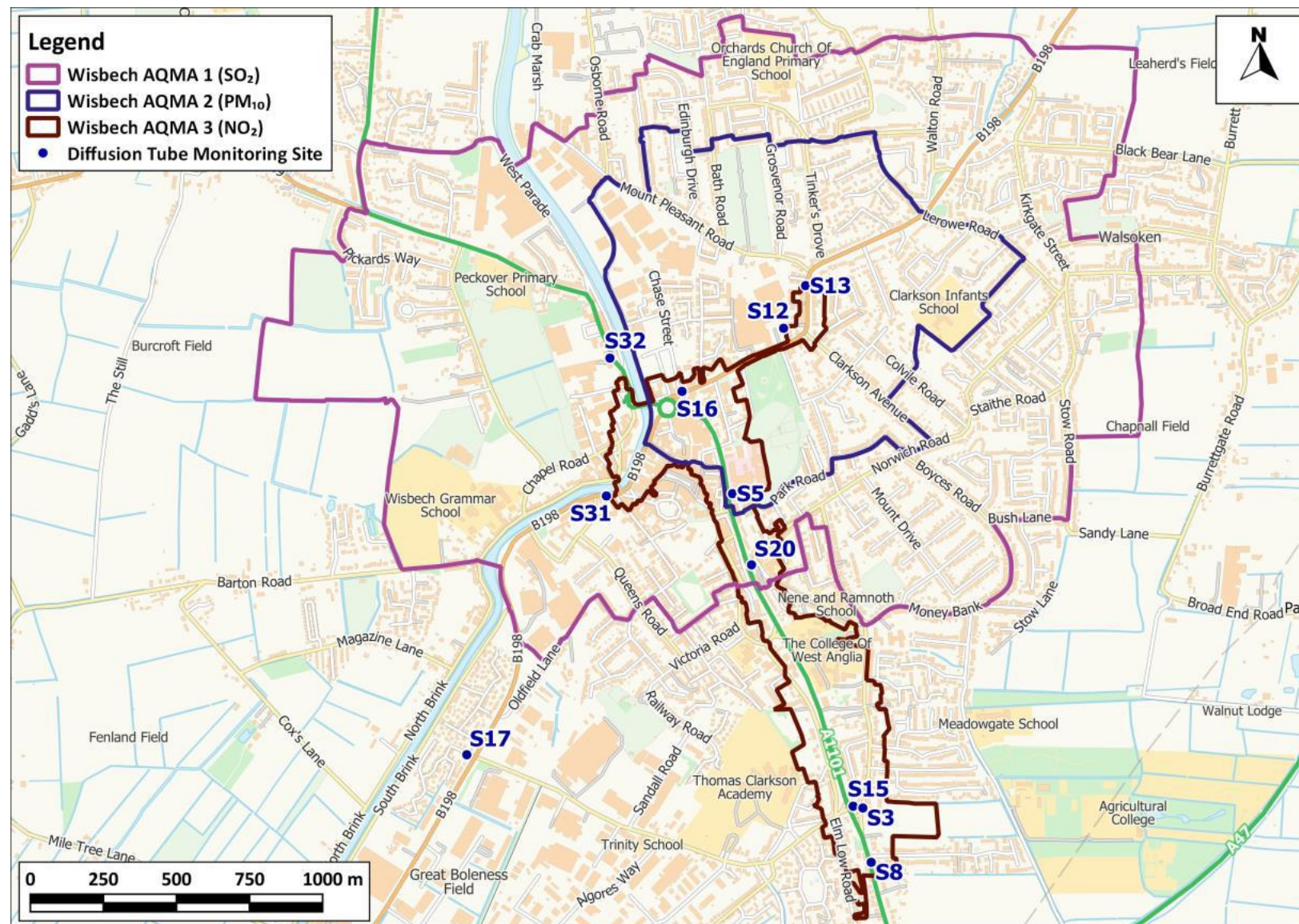


Figure D.3 – Map of the AQMA and Non-Automatic Monitoring Sites in Whittlesey

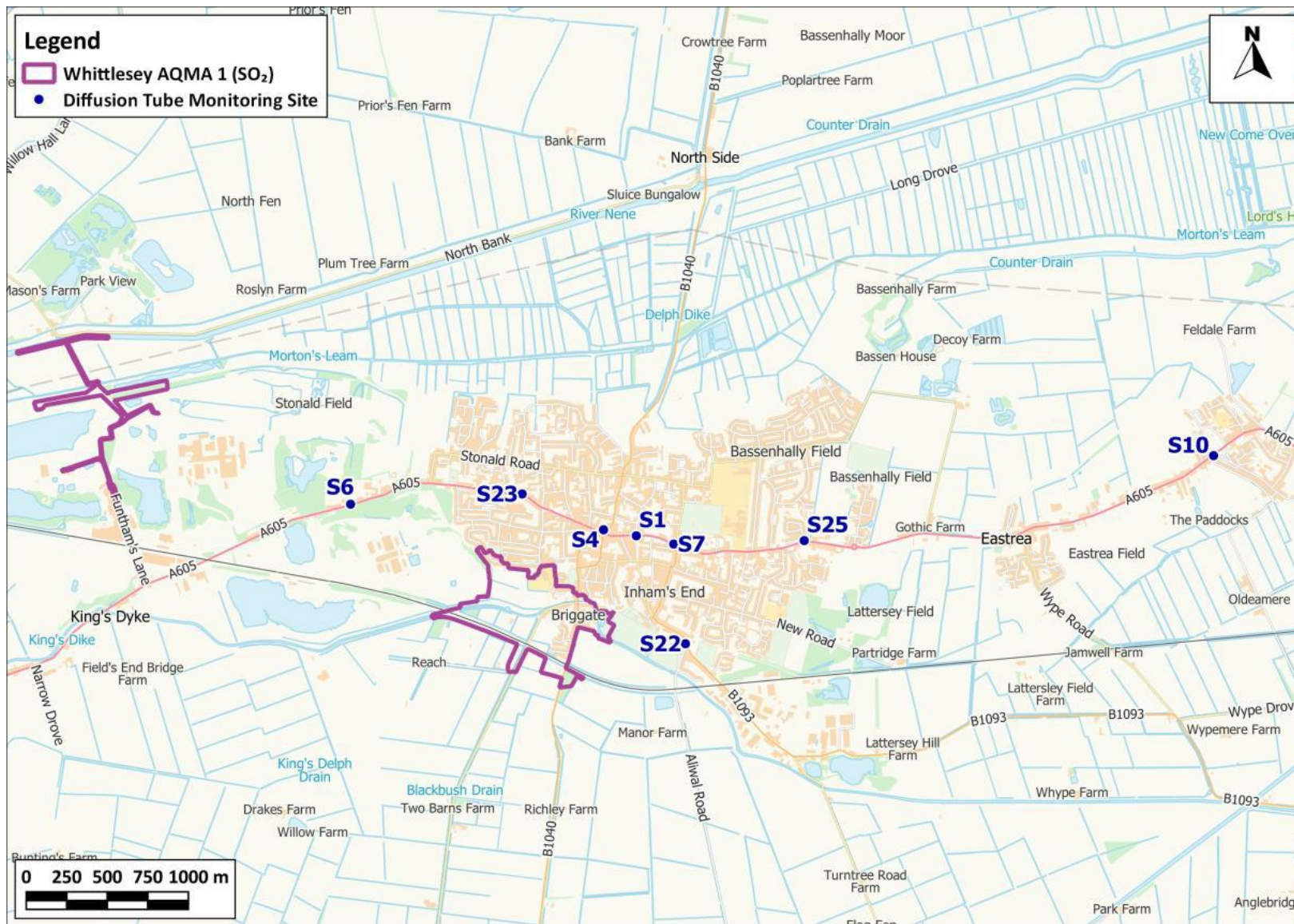


Figure D.4 – Map of Non-Automatic Monitoring Sites in March

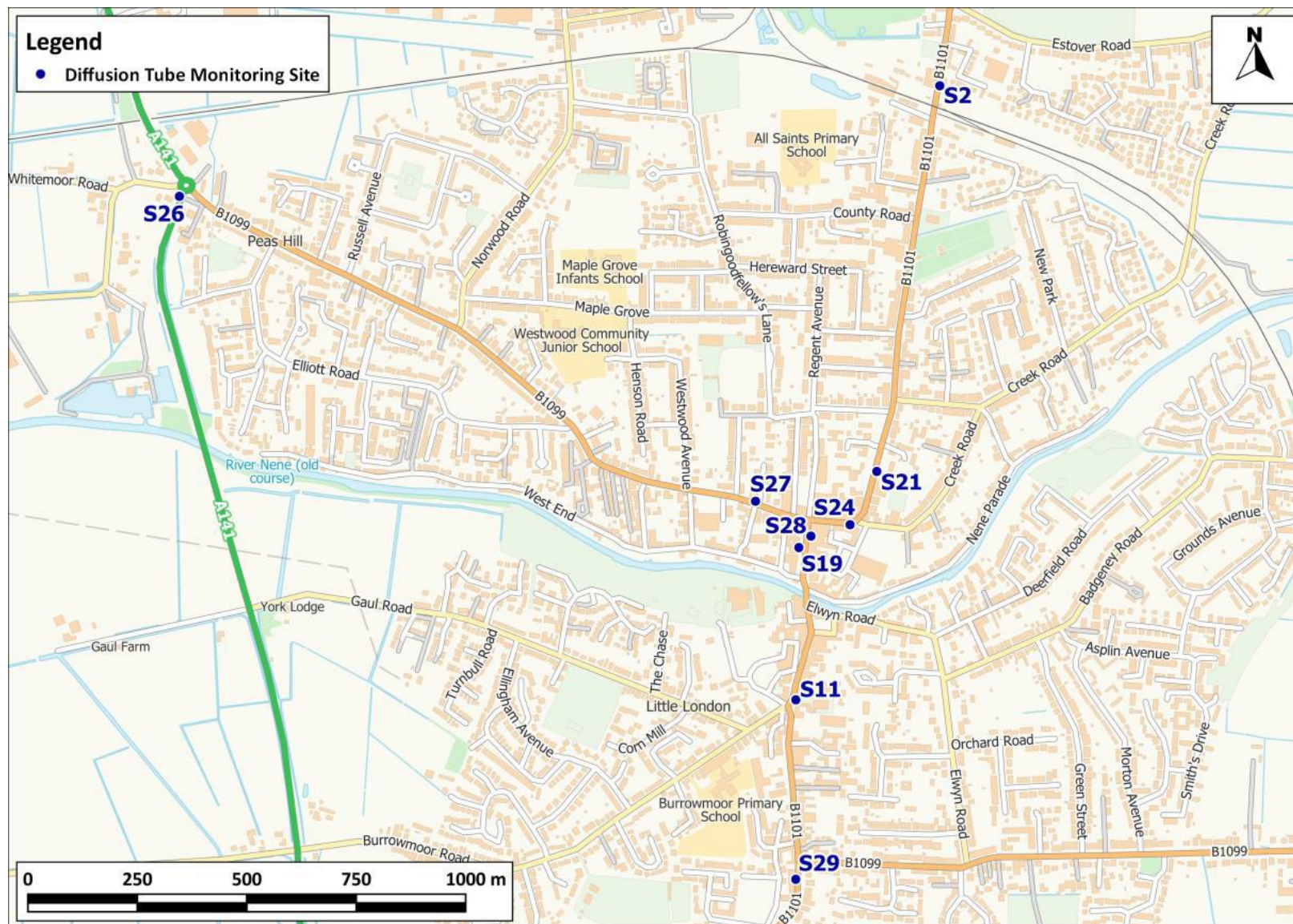


Figure D.5 – Map of Non-Automatic Monitoring Sites in Chatteris

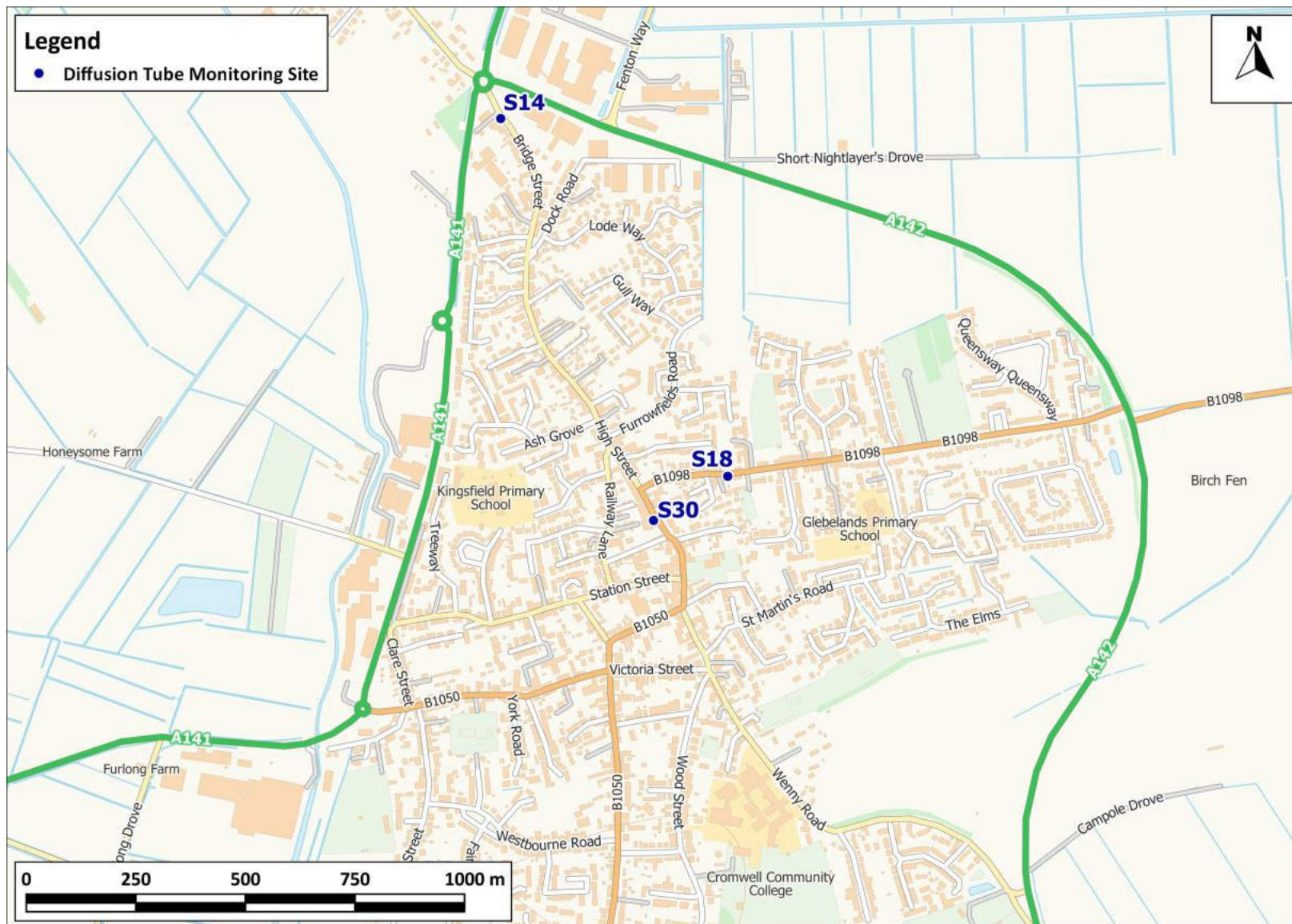
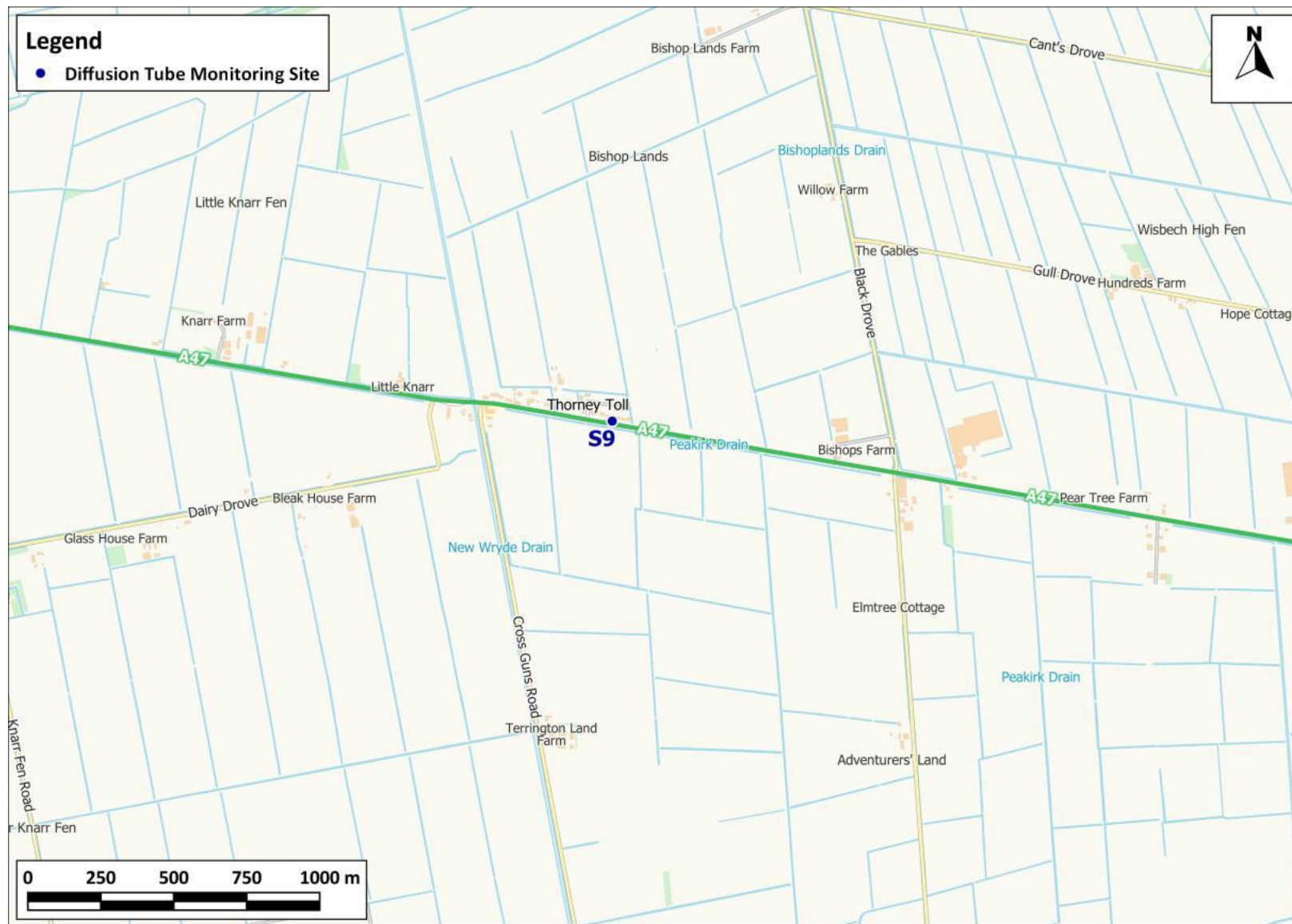


Figure D.6 – Map of Non-Automatic Monitoring Site in Thorney Toll



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁷

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

⁷ 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
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.TG16. April 2021. 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.PG16. May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.