



# 2023 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: 30<sup>th</sup> September 2023

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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 (NO<sub>2</sub>) throughout the district (41 diffusion tube monitoring sites); the primary source for this pollutant in the district is vehicle emissions. Automatic (continuous) Sulphur Dioxide (SO<sub>2</sub>) monitoring was undertaken by Whittlesey Brickworks; this monitoring has been provided for the purpose of report. In 2022 Fenland monitoring demonstrated that air quality remains compliant with national air quality objectives. NO<sub>2</sub> diffusion tube monitoring has seen that levels typically have remained below pre-pandemic levels, although a few areas have seen a slight increase on previous years. 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<sup>1,2</sup>.

The mortality burden of air pollution within the UK is equivalent to 29,000 to 43,000 deaths at typical ages<sup>3</sup>, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017<sup>4</sup>.

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<sup>1</sup> Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

<sup>3</sup> Defra. Air quality appraisal: damage cost guidance, January 2023

<sup>4</sup> 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 (SO<sub>2</sub>, PM<sub>10</sub> and NO<sub>2</sub>) and one in Whittlesey for SO<sub>2</sub>. 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](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, this work is currently being undertaken. Regarding Wisbech the Council are currently awaiting the outcome of a major infrastructure project application (due November 2023) that may impact of the course of action to revoke these areas.

## **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 Secretary of State decision making process for an Energy from Waste Combined Heat and Power Facility (major infrastructure application) is in progress. The area has seen the introduction of several new permitted process, including Part A permitted sites processing incinerator bottom ash and Part B maggot breeding processes. Several existing permitted sites have also introduced small scale incineration for local heat generation and waste disposal. 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, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

The Environmental Improvement Plan<sup>5</sup> sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term PM<sub>2.5</sub> targets. The National Air Quality Strategy, due to be published in 2023, will provide more information on local authorities' responsibilities to work towards these new targets and reduce PM<sub>2.5</sub> in their areas. The Road to Zero<sup>6</sup> details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that most Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Fenlands air quality action plan is an annually reviewed document subject to portfolio holder approval and is published as a key corporate document. To promote and encourage better development and support continued improvements in air quality locally.

2022 saw a significant increase in dust and air quality complaints regarding transport, environmental permitted installations, and development sites. Whittlesey has formed a dedicated residents' action group to raise concerns and issues including air quality to all relevant agencies and industries. Joint working with the Environment Agency, Development team and residents has seen a number of joint actions. Members have discussed air quality at full cabinet meeting and secured funding for one air quality sensor in the district, with publicly available real time data. [Agenda item - Purchase of Air Quality Monitoring Equipment - Fenland District Council](#)

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.

March Access redevelopment of Broad Street in March completed the consultation process. Work started in early 2023 to change the road layout and open the high street up to pedestrians and businesses alongside easing the flow of vehicles.

Fenland secured funding to plant over 4000 trees in the district from the Forestry Commission's Local Authorities Treescapes Fund. Planting has commenced in 2022, with

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<sup>5</sup> Defra. Environmental Improvement Plan 2023, January 2023

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

a planting scheme developed between Fenland District Council, Ground Works and Peterborough Environment City Trust seeing over 2500 trees being planted in 2022.

The local transport strategy continues to develop across the district, work to continue to improve the flow of traffic through the district along the A47 continues. The road improvements at the Guyhirn junction were completed and consultation of the Elm Roundabout at Wisbech has started with relevant stakeholders.

The Cambridgeshire Action on Energy Retrofit partnership is a partnership of Cambridgeshire County, Cambridge City and district councils and has successfully delivered energy saving campaigns and accessed Home Upgrade Grants for residents. Cambridgeshire County Council and Fenland council are also working with Cambridge city science to provide energy efficiency improvements to residents.

A review of the Taxi Licensing Policy has started to 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 inspecting school contract drivers, ensuring compliance with the policy including a contract condition of no idling in the proximity of school grounds.

Fenland council also works closely with the Cambridgeshire and Peterborough Combined Authority in accessing support for wider transport related air quality monitoring as available.

## Conclusions and Priorities

The 2022 Annual Screening Review shows that air quality in Fenland continues to meet the national objectives for NO<sub>2</sub>. The report shows Fenlands commitment to increase monitoring and to continue to provide a wide range of initiatives within the district that also improve local air quality.

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 due to be

determined in 2023, a review is being undertaken to determine if a variation of the AQMA's is the more appropriate option.

Fenland was able to prioritise 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 encourages a buy locally 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; [Community Transport - 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 our website at [Action on Energy grant scheme - Fenland District Council](#) 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: <https://energysavingtrust.org.uk/>.

Information on air quality in Fenland can be found on our website. Fenland publish all their monthly NO2 data and monitoring reports online at; <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/>.

## **Local Responsibilities and Commitment**

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

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Alia Johnson - Environmental Health

Wendy Otter – Transport Development

Rebecca Robinette – Environmental Projects



This ASR has been signed off by the Leader of the Council and the Portfolio holder for Communities and Environmental Health.

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

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

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## Table of Contents

<b>Executive Summary: Air Quality in Our Area</b> .....	<b>i</b>
Air Quality in Fenland .....	i
Actions to Improve Air Quality .....	ii
Conclusions and Priorities .....	iv
Local Engagement and How to get Involved.....	v
Local Responsibilities and Commitment .....	v
<b>1 Local Air Quality Management</b> .....	<b>1</b>
<b>2 Actions to Improve Air Quality`</b> .....	<b>2</b>
Air Quality Management Areas .....	2
Progress and Impact of Measures to address Air Quality in Fenland District Council .....	5
PM <sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations .....	12
<b>3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance</b> .....	<b>14</b>
Summary of Monitoring Undertaken .....	14
3.1.1 Automatic Monitoring Sites .....	14
3.1.2 Non-Automatic Monitoring Sites .....	14
Individual Pollutants .....	14
3.1.3 Nitrogen Dioxide (NO <sub>2</sub> ) .....	15
3.1.4 Sulphur Dioxide (SO <sub>2</sub> ).....	16
<b>Appendix A: Monitoring Results</b> .....	<b>17</b>
<b>Appendix B: Full Monthly Diffusion Tube Results for 2022</b> .....	<b>30</b>
<b>Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC</b> .....	<b>32</b>
New or Changed Sources Identified Within Fenland District Council During 2022 .....	32
Additional Air Quality Works Undertaken by Fenland District Council During 2022 .....	32
QA/QC of Diffusion Tube Monitoring .....	35
Diffusion Tube Annualisation .....	37
Diffusion Tube Bias Adjustment Factors .....	37
NO <sub>2</sub> Fall-off with Distance from the Road.....	37
QA/QC of Automatic Monitoring .....	38
<b>Appendix D: Map(s) of Monitoring Locations and AQMAs</b> .....	<b>39</b>
<b>Appendix E: Summary of Air Quality Objectives in England</b> .....	<b>58</b>
<b>Glossary of Terms</b> .....	<b>59</b>
<b>References</b> .....	<b>60</b>

## Figures

Figure A.1 – Trends in Annual Mean NO <sub>2</sub> Concentrations.....	23
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## 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.....	17
Table A.2 – Details of Non-Automatic Monitoring Sites.....	18
Table A.4 – Annual Mean NO <sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m <sup>3</sup> ) ....	21
Table A.9 – SO <sub>2</sub> 2022 Monitoring Results, Number of Relevant Instances.....	29
Table B.1 – NO <sub>2</sub> 2022 Diffusion Tube Results (µg/m <sup>3</sup> ).....	30
Table C.2 – Bias Adjustment Factor.....	37
Table E.1 – Air Quality Objectives in England.....	58

# 1 Local Air Quality Management

This report provides an overview of air quality in Fenland District Council during 2022. 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 E.1.

## 2 Actions to Improve Air Quality

### 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.

Appendix D: Map(s) 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:

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

We are in the process of reviewing all AQMAs in balance with assessing the likely impact new developments will also have in the district. Fenland has seen changes in sources of pollution, a number of sources have been removed, although new developments and the introduction of new receptors have seen new sources being introduced. Fenland are currently working with local industries and developments to re model the air quality management areas for Whittlesey and establish the impact of a proposed new development for Wisbech. It is a possibility that these areas will need to be varied 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 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 <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	15-minute mean objective is met	Fenland District Council Air Quality Action Plan 2018	<a href="#">Air quality - Fenland District Council</a>
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 concentrations >266 µg/m <sup>3</sup> = 1300	Source of pollution removed	Fenland District Council Air Quality Action Plan 2018	<a href="#">Air quality - Fenland District Council</a>
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/m <sup>3</sup> (gravimetric)	Source of pollution removed	Fenland District Council Air Quality Action Plan 2018	<a href="#">Air quality - Fenland District Council</a>

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
					= 38 (modelled)			
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/m <sup>3</sup>	24.7 µg/m <sup>3</sup>	Fenland District Council Air Quality Action Plan 2018	<a href="#">Air quality - Fenland District Council</a>

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.**



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

Defra's appraisal of last year's ASR concluded;

1. In Table A.1 in the appendix, the council mentions two automatic monitoring locations "AM1 and AM2". However, in the QA/QC section there is no mention of any QA/QC procedures for the two automatic monitoring sites. This is a major issue as QA/QC needs to be presented to provide verification for any monitoring data presented. The council is strongly recommended to correct this in future reporting years. If this issue is not addressed, it could subsequently result in future ASRs being rejected.
2. Extensive Trend graphs have been provided for all monitoring data, which is commended.
3. There were no exceedances of AQO in FDC during 2021, which is very encouraging.
4. Maps have been provided to show the AQMA boundaries and the monitoring locations, which is commended. However, in Figure D.1 monitoring site labels are not always clear against the base mapping. The Council are highly encouraged to update the labels to improve readability.
5. There are several formatting issues present in the report. On Page 15, the report states "ratified continuous monitored SO<sub>2</sub> concentrations for 2020 with the air quality objectives for SO<sub>2</sub>". This is incorrect and should read as "continuous monitored SO<sub>2</sub> concentrations for 2021" to reflect the current reporting year. Additionally, the bias adjustment factor is missing from Table B.1. The Council are encouraged to correct these in future reports.
6. The council is recommended to continue to review their current monitoring regime, specifically the addition of several new non-automatic monitoring sites (diffusion tubes) across the region. This is important as additional sites will help to identify whether there are other key areas of relevant exposure where there may be exceedances and the appropriate measures can be adopted accordingly.
7. It is encouraging to see the Council considered the comments made during the previous appraisal and actively made an effort to address all of these actions for this year's ASR.
8. FDC is undertaking work to review their existing AQMAs, with the potential for revocation following consecutive years of good air quality. This work is highly encouraged.

Fenland District Council has taken forward a number of direct measures during the current reporting year of 2022 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Eleven 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 2022 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. This will see major changes to reduce car idling in areas of Wisbech and March that see the highest levels of No<sub>2</sub> recorded in the district.
- Being a key partner engaging with the planning process for the Energy from Waste Incinerator application in the south of Wisbech. This application will have a direct impact of the decision to revoke or amend the AQMA's in the Wisbech area. This view takes into account the potential reintroduction of an SO<sub>2</sub> pollution source as well as a major increase in haulage movements within the current AQMA.
- Work with Whittlesey brickpits to review the SO<sub>2</sub> 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.
- To secure funding to undertake four years of AQ sensor monitoring in Whittlesey, monitoring NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. To inform residents using online live data and participate 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.

Fenland District Council worked to implement these measures in partnership with the following stakeholders during 2022:

- 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 from the introduction 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.

Progress on the review of the AQMAs has been slower than anticipated due to waiting for the outcome of pending major infrastructure projects.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Improve traffic management at key junctions - Wisbech Access Strategy	Traffic Management	TUC, Congestion management, traffic reduction	2016	2040	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 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	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	Full business case (FBC) 1 for the March Broad Street work was approved in January 2023 and this scheme is now in construction. FBC 2 for Peas Hill, St Peters Road and Twenty Foot is in progress and expected to be complete by Spring 2023. The schemes are phased for delivery and completion is expected between 2024 and 2026.	Funding.
3	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	No	Funded	> £10 million	Implementation	Reduced vehicle emissions / Maintain levels below standards	Part pedestrianisation of key congested areas (Broad Street), reduced congestion, junction improvements	The project is now at detailed design stage to 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	First phase successful, second phase on-going. Consultation and community engagement required time to meet the needs of stakeholders and community.

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														Highstreets Fund Bid.	
4	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	No	Funded	> £10 million	Implementation	Reduced vehicle emissions / Maintain levels below standards	Part pedestrianisation of key congested areas (Broad Street), reduced congestion, junction improvements	The project is now at detailed design stage to 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.	First phase successful, second phase on-going
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	resources
6	Explore Air Quality automatic (continuous) monitoring options	Policy Guidance and Development Control	Other policy	2019	2025	Local Authority Environmental Health	Local Transport Fund	NO	Funded	< £10k	Implementation	Provide real-time Air Quality data for PM and NO2	Purchase and Install sensors	Two AQY sensors were purchased in 2020 and failed, support was withdrawn by the manufacture and provider for the equipment. Cambridgeshire and Peterborough Combined Authority are currently procuring a network of meters across the County, with the intention to install meters in Wisbech and March. FDC have funded one sensor for the Whittlesey area to be installed in Jan 2023.	Funding. Mcerts meters are cost prohibitive, and guidance of low cost sensors need expanding.
7	Review and Expand Diffusion Tube network	Policy Guidance and Development Control	Other policy	2019	2024	Local Authority Environmental Health	FDC	NO	Funded	< £10k	Implementation	Provide NO2 pollution data	Diffusion tube reviewed and expanded	CCC funding was received to expand the tube network to areas	Community engagement

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation	
															of development and expansion in March and Wisbech.	
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 transport. This strategy was adopted in 2022. Work is ongoing to source funding for walking and cycling improvements recommended in the strategy.	Funding	
9	Develop Air Quality Action Plan	Policy Guidance and Development	Control Air Quality Planning and Policy Guidance	2018	2024	Local Authority Environmental Health	FDC	NO	Funded	< £10k	Completed	Maintain levels below standards	Update Plan	Review Air Quality Action Plan and publish online.	resources and skills available, costs of outsourcing.	
10	Treescapes fund	Other	Other	2018	2024	FDC, Peterborough Environment City Trust, Forestry Commission, Groundworks East	Forestry Commission	NO	Funded	£10k - 50k	Implementation	Maintain levels below standards	Number of trees planted	From July 2020 - March 2023, Groundwork East's Community Tree Planting project saw them support the community to plant 2,390 trees across 7 sites in Elm & March. 16 "pocket woods" have been created. Whittlesey Street Pride volunteers and Whittlesey Town Council planted 105 trees at Yarwells Headland,	resources, access to land	

Measure No.	Measure	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation	
															Wisbech Street Pride & Wisbech In Bloom created a new woodland on National Trust land. 48 native fruit & nut saplings were planted.	
11	S106 Funding	Promoting Low Emission Plant	Other measure for low emission fuels for stationary and mobile sources	2022	2022	FDC, Glassmore fund	FDC and Town Councils	NO	Funded	< £10k	Completed	Maintain levels below standards	Reduce energy use	£2994.19 provided to Benwick Christmas Lights to upgrade their lighting to LED. £4866.96 to Doddington Village Hall to upgrade stage lighting to LED.	public engagement	

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8), local authorities are expected to work towards reducing emissions and/or concentrations of PM<sub>2.5</sub> (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM<sub>2.5</sub> has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

At present Fenland do not monitor particulates, although have secured funding and an air quality sensor was installed in January 2023. In the absence of previous monitoring data, background mapping data for local authorities have been accessed to determine the current anticipated levels. These maps show the total levels of PM<sub>2.5</sub> across Fenland are anticipated to be between 8.4 and 9.8.

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

- Funding has been approved for the installation and maintenance of an air quality sensor which is installed in Whittlesey. It is funded to be operational for a period of four years. This is to determine if a current rise in permitted processes, industrial processes and haulage yards in Whittlesey has resulted in levels of PM<sub>10</sub> and PM<sub>2.5</sub> above national objectives. The meters will be operational from January 2023 and data will be available online at [Fenland District Council - Air Quality monitoring service \(airqualityengland.co.uk\)](https://www.fenland.gov.uk/air-quality-monitoring-service). This is alongside attending multiagency working groups representing the range of regulators across the District Council, County Council and Environment Agency.
- Improvement works and pedestrianisation of March High Street and other measures in the Transport Strategy discussed in Table 2.2, Section 2.2 above will contribute in reducing traffic related PM<sub>2.5</sub>;
- To participate 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; and
- 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 small scale incinerators in manufacturing premises.

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 2022 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 2018 and 2022 to allow monitoring trends to be identified and discussed.

### Summary of Monitoring Undertaken

#### 3.1.1 Automatic Monitoring Sites

Fenland District Council does not undertake any automatic (continuous) monitoring, however 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. Table A.1 in Appendix A shows the details of the automatic monitoring sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated are available on the Environment Agency public register.

#### 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 2022. 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.

### 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.

### 3.1.3 Nitrogen Dioxide (NO<sub>2</sub>)

**Error! Reference source not found.** and Table A.3 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 40µg/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 2022 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.

Measured concentrations at all monitoring locations were compliant with the annual mean air quality objective for nitrogen dioxide (40 µg/m<sup>3</sup>).

As all annual mean nitrogen dioxide concentrations were well below 60 µg/m<sup>3</sup>, it is unlikely there were any exceedances of the 1-hour mean nitrogen dioxide objective at any of the monitoring sites in 2022.

Overall, there has been good data capture at all monitoring locations across the district (>75%). Two sites did see tubes missing on a number of occasions and their tube holders were replaced to make their placement more secure.

The overall results show that NO<sub>2</sub> levels were recorded typically at levels lower than 2021, and where levels have increased these have not exceeded levels prior to 2020. Five year trends have been shown for the over all district and also for each of Fenlands four market towns. Areas of note are March town centre, this has seen two areas slightly increase in levels (site 27 and site 28) these two sites are areas that monitor traffic idling at traffic lights waiting to filter into the town centre. This area is part of the regeneration works that will see the replacement of lights with a roundabout which will increase the flow of traffic and reduce the idling seen at these locations. March has also seen the introduction of six new monitoring locations (sites 36 to 41). These locations have been chosen to monitor the changes experienced by the town centre regeneration on alternative routes which are also areas of large scale housing developments.

Whittlesey saw the most locations increase in levels from 2021, with four locations along the A605 showing increased levels from the 2020. Whittlesey is also part of a major infrastructure project with a bridge over a level crossing due to open in 2023. The impact of traffic free flowing over the bridge should see the improvement in traffic flow through the town. Whittlesey has also seen the introduction of new major housing developments, haulage yards and industrial processes all contributing to traffic levels in the town along its single linear route the A605.

#### **3.1.4 Sulphur Dioxide (SO<sub>2</sub>)**

Table A.4 in Appendix A compares the ratified continuous monitored SO<sub>2</sub> concentrations for 2022 with the air quality objectives for SO<sub>2</sub>.

Two MCert continuous monitors are maintained by the Whittlesey brick works in compliance with their Environmental Permit due to demonstrate compliance with the National Air Quality Objectives within the Air Quality Management Area. As part of the permit conditions a yearly summary is provided to the local authority to monitor local air quality objectives. The year report shows that the equipment was operational for over 98% of the year. During this period two 15-minute means exceeded 266µg/m<sup>3</sup> at one of the sites, which is well within the 35 exceedances permitted, 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?	Monitoring Technique	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
AM1	Park Lane	Urban Background	526382	296859	SO2	YES AQMA 1 Whittlesey	UV Fluorescence	0	N/A	1.5
AM2	Bradley Fen	Industrial	523924	297974	SO2	YES AQMA 1 Whittlesey	UV Fluorescence	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
- (3) This monitoring data is provided by the Environment Agency Environmental Permitting Regime

**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	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
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

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)
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
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

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)
S33	Weasenham Lane/New Drove, Wisbech [B198]	Roadside	546567	308374	NO2	No	5.0	1.7	No	2.2
S34	Weasenham Lane AQY, Wisbech	Roadside	546756	308522	NO2	Yes Wisbech No.3	1.0	1.5	Yes*	2.2
S35	Broad Street AQY, March [B1101]	Roadside	541672	296801	NO2	No	1.0	2.0	Yes*	2.0
S36	Gaul Road, March	Roadside	450918	296641	NO2	No	1.0	1.7	No	2.2
S37	Burrowmoor Road (East), March	Roadside	540718	296148	NO2	No	1.0	1.7	No	2.2
S38	Burrowmoor Road (West), March	Roadside	541545	296392	NO2	No	1.0	1.9	No	2.0
S39	The Causeway/Avenue, March [B1101]	Roadside	541519	295564	NO2	No	5.0	1.7	No	2.2
S40	Job's Lane, March	Roadside	541551	295083	NO2	No	1.0	1.3	No	2.2
S41	Knights End Road, March	Roadside	540578	294878	NO2	No	1.0	1.1	No	2.2

**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.

\* S34 and S35 were placed to be collocated with two AQY sensors. These sensors failed to provide any data.



**Table A.3 – Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>)**

Diffusion Tube 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 2022 (%) <sup>(2)</sup>	2018	2019	2020	2021	2022
S1	527059	297205	Kerbside	100.0	100.0	21.7	21.3	15.8	17.8	17.6
S2	541980	297864	Roadside	100.0	100.0	20.0	20.3	15.7	16.6	14.3
S3	546860	308532	Roadside	100.0	100.0	21.1	21.6	17.7	18.1	17.4
S4	526849	297246	Roadside	100.0	100.0	22.2	22.1	17.2	16.9	18.2
S5	546415	309602	Roadside	100.0	100.0	28.2	30.1	23.7	26.8	23.7
S6	525293	297406	Roadside	100.0	100.0	16.1	19.0	15.1	15.4	12.8
S7	527291	297159	Roadside	100.0	100.0	20.6	18.3	16.2	16.1	16.4
S8	546890	308368	Kerbside	100.0	100.0	29.1	28.7	23.4	23.9	23.1
S9	534526	303907	Roadside	100.0	100.0	19.3	19.9	15.0	17.0	17.4
S10	530615	297705	Kerbside	100.0	100.0	18.6	18.6	13.9	14.9	15.2
S11	541653	296457	Roadside	100.0	100.0	20.5	19.4	15.5	17.1	17.4
S12	546592	310191	Urban Background	100.0	100.0	14.8	16.6	14.3	13.3	12.4
S13	546664	310342	Roadside	100.0	100.0	27.2	25.5	26.9	28.7	27.1
S14	538976	287094	Roadside	100.0	75.0	17.2	17.9	16.0	27.8	16.2
S15	546818	308568	Roadside	100.0	100.0	29.7	30.3	24.4	25.5	25.1
S16	546238	309981	Kerbside	100.0	100.0	30.6	29.6	23.5	24.6	23.1
S17	545509	308735	Roadside	100.0	92.0	17.6	18.9	15.2	18.6	15.7
S18	539475	286275	Roadside	100.0	100.0	13.7	14.0	11.6	11.2	11.1
S19	541662	296814	Roadside	100.0	100.0	30.1	28.7	25.4	28.5	24.6
S20	546481	309387	Roadside	100.0	100.0	27.3	26.9	21.8	24.5	23.3
S21	541838	296987	Roadside	100.0	100.0	19.1	20.2	15.6	15.3	14.7
S22	527357	296554	Roadside	100.0	100.0	16.1	15.9	14.2	13.7	13.3
S23	526348	297468	Roadside	100.0	100.0	22.4	22.9	16.3	17.4	17.1
S24	541779	296864	Roadside	100.0	92.0	26.2	26.5	19.3	19.3	19.6
S25	528091	297183	Roadside	100.0	92.0	16.7	16.8	15.7	15.1	16.0
S26	540245	297613	Kerbside	100.0	100.0	-	-	27.7	30.8	27.1
S27	541562	296920	Roadside	100.0	100.0	-	-	17.1	18.6	17.6
S28	541692	296840	Roadside	100.0	100.0	-	-	21.9	23.0	22.6
S29	541654	296055	Roadside	100.0	83.0	-	-	17.7	18.3	15.4
S30	539332	286176	Roadside	100.0	100.0	-	-	17.1	17.1	17.5
S31	545986	309618	Roadside	100.0	100.0	-	-	30.7	34.7	33.1

Diffusion Tube 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 2022 (%) <sup>(2)</sup>	2018	2019	2020	2021	2022
S32	545997	310092	Roadside	100.0	100.0	-	-	17.2	18.2	17.8
S33	546567	308374	Roadside	100.0	92.0	-	-	-	-	13.9
S34	546756	308522	Roadside	100.0	100.0	-	-	-	-	19.9
S35	541672	296801	Roadside	100.0	100.0	-	-	-	-	25.4
S36	450918	296641	Roadside	100.0	92.0	-	-	-	-	13.2
S37	540718	296148	Roadside	100.0	100.0	-	-	-	-	14.8
S38	541545	296392	Roadside	100.0	100.0	-	-	-	-	10.0
S39	541519	295564	Roadside	100.0	100.0	-	-	-	-	12.9
S40	541551	295083	Roadside	100.0	100.0	-	-	-	-	10.5
S41	540578	294878	Roadside	100.0	100.0	-	-	-	-	11.0

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  $\mu\text{g}/\text{m}^3$ .

Exceedances of the NO<sub>2</sub> annual mean objective of 40 $\mu\text{g}/\text{m}^3$  are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60 $\mu\text{g}/\text{m}^3$ , indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

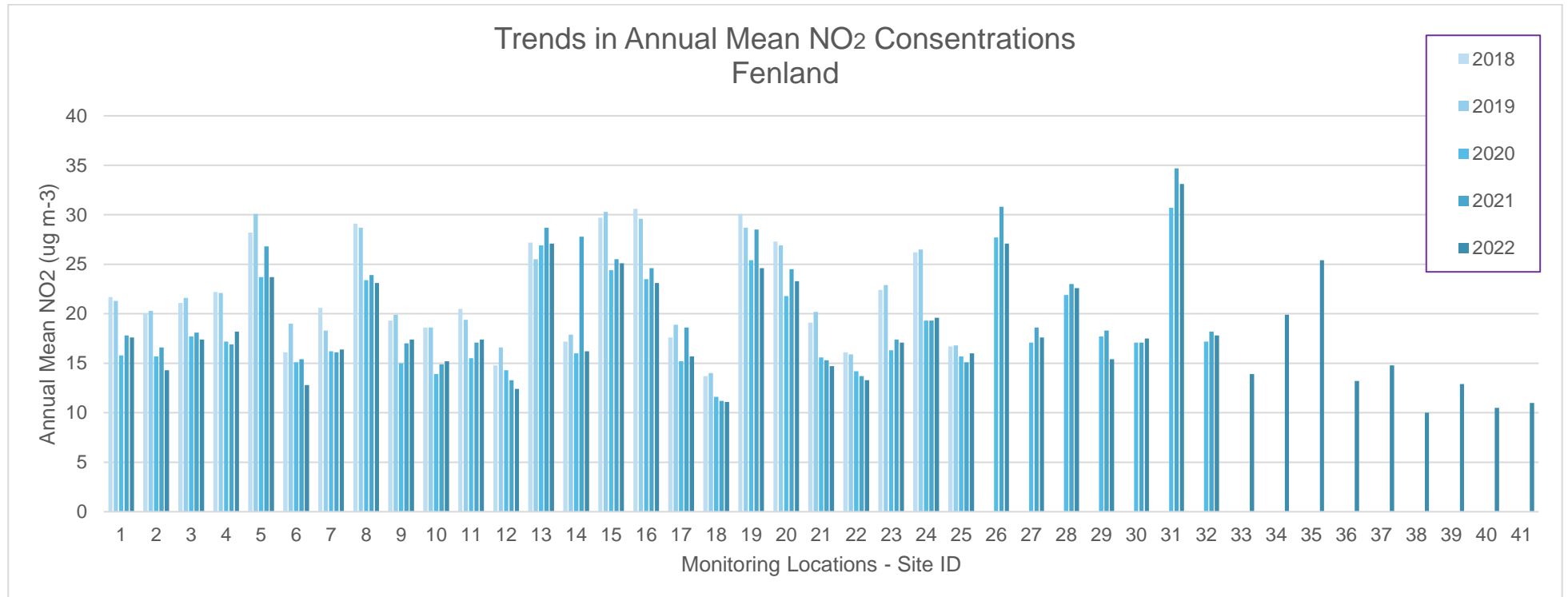
Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

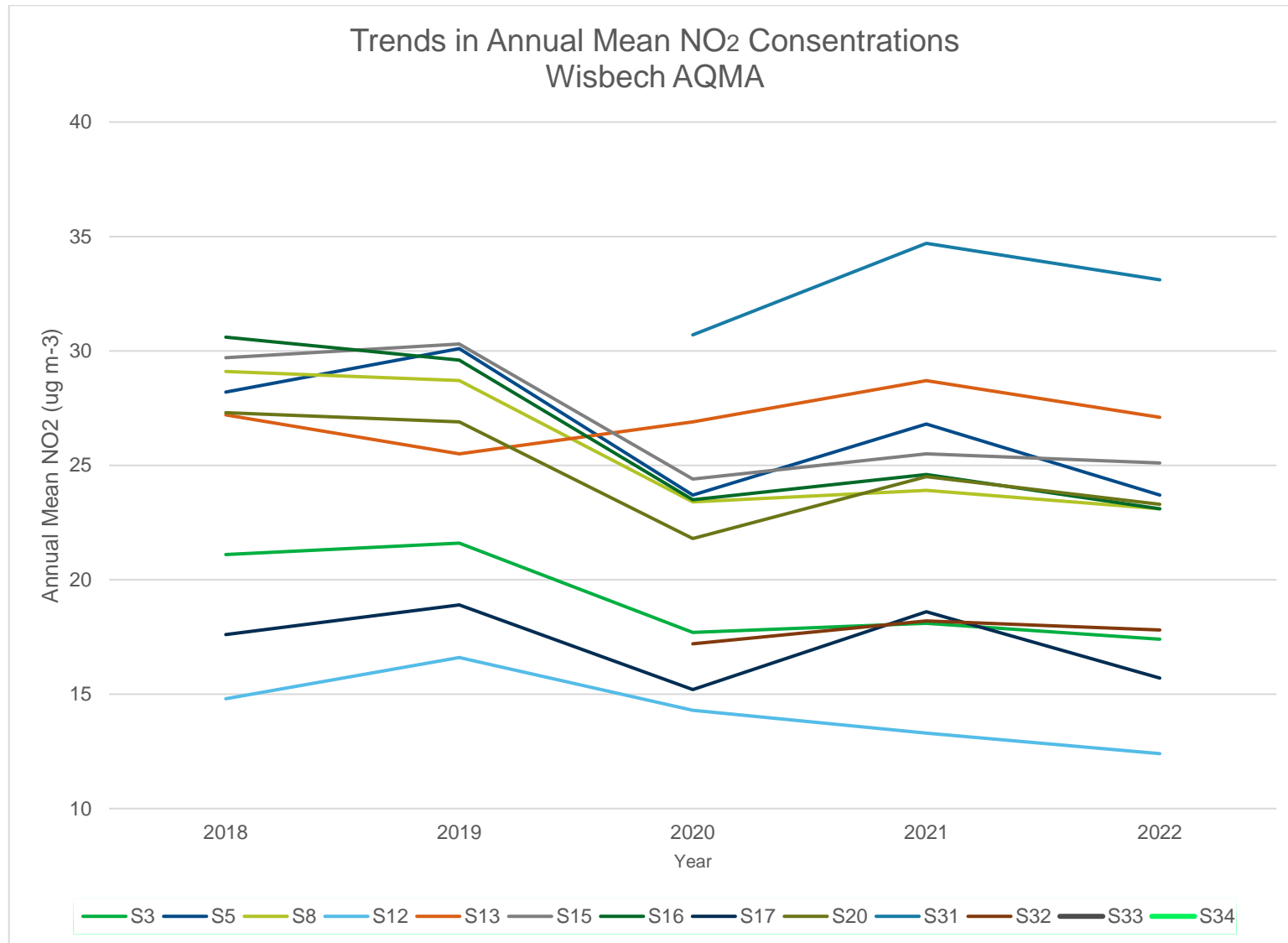
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

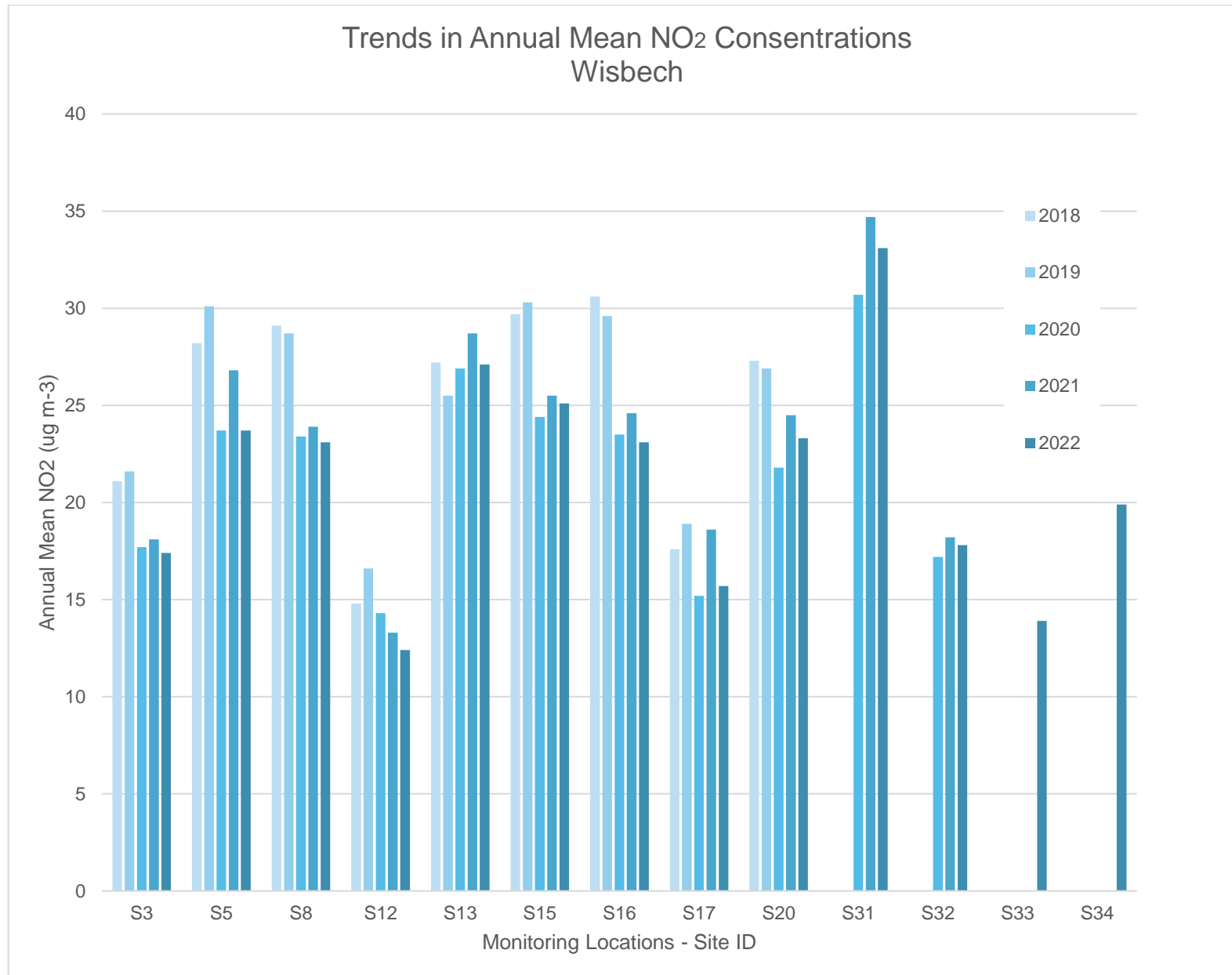
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

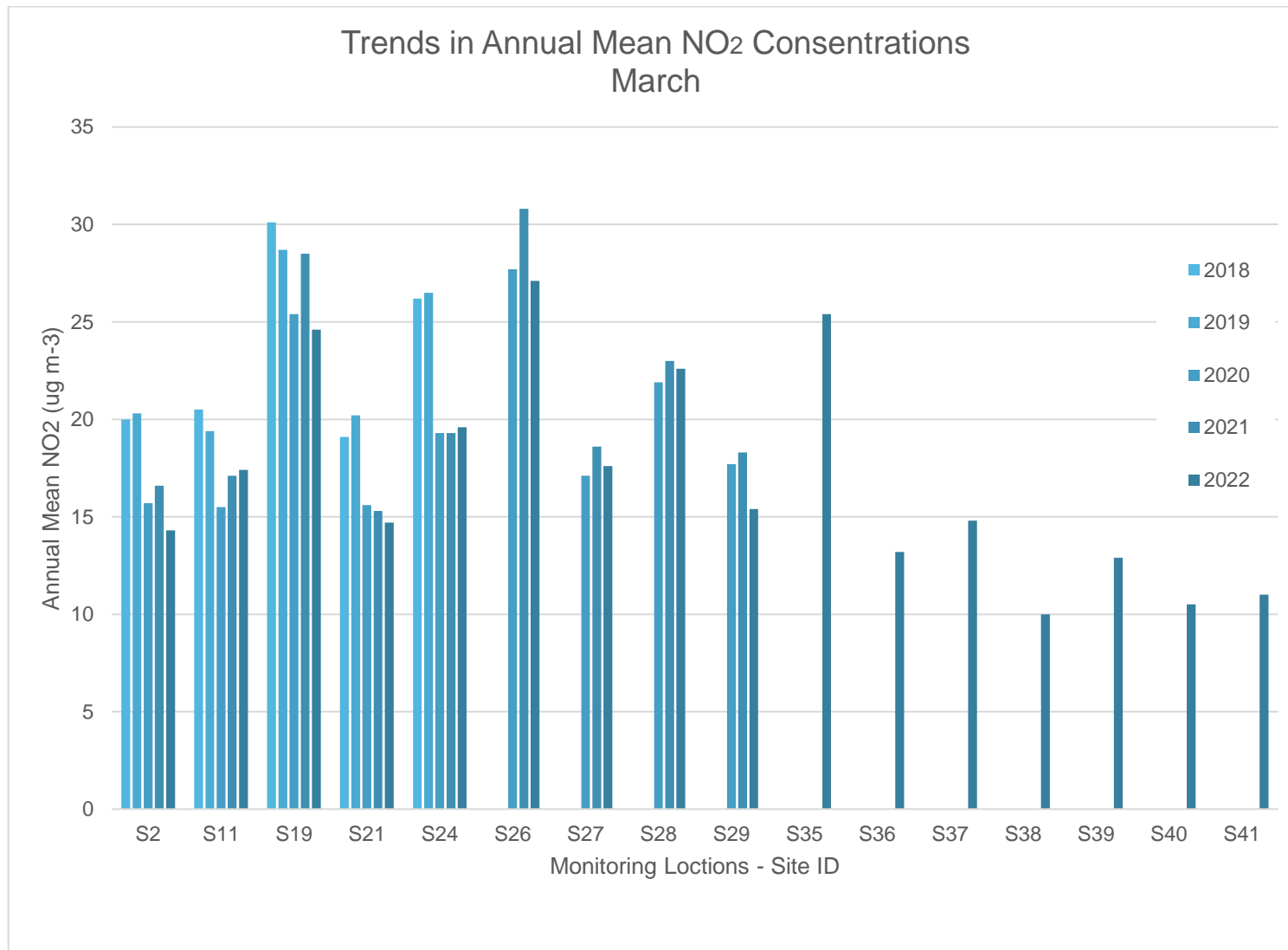
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

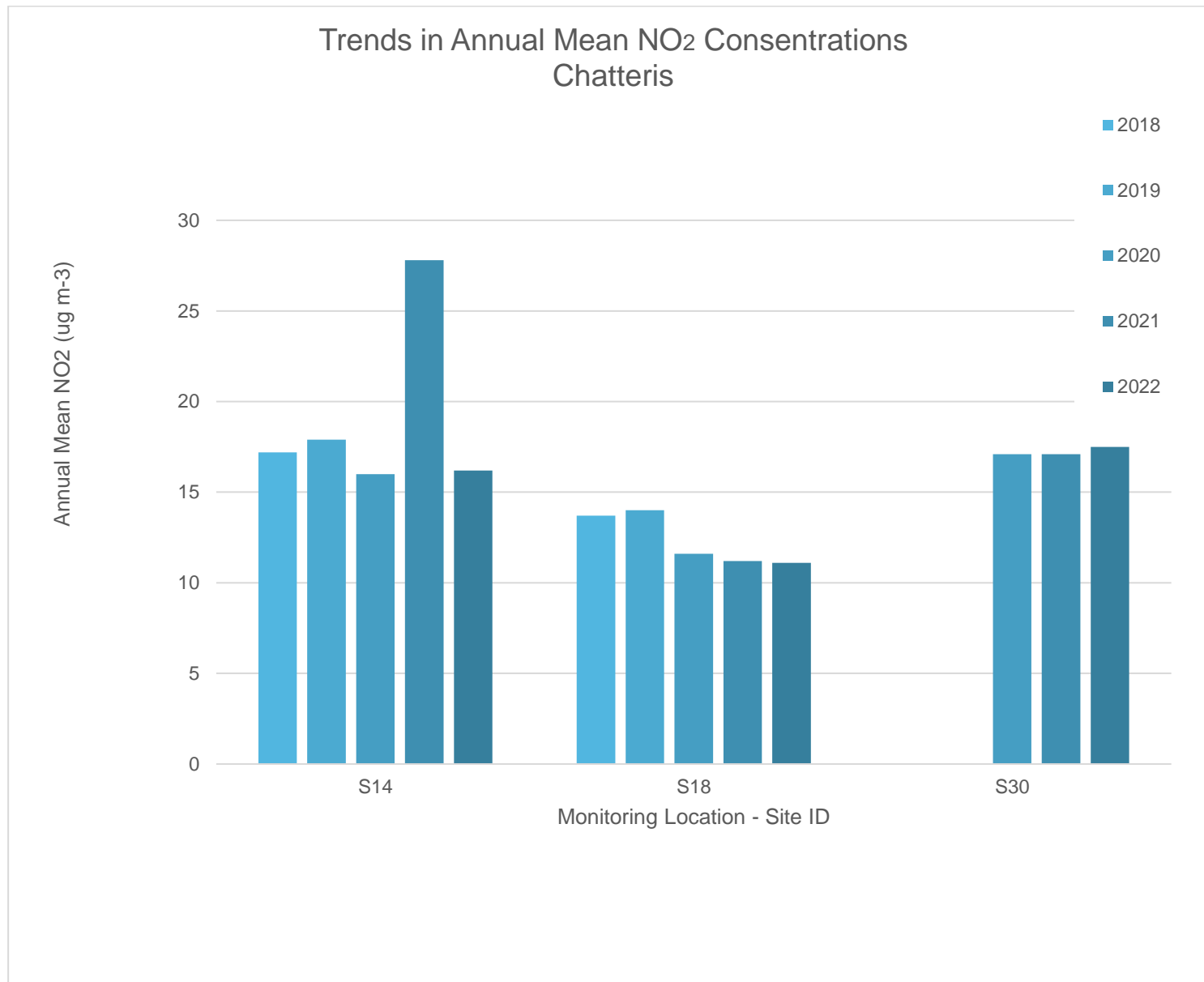
**Figure A.1 – Trends in Annual Mean NO<sub>2</sub> Concentrations**

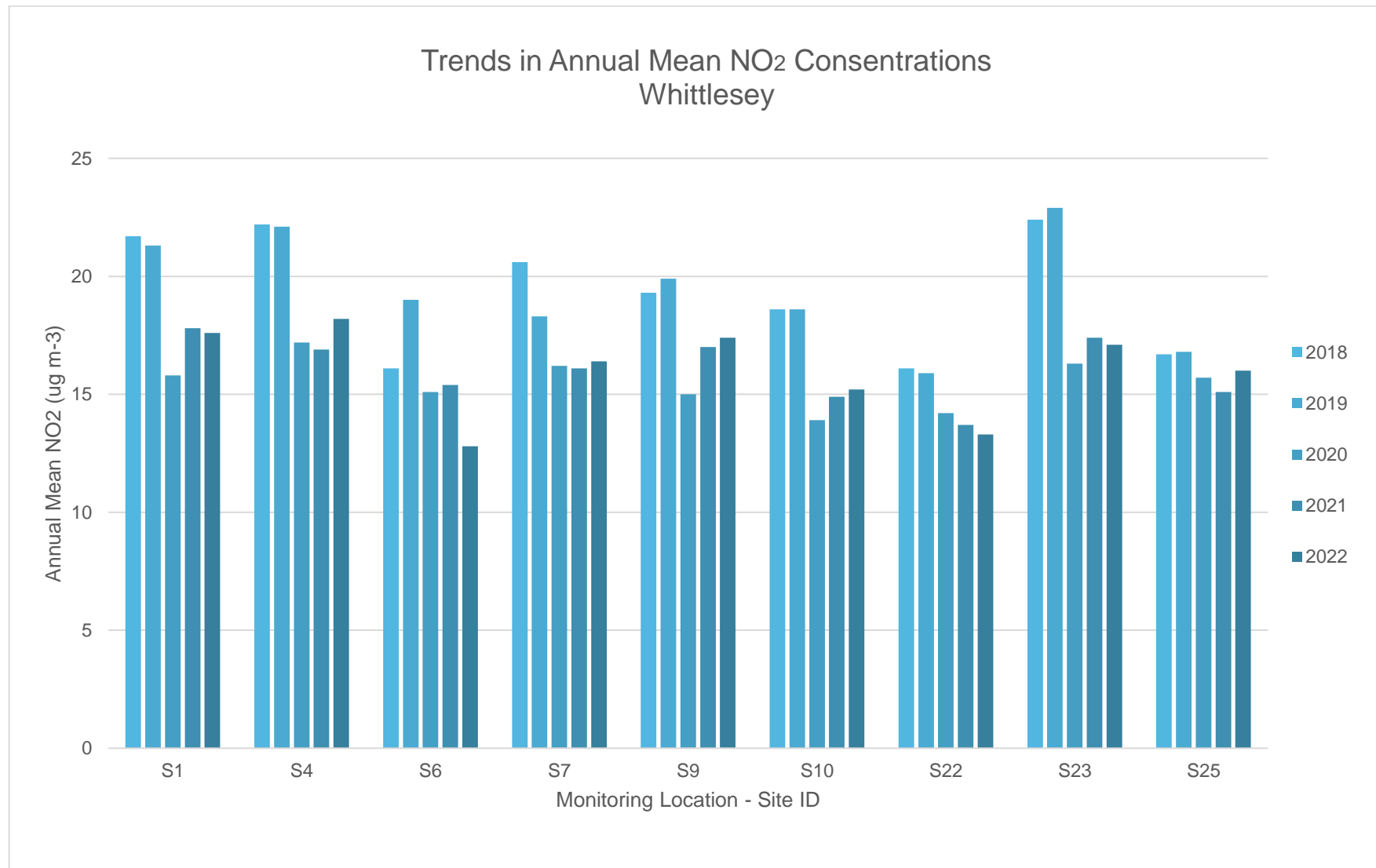














**Table A.4 – SO<sub>2</sub> 2022 Monitoring Results, Number of Relevant Instances**

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 2022 (%) <sup>(2)</sup>	Number of 15-minute Means > 266µg/m <sup>3</sup>	Number of 1-hour Means > 350µg/m <sup>3</sup>	Number of 24-hour Means > 125µg/m <sup>3</sup>
AM1	526382	2962859	Urban Background	100	99.87	0	0	0
AM2	523924	297974	Industrial	100	99.9	2	0	0

**Notes:**

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 2022

Table B.1 – NO<sub>2</sub> 2022 Diffusion Tube Results (µg/m<sup>3</sup>)

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S1	527059	297205	18.4	14.0	16.0	10.7	9.4	8.3	8.9	9.5	11.4	11.2	13.2	14.8	23.2	17.6		
S2	541980	297864	14.6	11.8	12.7	8.5	8.1	8.9	8.1	8.0	9.3	11.5	4.7	12.1	18.8	14.3		
S3	546860	308532	17.6	12.1	12.8	9.7	10.6	9.8	8.2	8.8	9.6	12.7	15.6	16.1	22.9	17.4		
S4	526849	297246	19.5	14.3	14.5	9.2	9.5	9.9	9.8	8.9	11.2	11.0	17.1	15.5	23.9	18.2		
S5	546415	309602	26.1	17.8	16.5	13.7	15.4	15.6	13.7	12.5	15.7	18.7	15.3	14.9	31.2	23.7		
S6	525293	297406	7.1	12.0	11.1	7.2	9.6	9.4	8.1	7.7	9.3	11.7	9.0	3.3	16.8	12.8		
S7	527291	297159	18.8	12.8	13.8	8.2	8.7	8.4	8.0	7.3	10.8	11.6	14.3	13.1	21.6	16.4		
S8	546890	308368	21.3	14.5	17.3	13.9	14.1	13.4	13.8	14.0	17.7	14.5	16.8	19.3	30.3	23.1		
S9	534526	303907	18.4	11.5	13.8	9.8	10.8	11.2	9.7	9.1	9.7	13.5	14.8	11.9	23.0	17.4		
S10	530615	297705	18.0	12.7	11.2	8.3	9.4	8.2	7.5	7.9	8.8	9.8	10.5	13.7	20.1	15.2		
S11	541653	296457	18.6	13.5	11.1	9.0	9.8	10.3	8.8	9.4	11.5	12.8	13.5	15.6	22.9	17.4		
S12	546592	310191	14.8	11.4	10.8	7.3	6.6	5.8	5.7	5.4	6.7	7.4	10.1	10.4	16.3	12.4		
S13	546664	310342	25.0	17.9	22.2	17.0	16.2	16.2	16.2	17.3	17.2	18.8	19.6	20.8	35.7	27.1		
S14	538976	287094	15.5	10.1			9.0	9.4	8.9		12.7	12.8	7.9	14.3	21.4	16.2		
S15	546818	308568	24.5	18.2	17.0	13.3	16.8	16.6	15.3	14.1	16.1	18.2	20.2	17.4	33.1	25.1		
S16	546238	309981	21.3	16.1	18.4	14.8	13.2	14.2	12.9	14.6	14.3	18.6	15.4	17.3	30.4	23.1		
S17	545509	308735	7.4	9.2	11.4	16.5		8.8	8.3	8.1	9.6	12.2	13.4	14.0	20.7	15.7		
S18	539475	286275	13.4	8.2	10.4	5.9	5.5	4.8	5.1	5.5	6.6	7.7	7.5	10.9	14.6	11.1		
S19	541662	296814	25.7	16.9	17.4	15.4	14.7	17.5	7.5	16.5	18.2	20.6	11.4	21.2	32.3	24.6		
S20	546481	309387	20.8	14.2	23.4	13.3	14.1	15.4	8.8	13.3	18.2	16.7	18.9	15.8	30.7	23.3		
S21	541838	296987	16.9	12.0	11.0	7.6	7.7	8.7	5.7	7.7	9.6	9.6	12.5	12.1	19.3	14.7		
S22	527357	296554	13.6	9.5	12.8	6.7	6.6	6.6	16.2	6.9	8.4	7.6	9.5	5.8	17.5	13.3		
S23	526348	297468	21.6	13.6	14.1	9.3	9.3	8.4	8.9	8.8	10.4	12.2	11.6	13.1	22.5	17.1		
S24	541779	296864	20.4	15.4	12.6	10.8	11.8	12.6	15.3	10.2	11.5	14.3			25.8	19.6		
S25	528091	297183	21.9	14.9		7.3	6.9	6.5	12.9	6.3	8.2	10.9	12.2	13.4	21.1	16.0		
S26	540245	297613	21.5	17.3	25.7	18.1	16.5	18.7	8.3	16.1	18.9	21.1	22.7	18.9	35.6	27.1		
S27	541562	296920	19.4	12.3	16.8	10.4	8.8	9.5	5.1	9.9	11.3	12.0	14.4	15.6	23.2	17.6		
S28	541692	296840	17.7	10.2	19.3	16.4	13.4	13.1	13.8	15.1	17.1	15.0	17.9	17.4	29.7	22.6		
S29	541654	296055	15.6	10.5			9.5	9.5	8.6	10.9	11.2	12.4	14.2	3.5	20.2	15.4		

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S30	539332	286176	17.5	11.3	13.7	10.1	10.1	10.5	10.8	10.2	12.0	13.0	12.3	13.1	23.0	17.5		
S31	545986	309618	30.5	22.2	27.0	19.3	19.9	23.0	21.3	18.7	20.5	24.7	26.5	19.9	43.5	33.1		
S32	545997	310092	17.4	9.7	16.3	11.5	9.0	10.5	9.7	9.6	11.9	13.1	14.9	13.6	23.4	17.8		
S33	546567	308374	4.2	10.7	16.0	10.8		7.0	7.7	9.3	9.8	7.6	9.0	13.5	18.3	13.9		
S34	546756	308522	18.5	13.1	18.7	13.8	11.8	12.4	11.7	11.6	13.5	13.7	10.5	15.1	26.2	19.9		
S35	541672	296801	15.0	16.0	24.5	16.3	15.2	15.1	15.5	18.0	19.0	17.0	17.5	21.1	33.5	25.4		
S36	450918	296641	11.8	9.4	13.6	11.8		5.1	5.6	5.9	7.3	7.8	10.6	10.8	17.3	13.2		
S37	540718	296148	17.0	11.2	14.9	8.7	7.7	7.5	7.6	7.5	9.3	9.6	11.5	9.4	19.4	14.8		
S38	541545	296392	10.5	8.4	11.3	4.4	4.7	5.1	4.7	4.5	5.9	7.4	5.8	10.1	13.2	10.0		
S39	541519	295564	12.7	8.0	13.5	7.0	5.4	6.7	5.2	6.6	8.7	8.9	11.4	12.5	17.0	12.9		
S40	541551	295083	11.1	8.8	10.5	5.9	4.3	5.0	4.1	5.0	5.3	7.3	9.6	9.7	13.8	10.5		
S41	540578	294878	11.2	3.7	11.3	5.7	7.2	5.9	8.9	5.5	9.2	8.1	6.4	8.0	14.5	11.0		

- All erroneous data has been removed from the NO<sub>2</sub> 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 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System

**Notes:**

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/m<sup>3</sup>, 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.

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

### New or Changed Sources Identified Within Fenland District Council During 2022

During 2022 two new sites have been identified in Whittlesey. In 2022 an Incinerator Bottom Ash (IBA) recycling plant has been developed and received an Environmental Permit. A wood shredding and recycling plant was also identified and is currently going through retrospective applications for planning and environmental permitting.

### Additional Air Quality Works Undertaken by Fenland District Council During 2022

#### Environmental Permitting

- A new Part A permit for the IBA recycling plant has been issued and an extension to an existing permit to continue soil screening for buttressing works have been issued by the Environment Agency for the Whittlesey area
- No changes to Part B risk rating awarded to existing permit holders.

#### March Future High Street Fund (Broad Street update)

The enhancement scheme is underway and within the consultation stage. Works to utilities have commenced with the scheme currently on programme starting in 2023. Details of the scheme can be found at [March Future High Streets Fund - 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.

Most significantly a national infrastructure application for an energy from waste plant in Wisbech has started its pre application and consultation stages. This application proposes to transport and incinerate 500,000 tonnes of waste a year to create 50MW of electricity.

More information can be found on the Planning Inspector website at [Medworth Energy from Waste Combined Heat and Power Facility | National Infrastructure Planning \(planninginspectorate.gov.uk\)](https://www.planninginspectorate.gov.uk/medworth-energy-from-waste-combined-heat-and-power-facility-national-infrastructure-planning)

Locally Fenland has seen a rise in haulage and housing development applications, below details the major applications received in 2022.

Application	Location	Proposal
F/YR23/0370/O	Land To The South Of Barkers Lane March	130 dwellings
F/YR23/0266/F	Land South Of 107 Upwell Road March	26 dwellings
F/YR23/0245/O	Land South Of 250 Drybread Road Whittlesey	175 dwellings
F/YR22/0914/FDL	Nene Parade Bedford Street Chase Street Wisbech	70 Apartments
F/YR23/0101/F	156 - 158 Stonald Road Whittlesey	26 dwellings
F/YR22/1256/F	Land North East Of Meadowgate Academy Access From Sandy Lane Walsoken Wisbech	325 dwellings
F/YR22/0967/FDL	Land East Of The Elms Chatteris	80 dwellings
F/YR22/1333/F	Land South Of Chrysanthemum House Barton Road Wisbech	46 Dwellings

F/YR22/1032/O	Land West Of Princess Avenue March	125 Dwellings
F/YR22/1296/F	14 - 16 Wenny Road Chatteris	9 dwellings
F/YR22/0844/O	Land To The East Of Stow Lane Wisbech	224 dwellings
F/YR22/0510/O	12 Knights End Road March	36 dwellings
F/YR22/0496/F	23 Springfield Avenue March	40 dwellings
F/YR22/0455/F	3 Sandyland Wisbech	16 dwellings
F/YR22/0354/F	134A Ramnoth Road Wisbech	16 dwellings
F/YR22/0381/F	88 West Street Chatteris	22 dwellings
F/YR23/0053/F	2 White Fen Farm Floods Ferry Road Doddington	Storage and warehousing
F/YR22/1386/F	March Trading Estate Westry Avenue March	9 industrial units
F/YR23/0069/F	Land South Of New Saxon Works Peterborough Road Whittlesey	Wood processing
F/YR22/1193/F	18 - 26 Crab Marsh Wisbech	Storage and haulage
F/YR22/0847/F	Of Burnthouse Farm Burnthouse Sidings Turves	Storage and haulage

F/YR22/0847/F	Burnthouse Sidings Turves	Storage and haulage
F/YR22/0783/F	Eastwood Industrial Estate Eastwood End Wimblington	Change of use – agricultural to industrial
F/YR22/0571/O	50 Hostmoor Avenue March	Change of use – storage to industrial
F/YR22/0382/F	Saxon Works Peterborough Road Whittlesey	Change of use – agricultural to industrial
F/YR22/1147/F	Kingsland Farm, 229 March Road Coates	Change of use – Minerals extraction to industrial

## 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.

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 2022 gave an adjustment factor of 0.76 which has been applied to the Fenland data (see spreadsheet below).

The monitoring has been undertaken in adherence with the 2022 Diffusion Tube Monitoring Calendar.

**Socotec Diffusion Tube Performance Summary 2022:**

**Tube Type:** 50% TEA : 50% Acetone/ 20% TEA : 80% Water

**Uncertainty:** “Diffusion Tubes for Ambient NO<sub>2</sub> Monitoring: Practical Guidance” categorises diffusion tubes as an indicative method, and as such the uncertainty is defined as  $\pm 25\%$ .

During in field intercomparisons, SOCOTEC’s diffusion tubes perform at  $\pm 10\%$  uncertainty.

**Quality Control:** A quality control (QC) sample of known concentration is run with the samples. The data generated is then assessed using a Shewhart control chart to determine the process is under statistical control.

**Analytical Repeatability:** In 2022 ~9000 QC samples were analysed, achieving a relative standard deviation of 0.98%

**Confidence Intervals:**  $2\sigma \pm 1.96\%$

$3\sigma \pm 2.94\%$

**Limit of Detection:** The analytical limit of detection is 0.03 $\mu\text{g}$  NO<sub>2</sub>.

Over a 4-week exposure this would equate to 0.6 $\mu\text{g}/\text{m}^3$ , or 0.3ppb

**Quality Assurance:**

The manufacture and analysis of NO<sub>2</sub> diffusion tubes is covered by our UKAS accreditation.

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 2022, SOCOTEC had an average z-score of 0.50

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 NO<sub>2</sub> Monitoring: A Practical Guidance.”



### Diffusion Tube Annualisation

All diffusion tube monitoring locations within Fenland District Council recorded data capture of or above 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.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 0.76 to the 2022 monitoring data. A summary of bias adjustment factors used by Fenland District Council over the past five years is presented in Table C.1.

**Table C.1 – Bias Adjustment Factor**

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	03/23	0.76
2021	National	06/22	0.78
2020	National	09/19	0.76
2019	National	06/18	0.75
2018	National	09/17	0.77

### 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. Where appropriate, non-automatic annual mean NO<sub>2</sub> concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO<sub>2</sub> monitoring locations within Fenland District Council required distance correction during 2022, because no locations were within 10% of the objective.

## QA/QC of Automatic Monitoring

The two automatic monitors (AM1 and AM2) situated in 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 [View registration EPR/GP3435WX \(data.gov.uk\)](https://www.data.gov.uk).

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

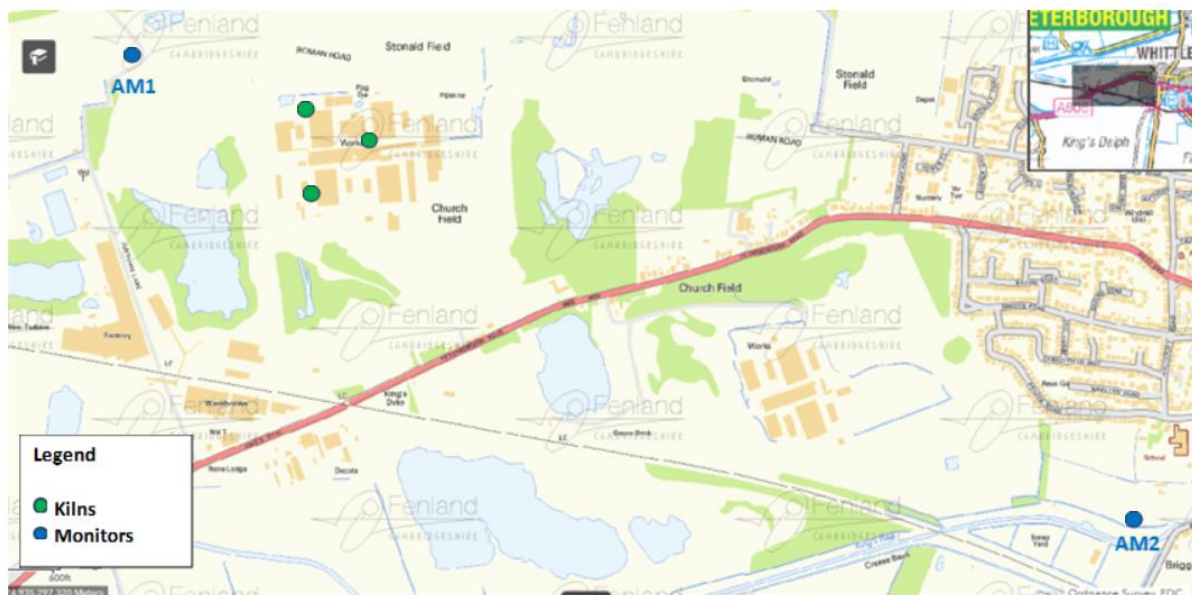
### Automatic Monitoring Sites

In 2022, Fenland District Council did not have any automatic monitoring sites operating. Monitoring of SO<sub>2</sub> is undertaken by Forterra Building Products Limited (formerly Hanson) at two locations in the vicinity of the brickworks in Whittlesey. As part of their environmental permit Forterra operate a continuous ambient monitoring station (CAMS) to the east-southeast of the former Saxon Works (Park Lane CAMS (formerly Saxon) and a second CAMS to the north of the Kings Dyke Works (Bradley Fen CAMS).

### NO<sub>2</sub> Diffusion Tube Monitoring Sites.

In 2022 Fenland monitored at 41 monitoring locations across the four market towns and two villages. The locations are detailed below.

**Figure D.1 – Map of Automatic Monitoring Sites**

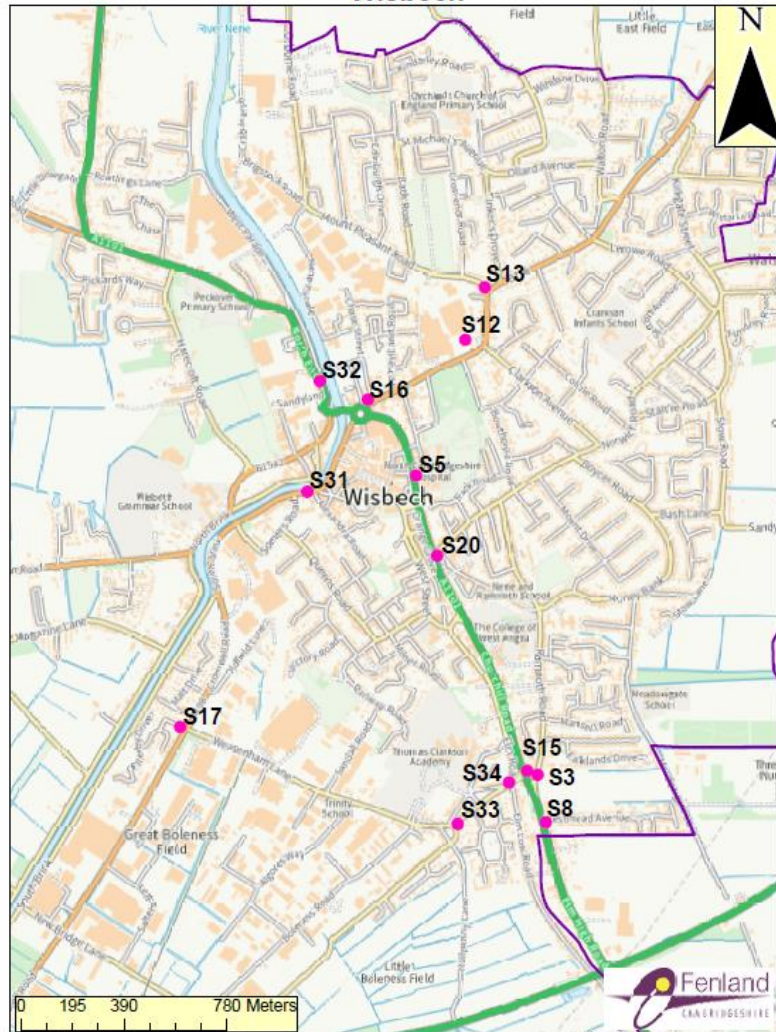


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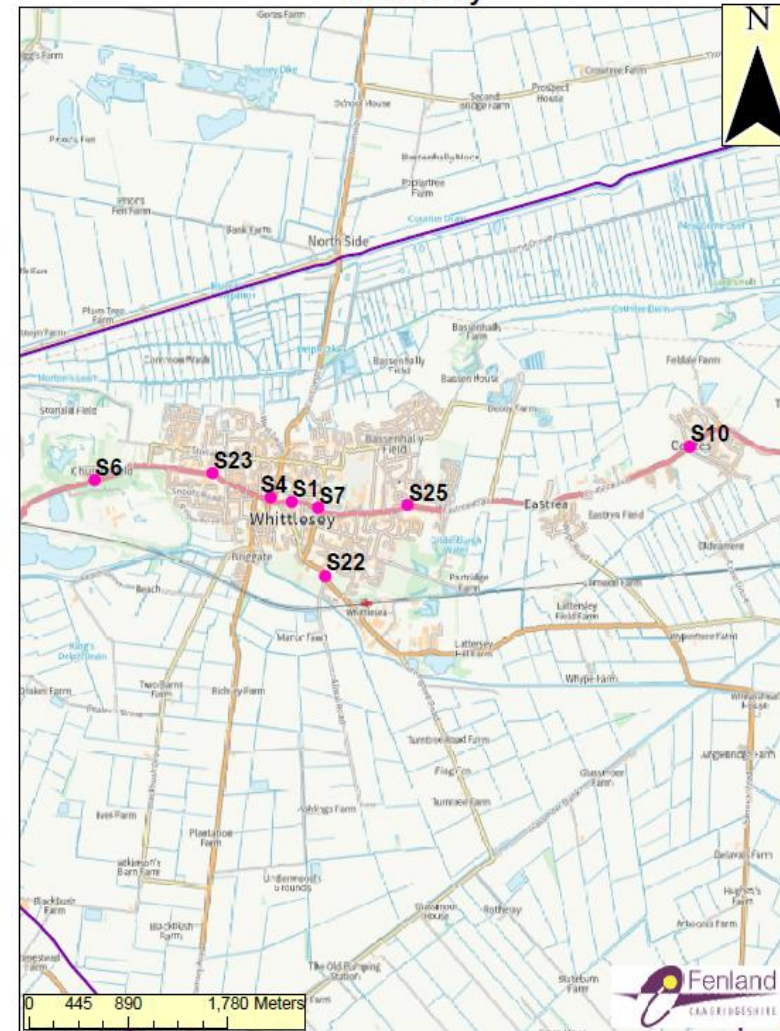
Figure D.2 – Map Non-Automatic Monitoring Sites

NO2 Tube Monitoring Locations in Wisbech



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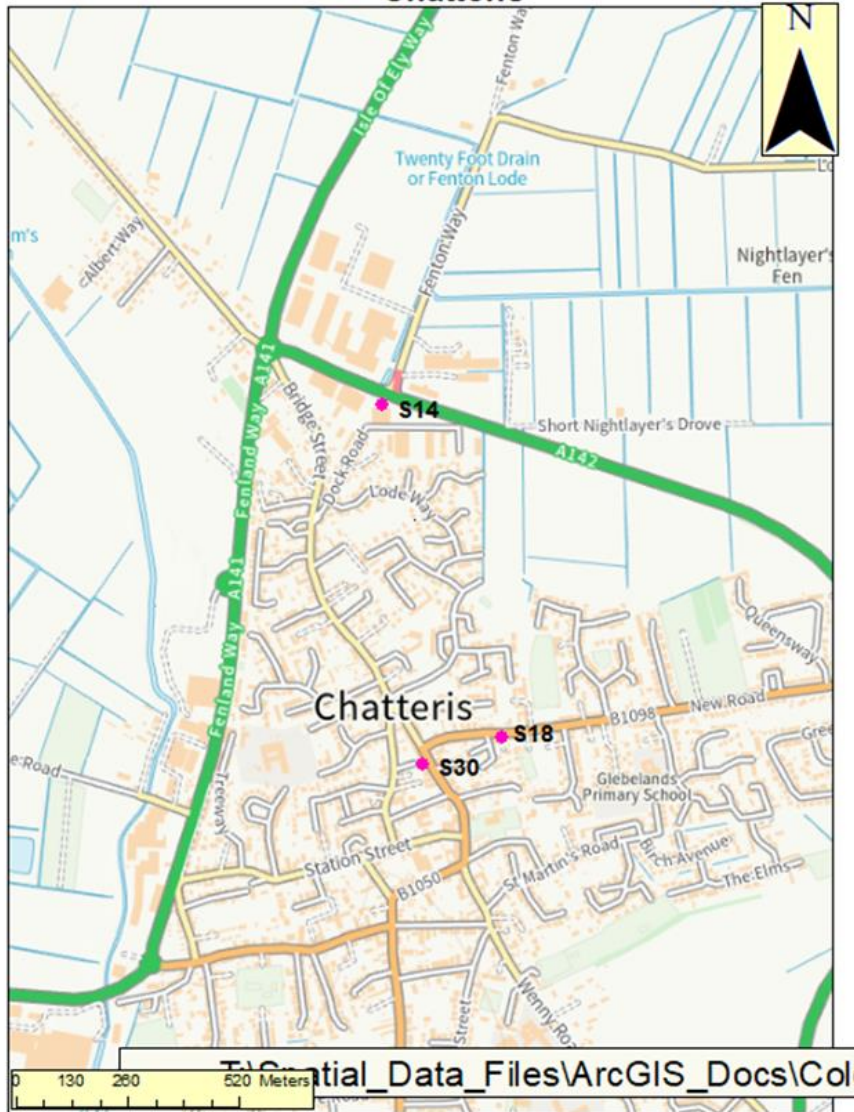
NO2 Tube Monitoring Locations in Whittlesey



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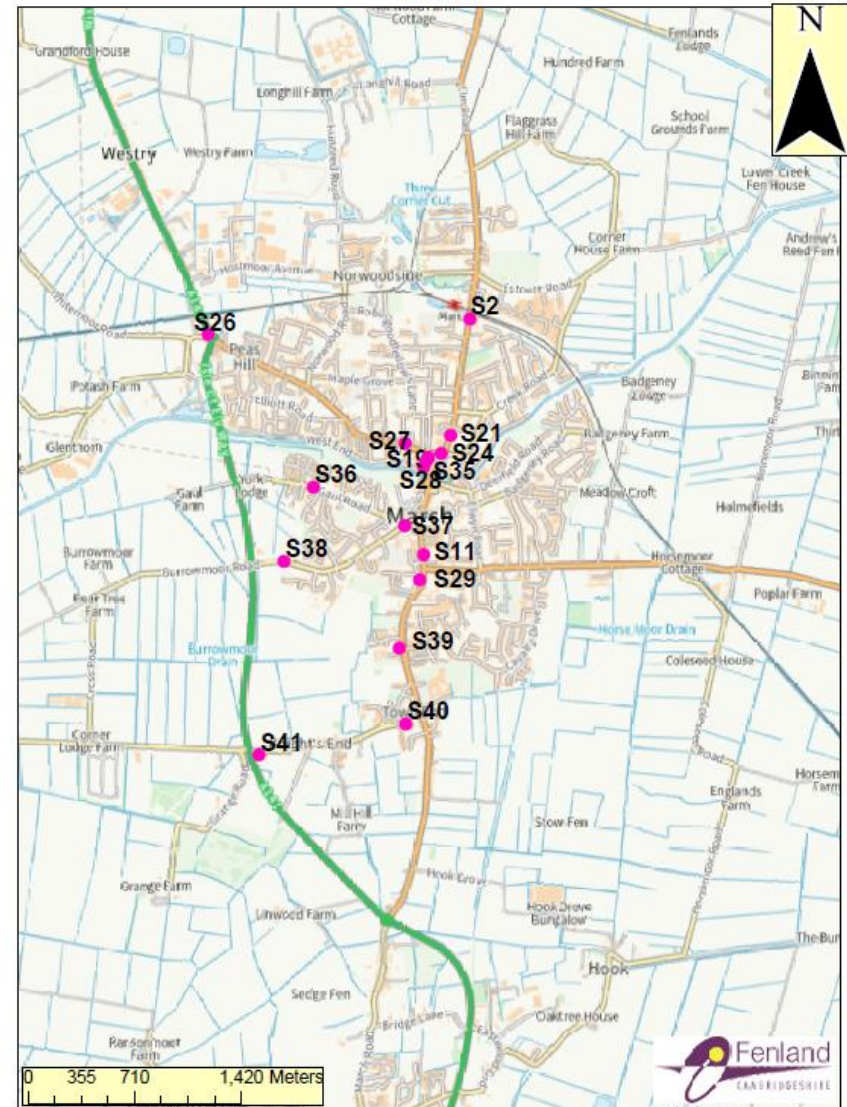


### NO2 Tube Monitoring Locations in Chatteris



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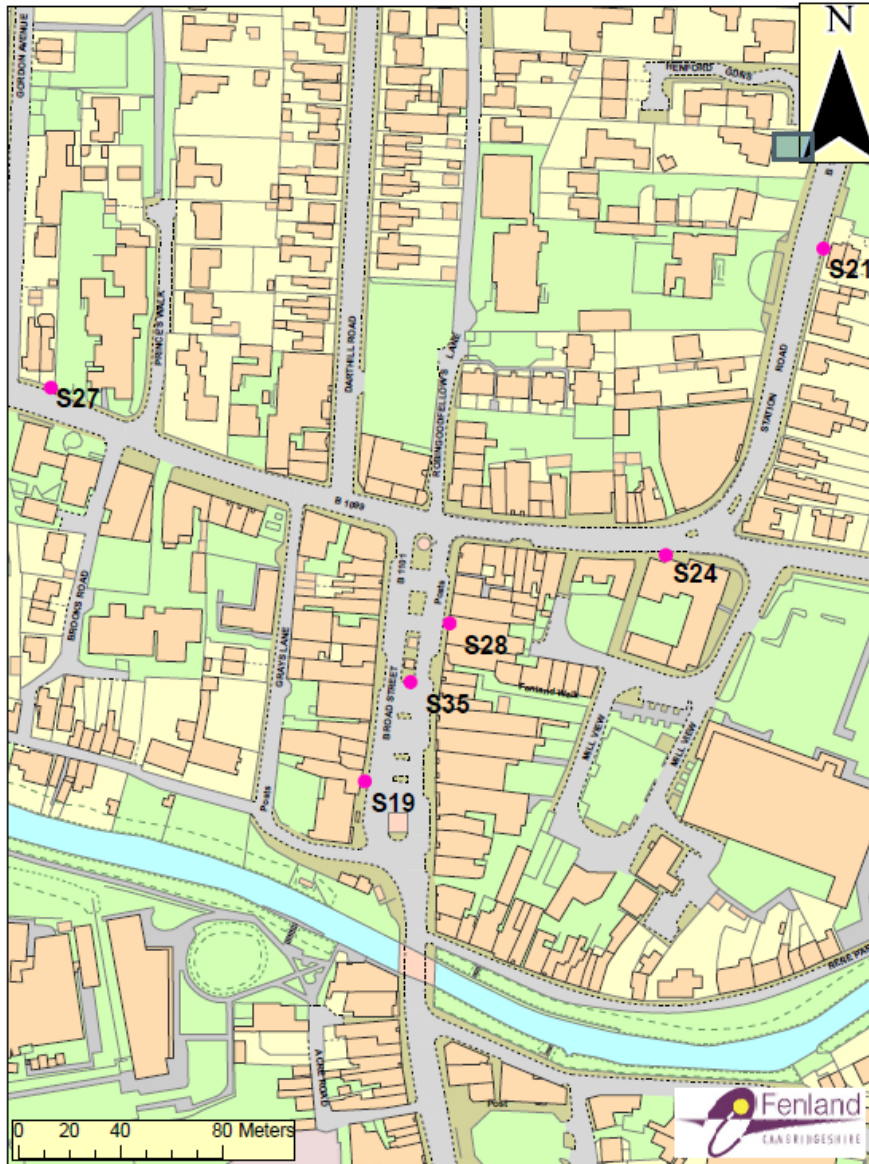
### NO2 Tube Monitoring Locations in March



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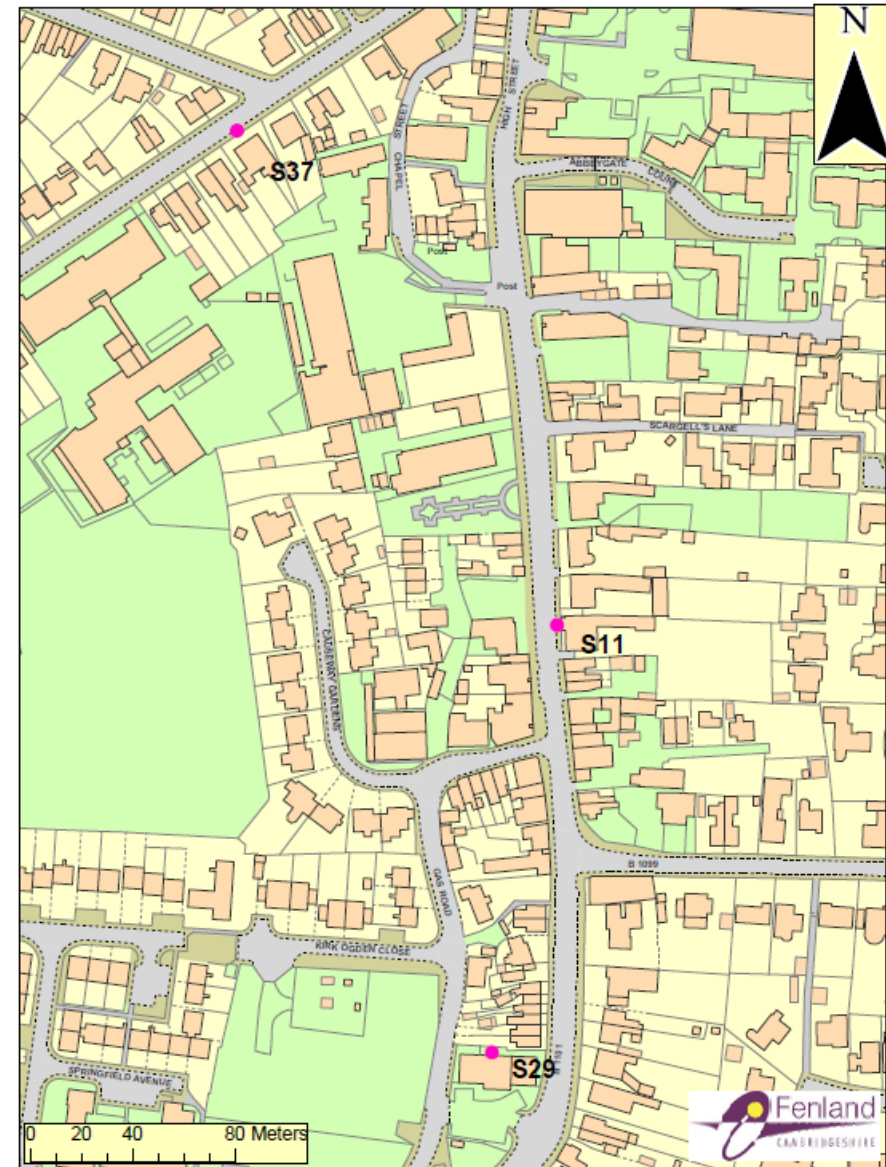


**NO2 Tube Monitoring Locations in March Town Centre**



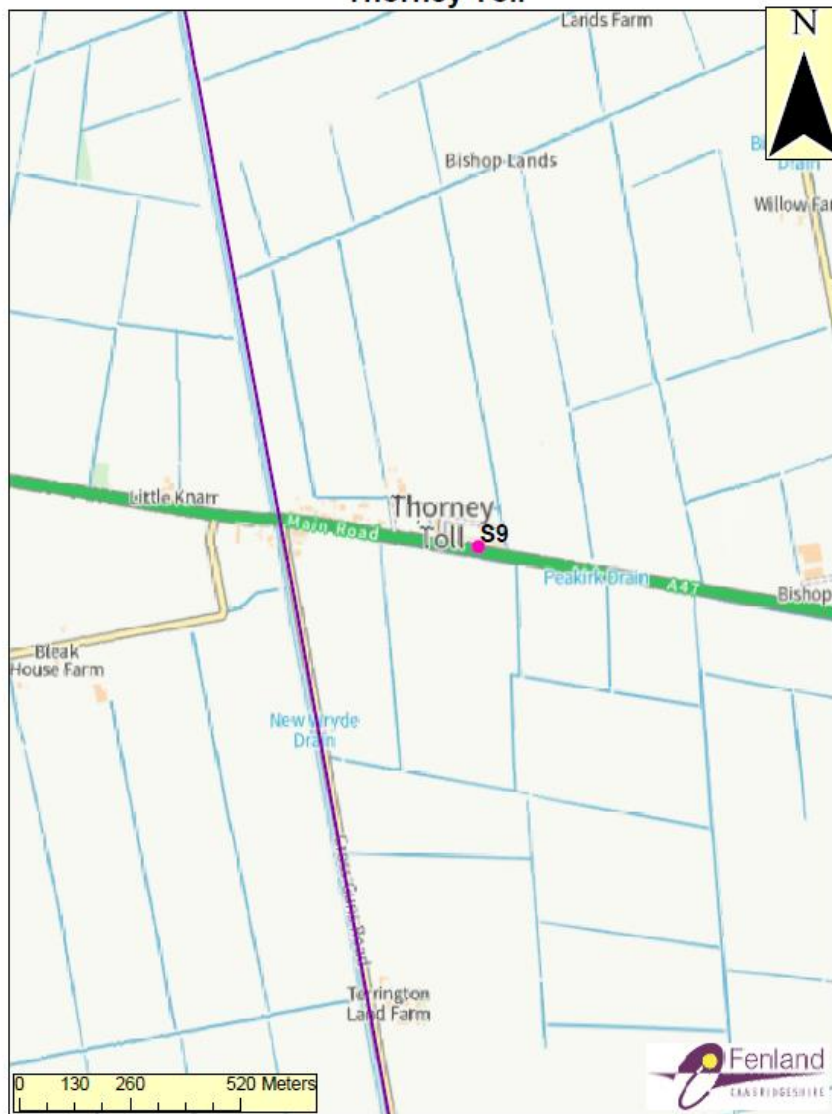
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**NO2 Tube Monitoring Locations in March Town Centre**



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### NO2 Tube Monitoring Locations in Thorney Toll

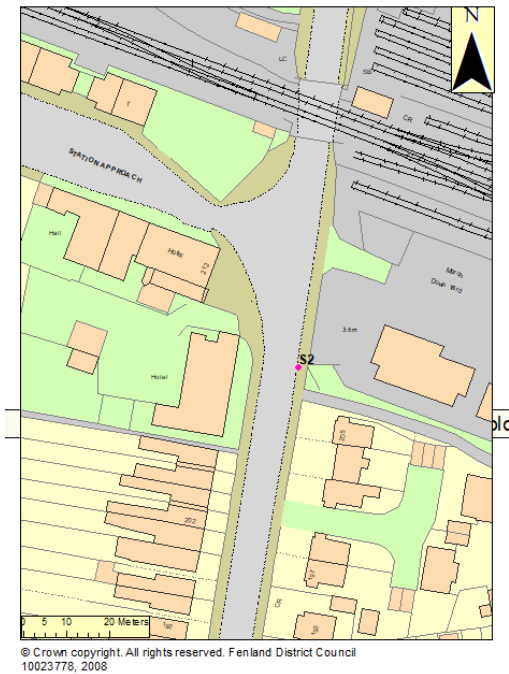


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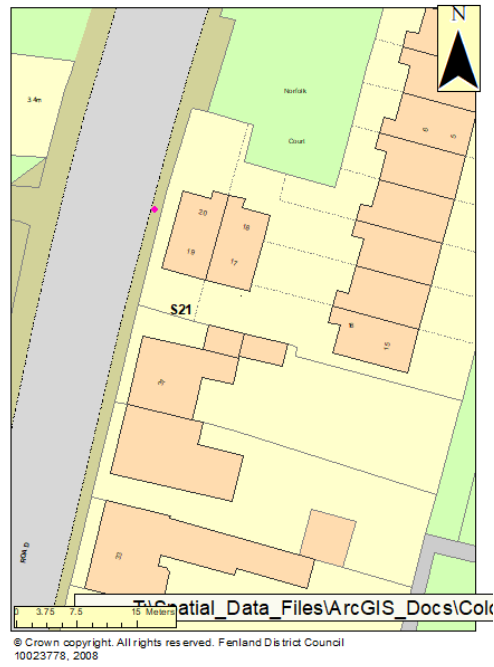
- Diffusion Tube locations

March

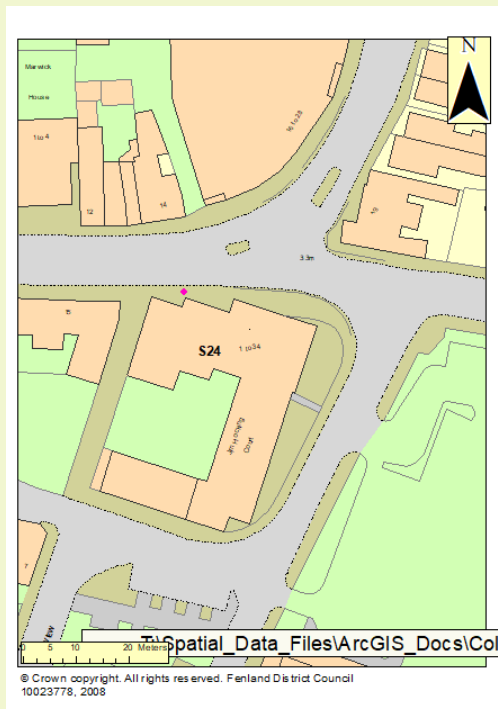
S2 - March Station



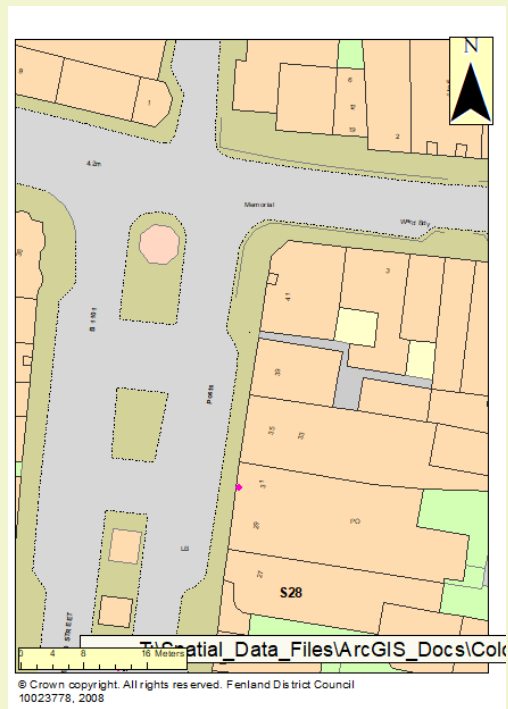
S21 - Norfolk Court



S24 - Hocking Court



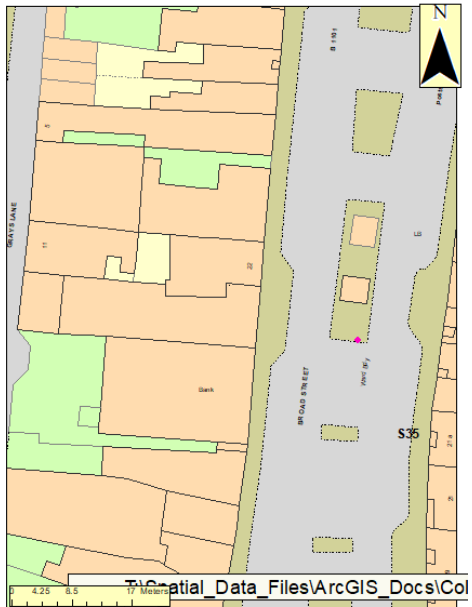
S28 - Tesco/Greggs, March





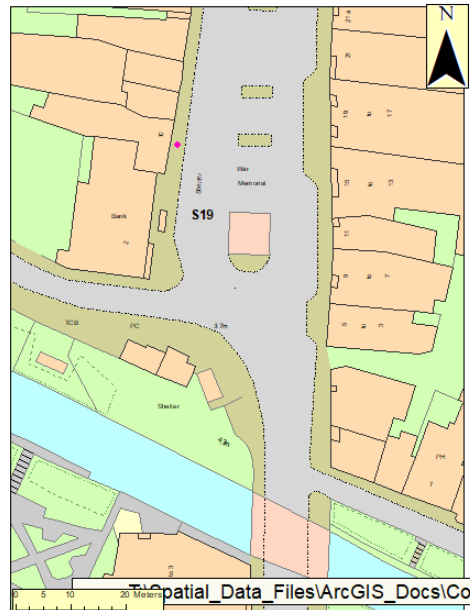
**S35 - Broad Street AQY, March**

**[B1101]**



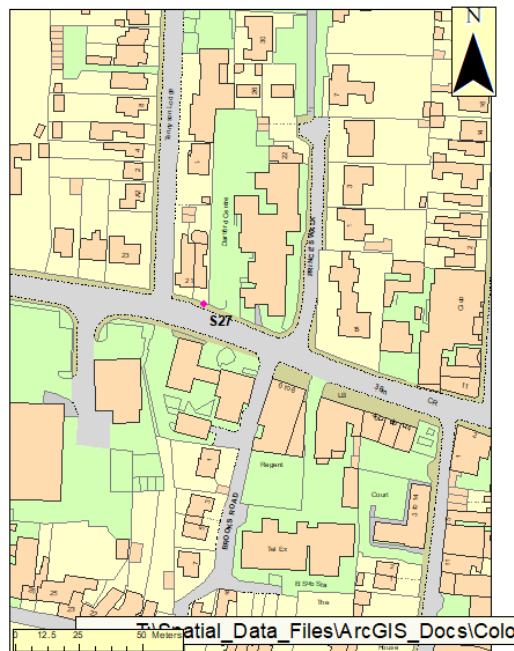
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**S19 – Broad St, March**



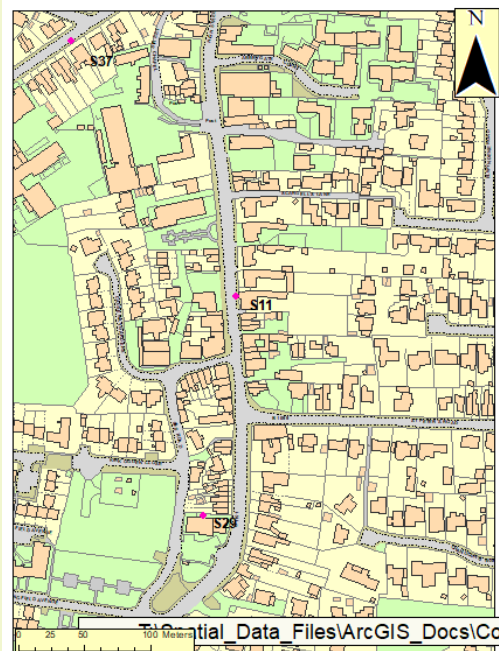
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**S27 - Lidl, March**



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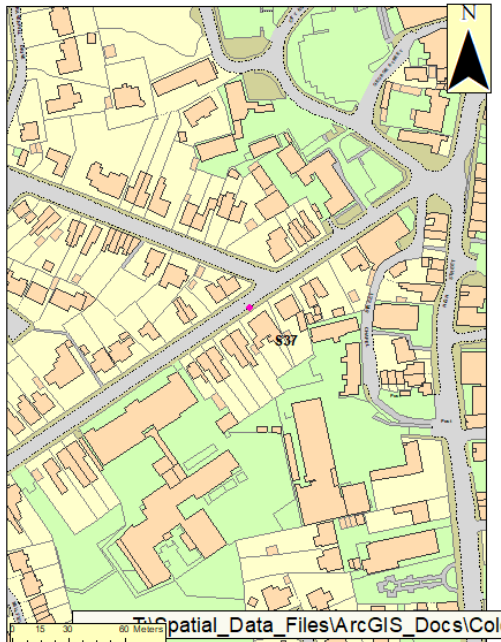
**S11 – St Peters Church, March**



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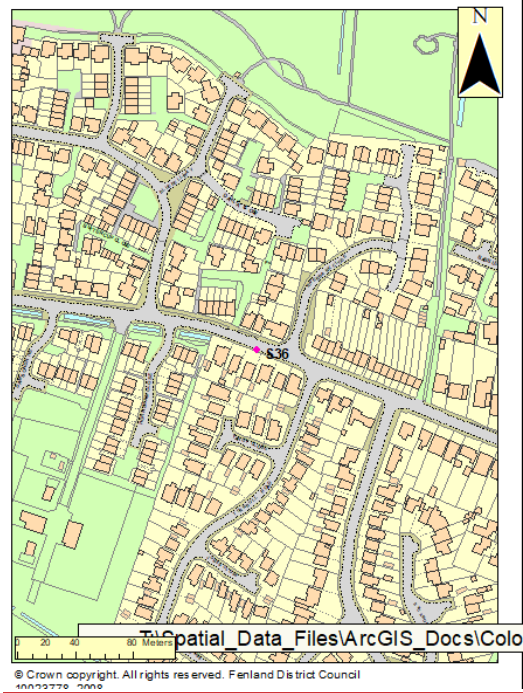
**S37 – Burrowmoor Road, (East)**

**March**



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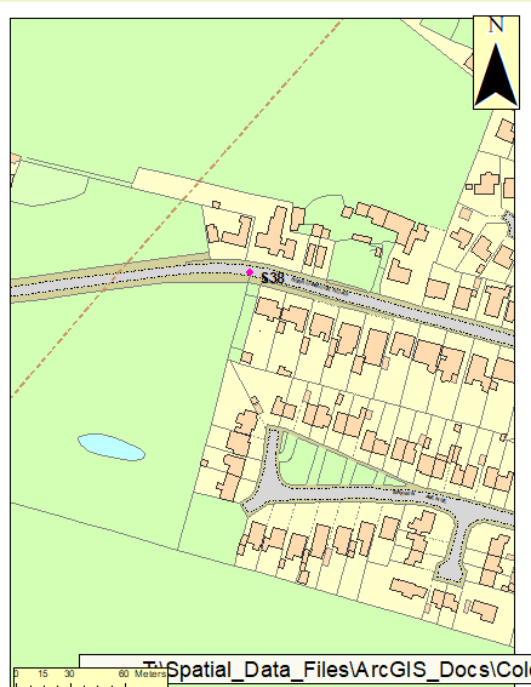
**S36 – Gaul Road, March**



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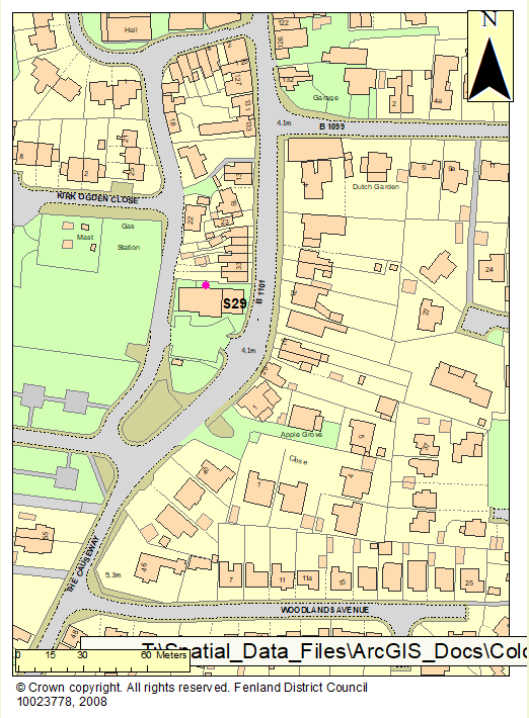
**S38 - Burrowmoor Road, (West)**

**March**



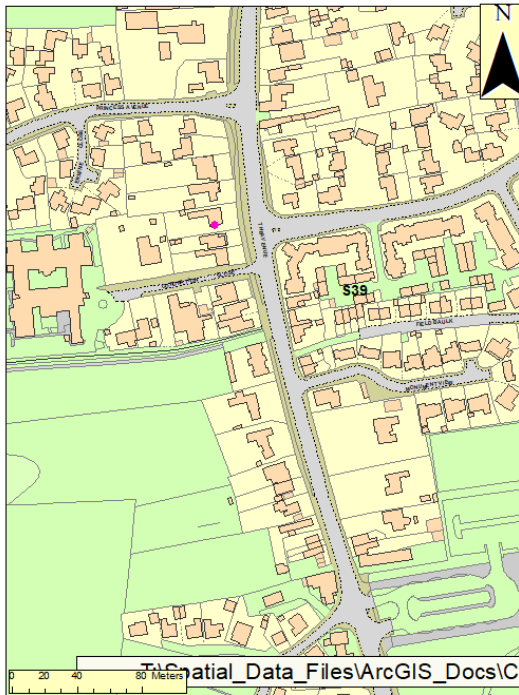
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**S29 - Barnardos, March**



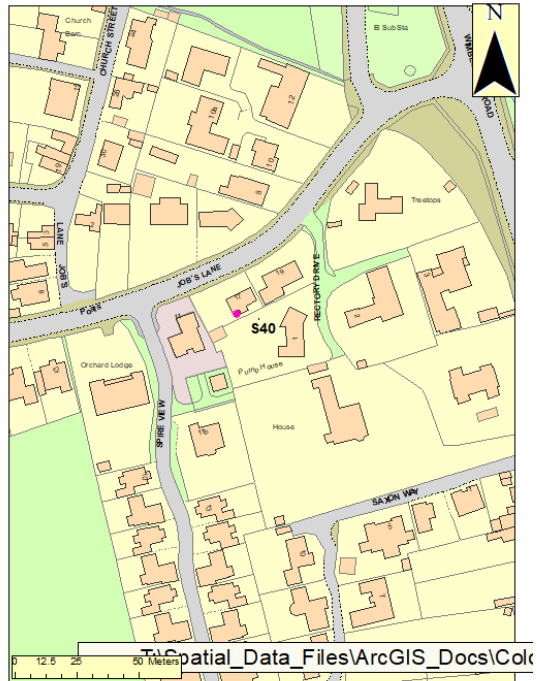
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**S39 - The Causeway/Avenue, March**  
**[B1101]**



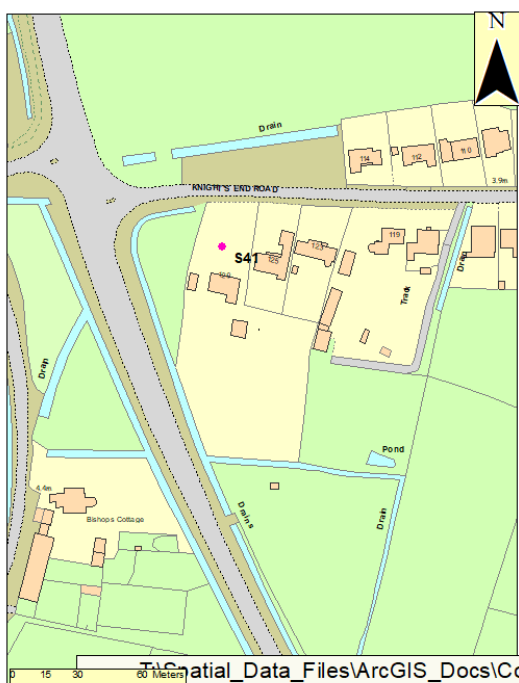
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**S40 - Job's Lane, March**



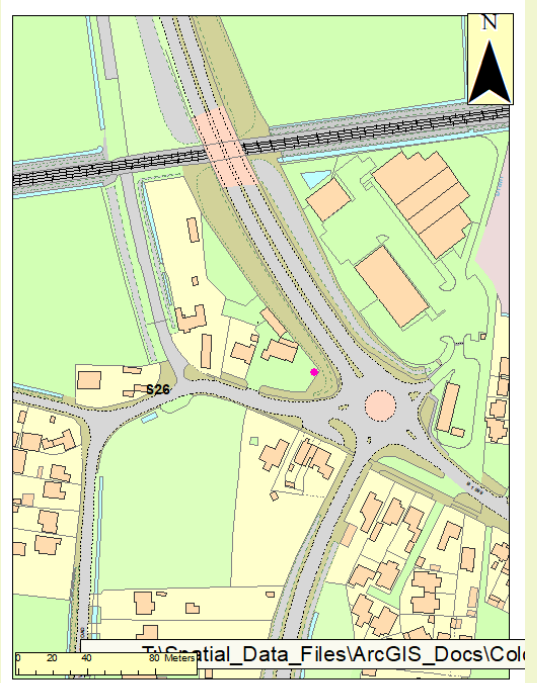
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**S41 - Knights End Road, March**



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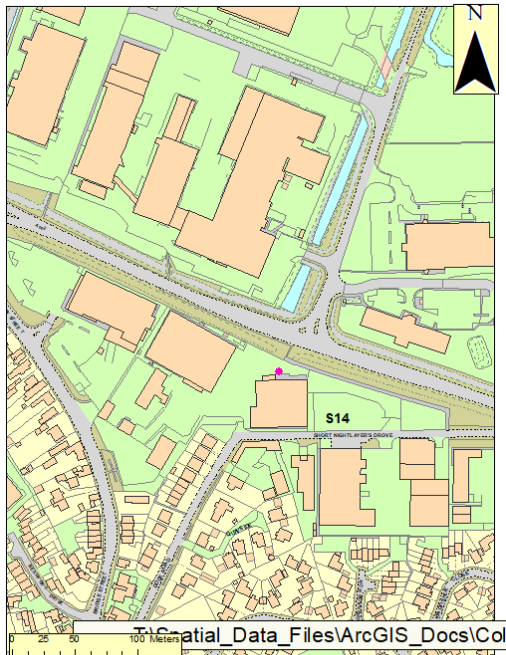
**S26 - Peas Hill R/A**



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**Chatteris**

**S14 - Aldi, Chatteris**



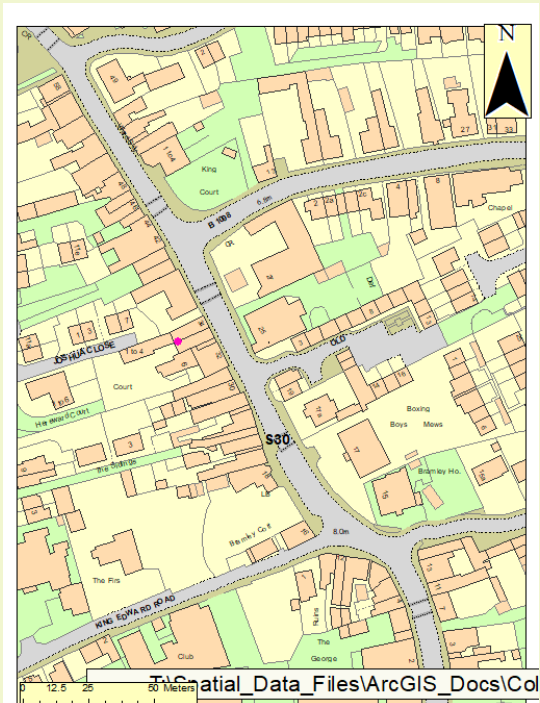
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**S18 - New Road**



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**S30 - Nisa, Chatteris**

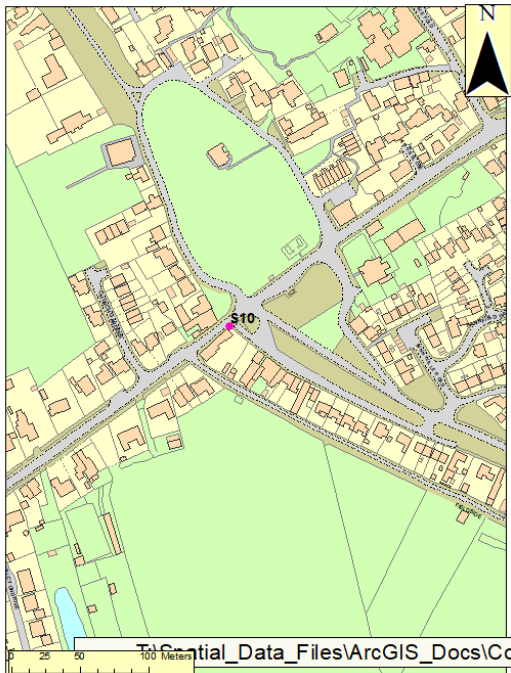


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**Coates**

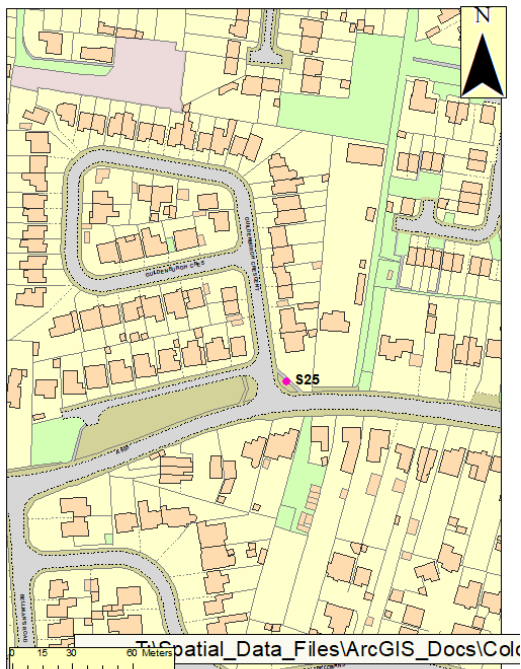
**S10 – Coates**



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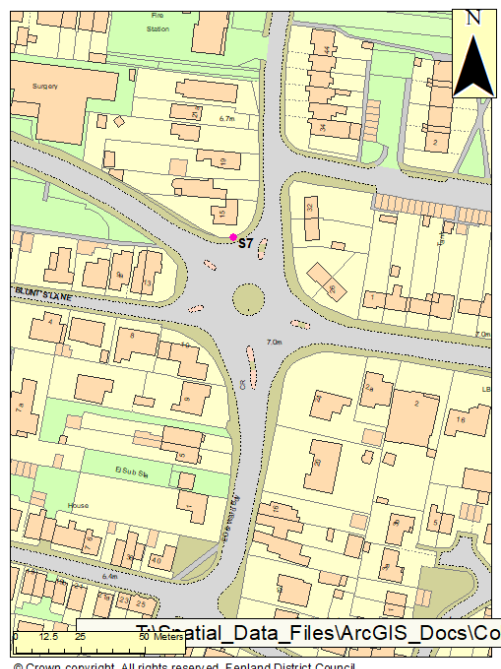
**Whittlesey**

**S25 - Gildenburgh Crescent**



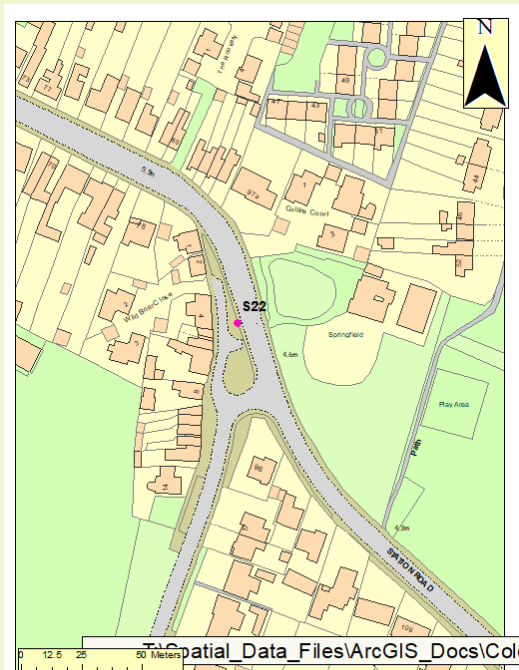
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**S7 - Cemetery Road R/A**



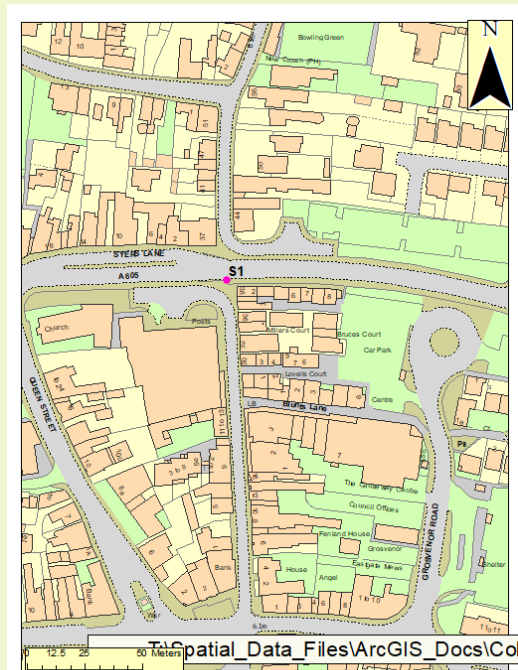
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**S22 – Wildboar/Station Road**



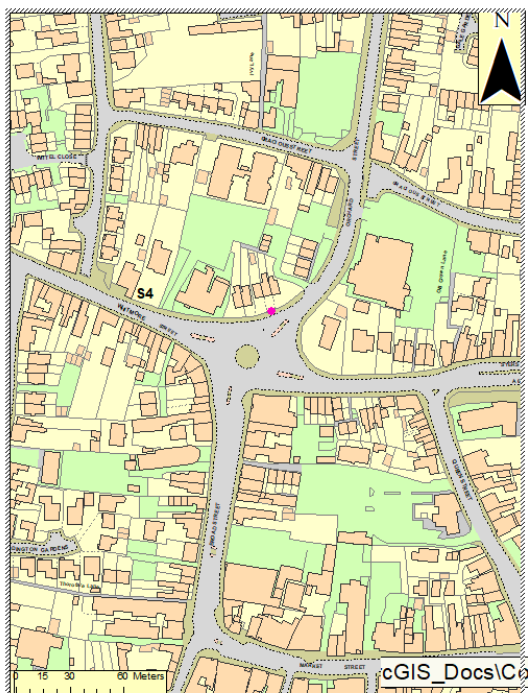
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**S1 – A605 Whittlesey**



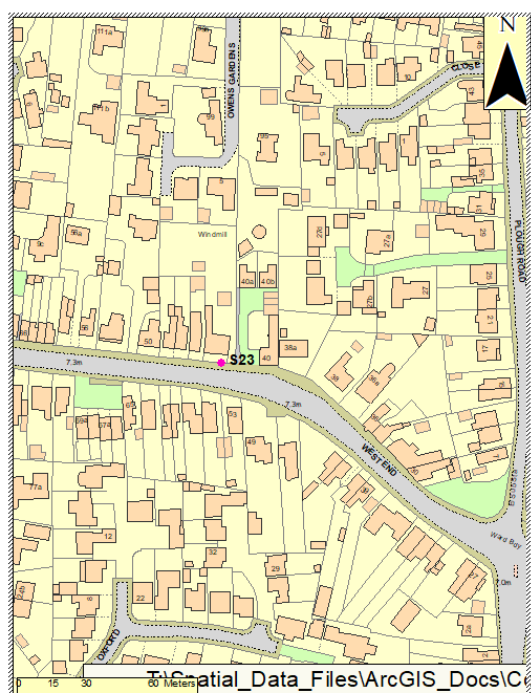
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**S4 – Orchard Street R/A**



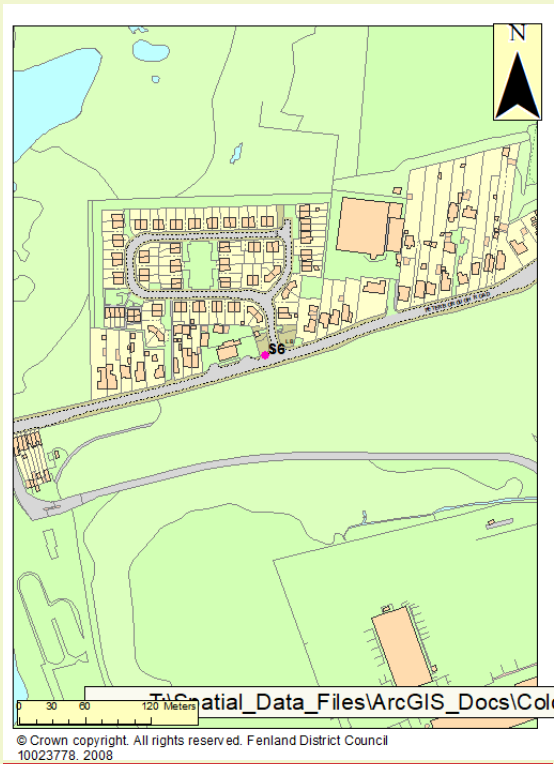
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**S23 – West End, Whittlesey**



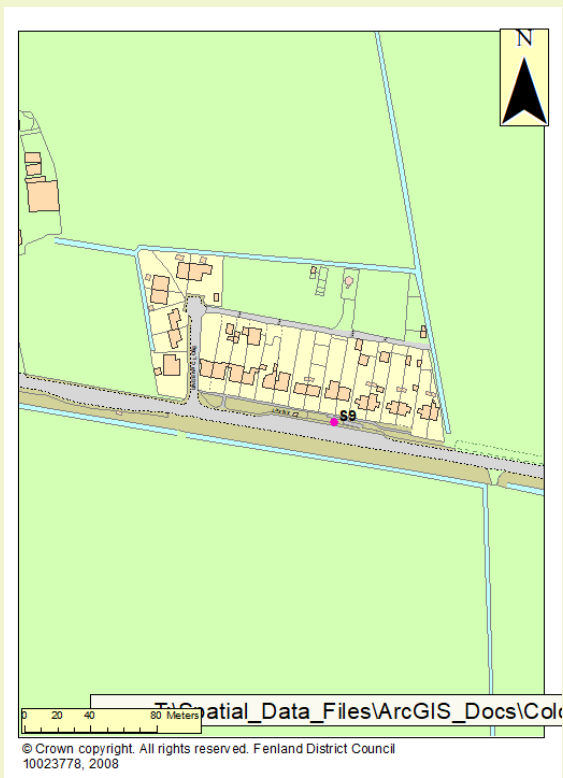
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**S6 - Kings Dyke**



**Thorney Toll**

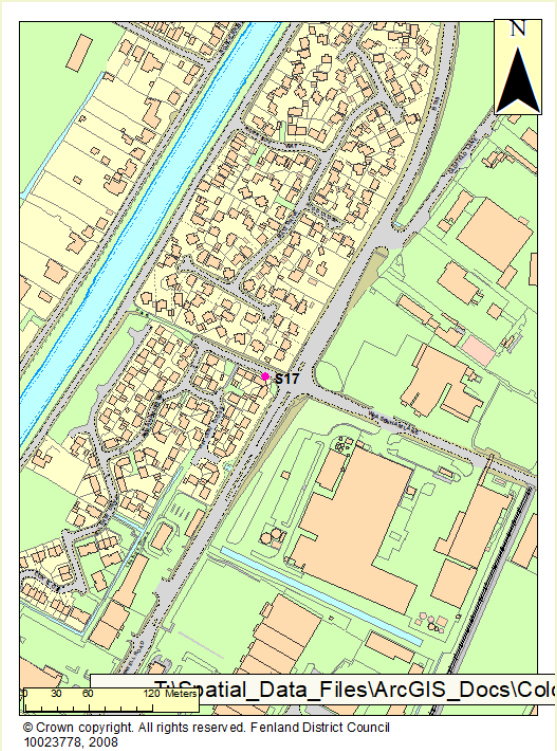
**S9 – Thorney Toll**



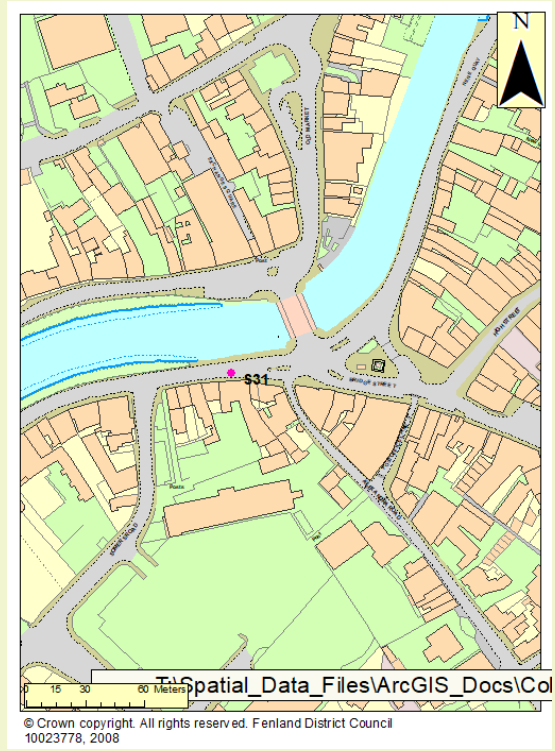
**Wisbech**

**S17 - Weasenham Lane / Cromwell**

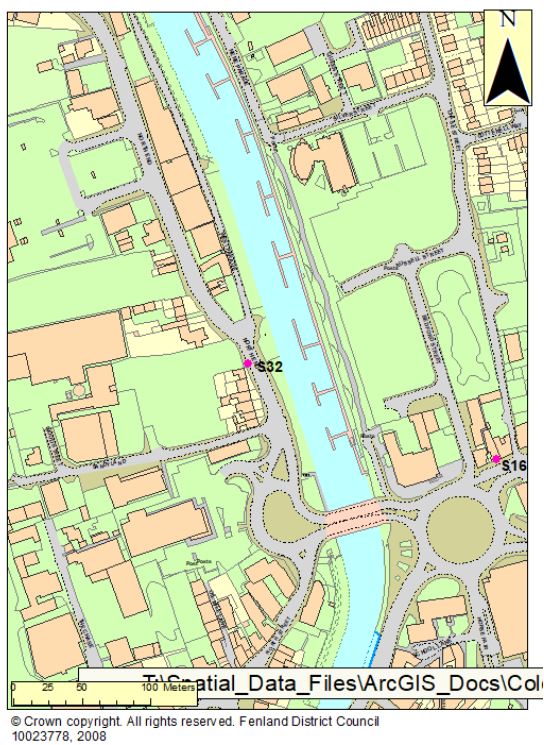
**Road**



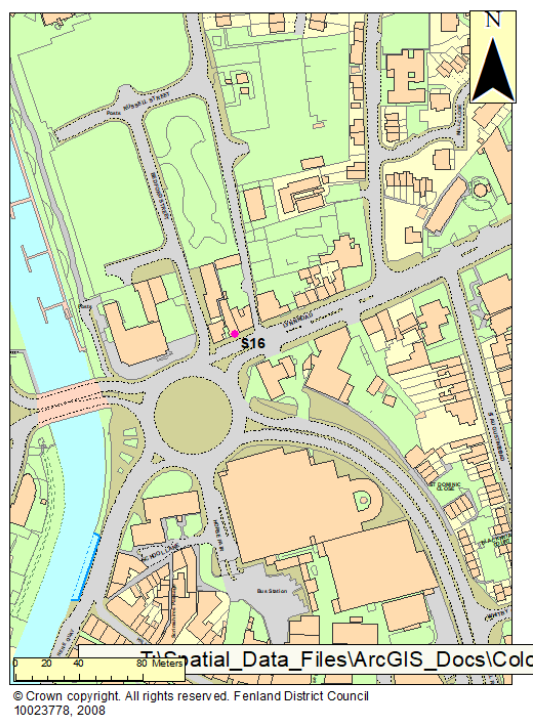
**S31 - White Lion, Wisbech**



**S32 - North End, Wisbech**

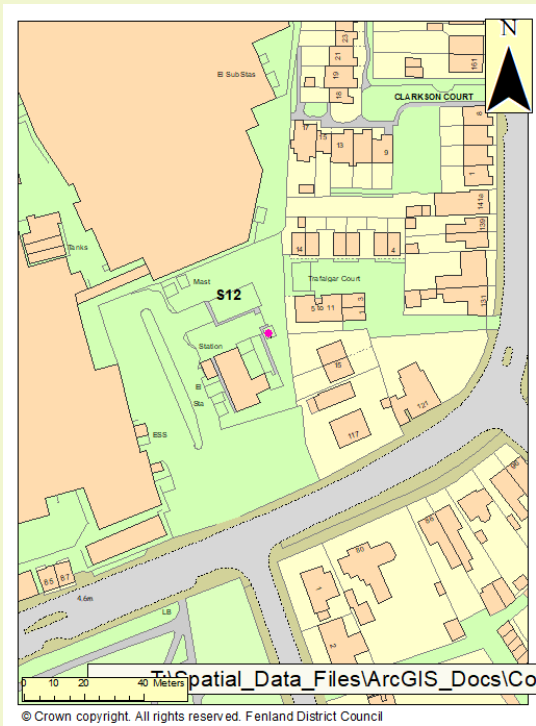


**S16 - Lynn Road R/A**

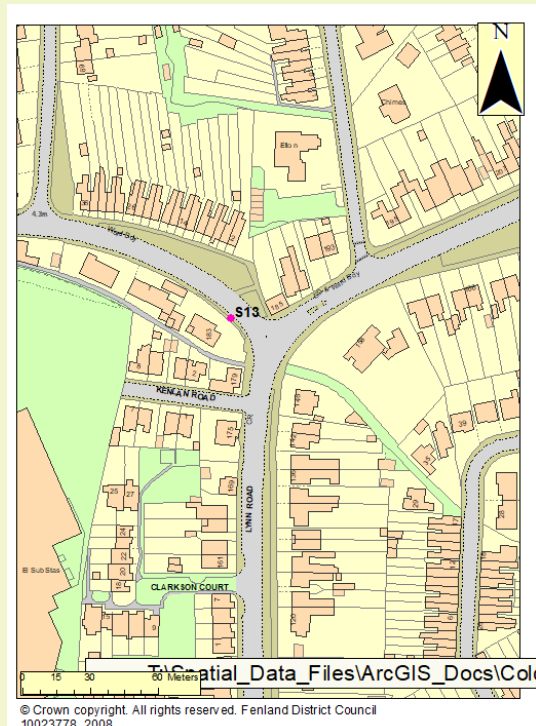




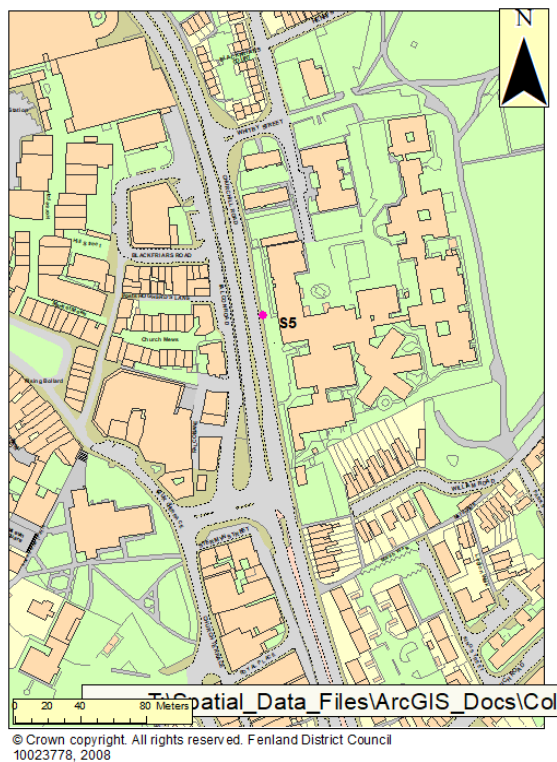
**S12 - Lynn Road AWS**



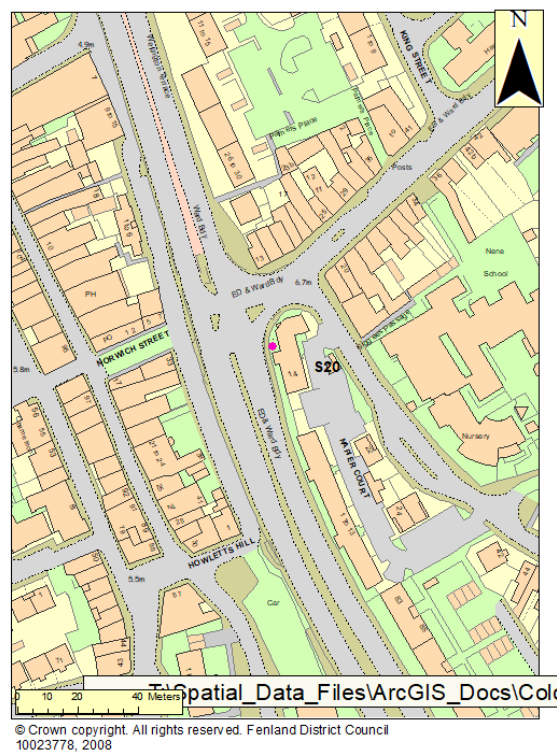
**S13 - Lynn Road / Mt Pleasant**



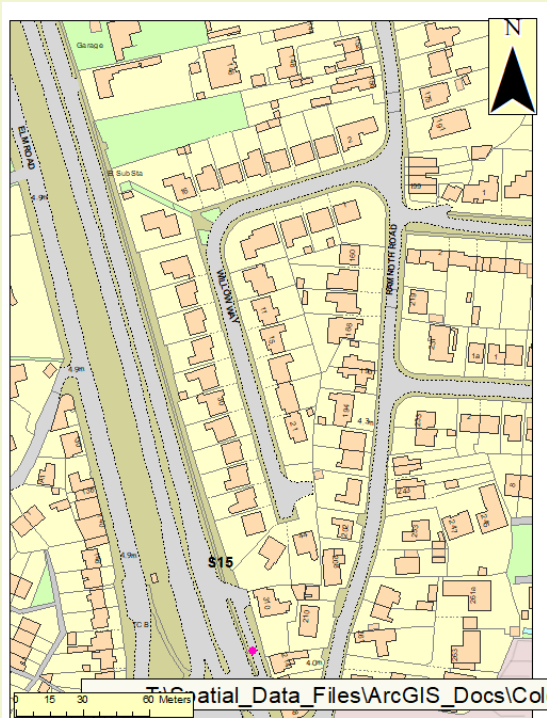
**S5 - Churchill Road**



**S20 - Napier Court**

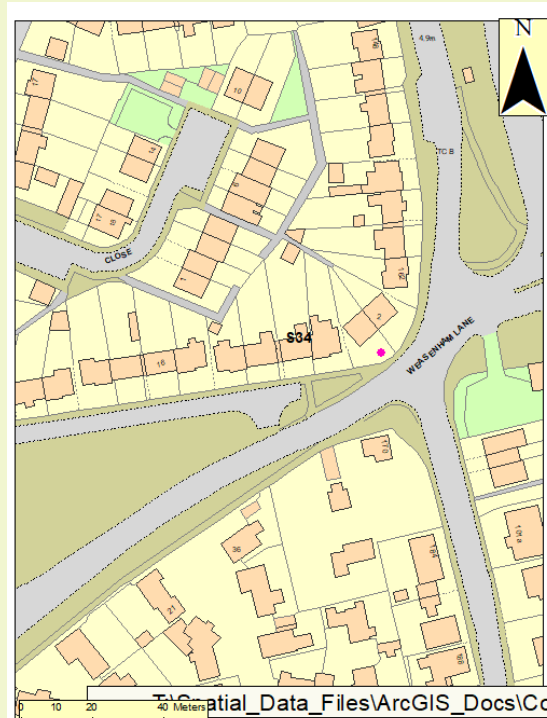


**S15 - Weasenham Lane**



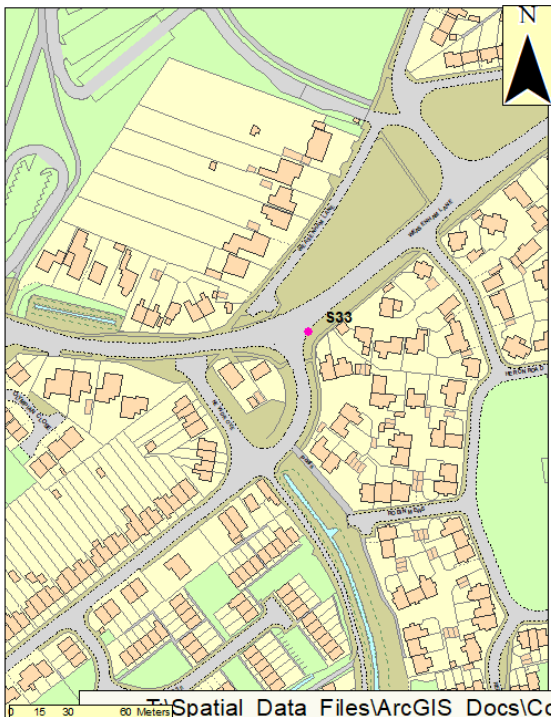
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**S34 - Weasenham Lane AQY, Wisbech**



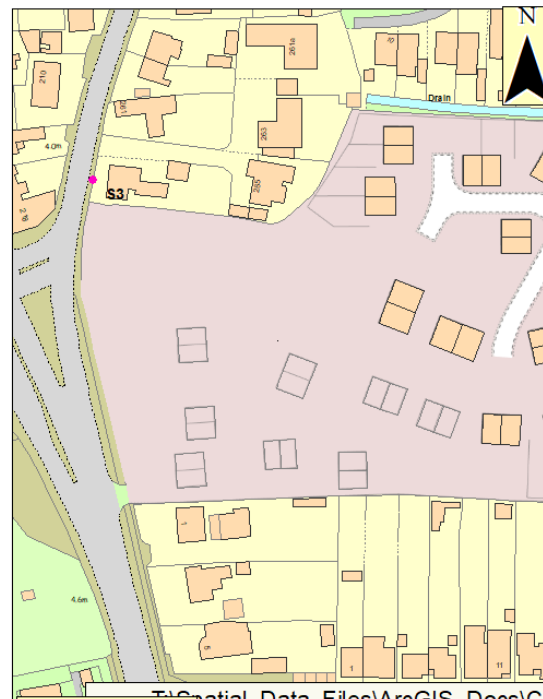
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**S33 - Weasenham Lane/New Drive, Wisbech [B198]**



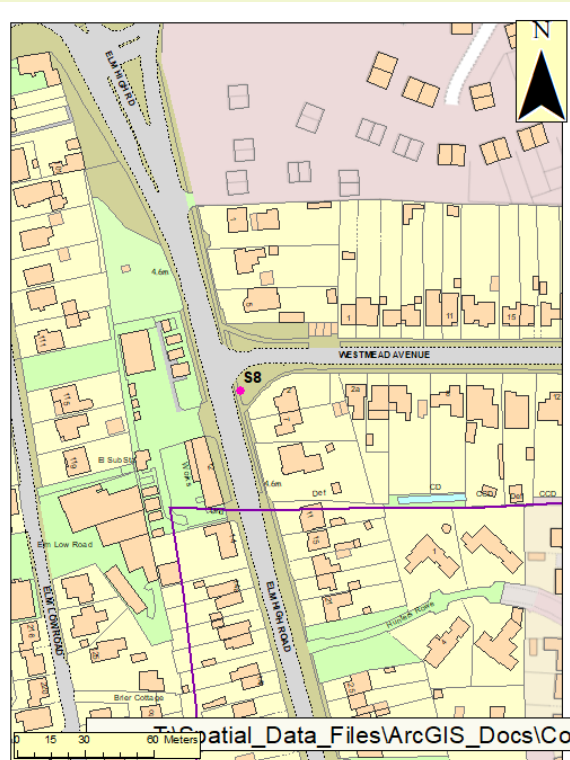
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**S3 - Ramnoth Road**



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**S8 - Westmead Ave**



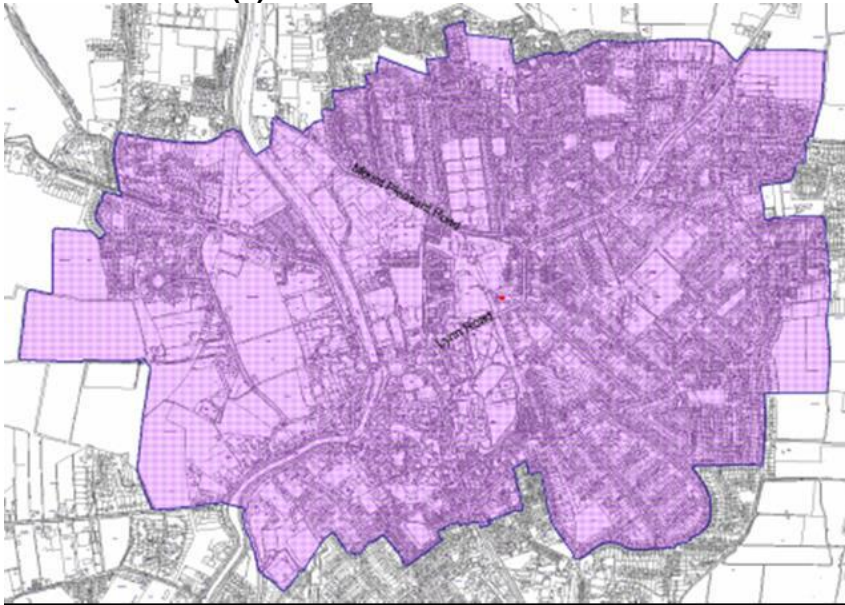
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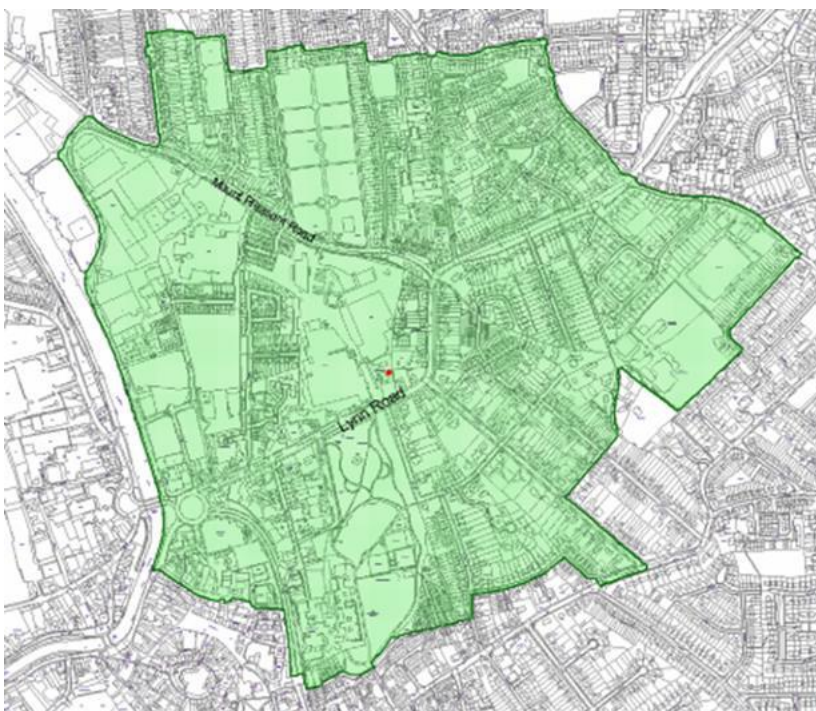
## Figure D.2 – Map Air Quality Management Areas

**Wisbech AQMA (1) SO<sub>2</sub>**



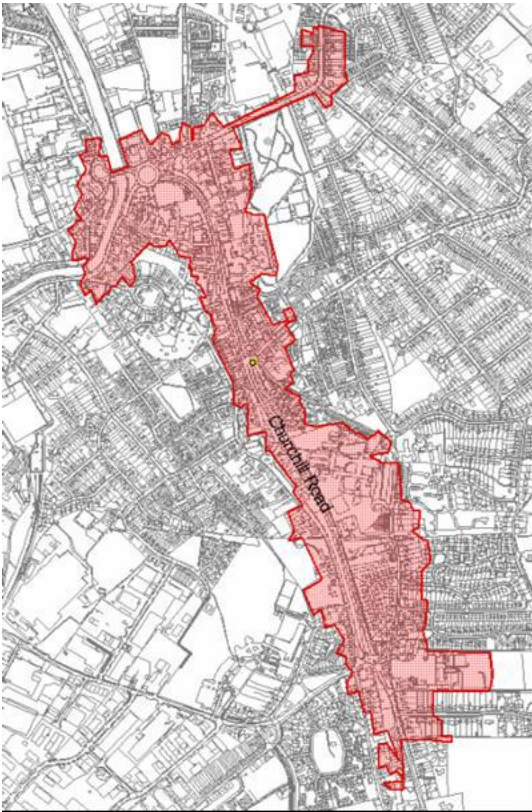
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**Wisbech AQMA (2) PM<sub>10</sub>**



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### Wisbech AQMA (3) NO<sub>2</sub>



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### Whittlesey AQMA SO<sub>2</sub>



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

**Table E.1 – Air Quality Objectives in England<sup>7</sup>**

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

<sup>7</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).

## 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 <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	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.