



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: June, 2023

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Executive Summary: Air Quality in Our Area

Air Quality in East Suffolk

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 29,000 to 43,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

Generally, the air quality within East Suffolk is good. Following revocation of the Air Quality Management Area (AQMA) declared in Woodbridge in 2022, there is now one small, localised area where the objective for annual mean nitrogen dioxide (NO₂) has been exceeded in the past, and for which an AQMA is currently declared;

- Four residential properties within Long Row, Main Road (A12) in Stratford St Andrew. Additional information can be seen at [Stratford St Andrew AQMA » East Suffolk Council](#)

Further detail regarding the current AQMA at Stratford St Andrew and the revoked AQMA at Woodbridge is provided in Section 2.

The main source of emissions within East Suffolk is road traffic, which means that the pollutants of concern are nitrogen dioxide (NO₂) and particulate matter. Within the town of Felixstowe, emissions from, and associated with, the Port are also a source of these two

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, January 2023

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

pollutants. Emerging evidence on the percentage contribution of domestic burning to emissions of particulate matter also makes this an important source for East Suffolk.

NO₂ is measured in the district by an automatic analyser and multiple diffusion tubes. There automatic analyser is situated within Woodbridge, and in 2022 there were 80 diffusion tube monitoring locations covering 23 areas; Beccles, Blythburgh, Bungay, Farnham, Felixstowe, Kesgrave, Little Glemham, Leiston, Little Bealings, Lowestoft, Marlesford, Martlesham, Melton, Middleton, Oulton Broad, Saxmundham, Stratford St. Andrew, Theberton, the Trimleys, Tunstall, Wickham Market, Woodbridge and Yoxford.

The 2022 monitoring results show **no** exceedances of the annual mean NO₂ objective at any site of relevant exposure.

To improve the accuracy of data collection, a number of triplicate sets of diffusion tubes are reported. In 2022, there were four new monitoring locations sited to investigate concerns raised by local residents and possible changes due to future development in East Suffolk. Seven sites across the district were removed, six showing low concentrations of NO₂, and one due to site inaccessibility following long term construction activity nearby. Further detail is provided in Section 3.

NO₂ concentrations within the declared AQMA at Stratford St. Andrew were within the objective in 2022 for the sixth year running, but have only been outside of 10% of the objective (<36 µg/m³) for three consecutive years. The Defra guidance advises that with three consecutive years below 36µg/m³ and a trend of reduction revocation should be considered. However, these three years include monitoring data within the years of 2020 and 2021, for which the Defra Helpdesk has advised that this data is likely to have been impacted by the COVID-19 pandemic and should not be used. East Suffolk Council (ESC) is therefore not considering revocation of this AQMA currently.

Annual mean NO₂ concentrations within the revoked AQMA at Woodbridge were within the objective in 2022 for the ninth year running.

There is a general trend of NO₂ reductions across the Council over time. Monitoring in 2020 reduced at all monitoring locations, which is likely due to the impact of COVID-19 and associated travel restrictions in 2020. During 2021 and at some sites in 2022 there has been a slight increase in NO₂ concentrations following lifting of the of travel restrictions. These trends are in line with those seen Nationally. The exception in ESC are sites LOW 2 and LOW 7, both in Lowestoft, which show fluctuating concentrations between 2018 and 2022 with the concentrations in 2018 and 2022 being the same – no

overall reduction. It is predicted that traffic easing in Lowestoft will be seen once the Gull Wing Crossing over Lake Lothing is open later in 2023, and this in turn should help reduce NO₂ concentrations across the town. Further detail is provided in Section 3.

In order to fulfil the council's statutory duties, ESC continues to retain one 0.4 full-time equivalent dedicated air quality officer within the Environmental Protection Team, with support from other members of the team undertaking air quality work, including responses to planning applications. ESC has obtained agreement for one 0.6 full-time equivalent Air Quality Projects Officer and we are looking to recruit to this role.

Links and contacts have been forged through the Suffolk Air Quality Group to allow partnership working with the following organisations:

- Suffolk local authorities;
- Suffolk County Council (Highways, Public Health and Trading Standards);
- Highways England;
- Public Health England;
- NHS

Liaison with the Environment Agency is undertaken as and when required for specific premises.

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 Plan⁵ sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term PM_{2.5} 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_{2.5} in their areas. The Road to Zero⁶ details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely

⁵ Defra. Environmental Improvement Plan 2023, January 2023

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

important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

There have been a number of actions undertaken by ESC during the last year to help reduce pollutant emissions and/or provide information to aid us with our air quality plans.

These are detailed in Section 2. Key measures completed this year are:

- Making the Revocation Order for the Woodbridge AQMA - 29th September 2022
- Adoption of the ESC Cycling and Walking Strategy, October 2022
- Adoption of the ESC Sustainable Construction Supplementary Planning Document, April 2022.
- Launch of the Go Jauntly walking app for Suffolk
- Purchase of 3 hybrid electric vehicles for use at ESC's Port Health Offices
- Adoption of the ESC Clean Hydrogen Strategy 2023-2028, December 2022
- Domestic burning education campaign undertaken by ESC Autumn 2022
- Purchase and siting of a Particulate Matter sensor within the ESC district, funded by ESC



- Completion of the Quiet Lanes project with 199 declared within ESC covering 61 parishes.
- Contribution (together with other Suffolk district and borough councils) to development of Suffolk County Council's (SCC) Suffolk Air Quality Strategy. Due to be signed off May 2023.
- Suffolk Air Quality Group and SCC Public Health preliminary collaborative work on future public engagement plans for Suffolk.
- Successful bid to Active Travel England by SCC, ESC and Woodbridge Town Council for £5million by to undertake a 'Mini Holland' scheme in Woodbridge. An additional Department for Transport funding bid submitted to expand the scheme in Woodbridge and include Melton (Melton Parish Council are also involved in this bid).

- 3 temporary trial cycling schemes have been made permanent by SCC: East of Beccles to Ellough Road in Beccles; Hamilton Road in Felixstowe and High Road East and West in Felixstowe.

Development Consent Orders

There are a number of Nationally Significant Infrastructure Projects (NSIPs) applying for Development Consent Orders (DCOs) within the ESC district. ESC has been involved extensively in scrutinising the proposals and participating in the Public Examinations for the current DCO applications with regard to air quality impacts within the district, including the declared AQMA at Stratford St Andrew and the revoked AQMA at Woodbridge. The current DCOs' are at varying stages;

The Gull Wing, Lowestoft

In 2015 Suffolk County Council was given funding to identify and assess a number of ways of improving north-south connections across Lake Lothing which has culminated in the addition of a third crossing - Gull Wing. The Gull Wing should reduce traffic congestion in the town, and it is hoped will help regenerate the area and attract new investment for the local economy. In 2020, the archaeological surveys and groundworks for the development started and work is progressing on target, with an estimated completion date of mid/late 2023. Additional information can be found at [Gull Wing Lowestoft \(gullwingbridge.co.uk\)](http://gullwingbridge.co.uk)

East Anglia ONE North and East Anglia TWO Offshore Windfarms

The DCO applications for these two projects were submitted to the Planning Inspectorate in October 2019, the Public Examinations closed on 6th July 2021. The Examining Authorities issued Recommendation Reports to the Secretary of State on 6th October 2021, and the applications were granted consent on 31st March 2022. At present, Scottish Power Renewables expect onshore construction to commence in 2024/2025 and energisation to commence in 2027. Further detail on the DCO process is provided by the Planning Inspectorate at [National Infrastructure Planning \(planninginspectorate.gov.uk\)](http://planninginspectorate.gov.uk)

The Sizewell C Project

The DCO application by EDF Energy for a new nuclear power station, Sizewell C, was submitted to the Planning Inspectorate in May 2020. A Public Consultation on improved proposals to the application was carried out in November/December 2020. The Public Examination closed on 14th October 2021 and the Secretary of State granted permission on 20th July 2022. The DCO application has been subject to Judicial Review in the High Court at the end of March 2023 regarding water supply. The outcome was received 22nd June 2023 and the Judicial Review was dismissed. The Final Investment Decision from

the Government for Sizewell C is still awaited, but in the meantime pre-commencement works have begun. This DCO application is referenced in measures STA 7 and STA 8 of Table 2.2 later in this report, and further detail is provided by the Planning Inspectorate at [The Sizewell C Project - planninginspectorate.gov.uk](https://www.planninginspectorate.gov.uk/the-sizewell-c-project/)

Conclusions and Priorities

In 2022, NO₂ concentrations within the Stratford St. Andrew AQMA and the Woodbridge AQMA were below the objective, as were all concentrations of NO₂ monitored throughout the district.

Concentrations in the Stratford St. Andrew AQMA were below the annual mean NO₂ objective for the sixth year running, but have only been outside of 10% of the objective (<36 µg/m³) for three consecutive years including 2020 and 2021. Due to the impacts of the Covid-19 lockdowns, data from 2020 and 2021 are likely to have been impacted and cannot be used - ESC are therefore not considering revocation of this AQMA currently.

Concentrations of NO₂ within the Woodbridge AQMA have been within the objective for the last nine years with a trend of continued reduction and the revocation order for this AQMA was made 29th September 2022.

The key priorities for ESC in 2023 with regard to air quality are to; complete the 1-year air quality sensor monitoring programme for Particulate Matter at our first site and to purchase and site a second air quality sensor within the district; and continue to work with the SCC Public Health team on their AQ Strategy and Public Engagement work.

Additional priorities for 2023 are:

- Continue work on the DCOs (EA1N, EA2, SZC) and agree the outline plans, such as; Outline Construction Traffic Management Plan, Outline Travel Plan, Outline Code of Construction Practice, Air Quality Management Plan, Construction Workforce Travel Plan, Outline Dust Management Plan, Dust Monitoring and Mitigation Plans.
- Action a further winter solid fuel and wood burning education campaign.
- Continue work to reduce carbon emissions moving towards carbon neutral.
- Continue to work with stakeholders on the Mini Holland Scheme for Woodbridge and Active Travel scheme for Grange Road in Felixstowe.
- Update the East Suffolk Air Quality Strategy.
- Continued assessment of Planning applications for any impact on air quality.

Local Engagement and How to get Involved

It is really important that we hear the views and comments of our residents, as local knowledge is invaluable. We are continuously updating the [air quality pages](#) on our website, which include lots of air quality information.

If you would like to be more directly involved in environmental issues you may wish to join the East Suffolk Greenprint Forum. This is a voluntary network which provides a link between public and voluntary organisations and community groups to share skills and experiences as well as acting to assist local environmental action in communities and organisations. It has successfully operated since 1996 and has approximately 200 members. It is facilitated by ESC and its Steering Group includes representatives of local voluntary organisations. Membership is free and open to all. For further details go to the [East Suffolk Greenprint Forum webpage](#).

During the latter part of 2019 and in 2020, the Council, together with all the other Local Authorities across Suffolk worked with Suffolk County Council's Transport and Public Health colleagues to prepare an 'Air Quality Profile' report for Suffolk. The report maps, at a district and borough level, local air pollution levels and explores evidence-based interventions that can be undertaken by local authorities, businesses, communities and individuals to improve air quality. The report was published in June 2021. As a result of the report, air quality was made a priority by [the Suffolk Health and Wellbeing board](#) as part of their duty to "encourage integrated working" between health, care, police and other public services in order to improve wellbeing outcomes for Suffolk. The recommendations from the Suffolk Profile have also informed both the development of a Suffolk-wide Air Quality Strategy published in May 2023, and the Suffolk Community Engagement Plan.

The air quality engagement plan sets out the action Suffolk County Council (SCC), working with borough and district partners, will take to raise awareness of the health impacts of air quality in Suffolk. The aim is to increase awareness to enable individuals to make choices that protect both their health and the health of others from the harmful effects of pollution.

We will continue to consult with Suffolk County Council Public Health colleagues and be advised by them, and national guidance, on any relevant measures that will reduce exposure to air pollutants.

So what can I do?

The main source of air pollution in the district is traffic on our roads, but we also have emissions coming from domestic burning. We are currently meeting the air quality objectives set by the Government, but it will also require a concerted public effort with each person doing their bit to help to clean the air we breathe. The following are some simple ideas we can look at taking to help cut down the pollution we emit:

- Walk, cycle or scoot short trips instead of driving – it's a great way to reconnect with your local community, breathe cleaner air and get some exercise. Even one journey a week could make a big difference if everyone did it;
- Download the Go Jauntly mobile app for free, on either the [App Store](#) or the [Play Store](#) and enjoy over 70 miles of walking trails across East Suffolk. Walks are available in Aldeburgh, Beccles, Bungay, Framlingham, Felixstowe, Halesworth, Leiston, Lowestoft, Saxmundham, Southwold, Wickham Market and Woodbridge;
- Consider cycling some journeys - you can obtain advice on safe cycling routes, download Suffolk cycle maps and find general supportive information on cycling at [suffolkonboard](#).
- Work from home more often if your employer allows – challenge your workplace to make this easier for you;
- Use public transport such as the bus and the train where possible;
- Consider car sharing to reduce emissions and save money. See [Suffolkcarshare.com](#) website for details;
- If driving is essential, you could look at going electric – hire an electric car or taxi or test drive an electric vehicle to see what it's like. We are working to improve the electric vehicle charging network within the district which contributes to the wider charging network in Suffolk. Details of local electric charging points can be found by using [zap-map](#) and the site also gives general information about owning electric cars.
- If you drive - don't idle – turn off your engine when your vehicle will be stationary for 1 minute or more and it is safe to do so. One minute of car idling from the average car produces enough toxic emissions to fill 60 people's lungs;
- Practise Smarter Driving - every driver can do their bit to both help emission reduction and save money - information is available from the [Energy Saving Trust](#).

- Avoid burning household and garden waste – [take it to your nearest recycling centre](#). If you do choose to have a fire, only burn dry garden waste and avoid burning on days that already have high pollution levels, and
- Avoid using wood burning stoves and open fires where possible – if you do burn, limit your emissions indoors by only burning dry well-seasoned wood or smokeless fuel. More information is available on the [ESC 'wood burning in the home' page](#)

If you would like any further information on national air quality, including the latest news, air pollution forecasts, the latest measured levels and a summary, interactive monitoring, and general information about air pollution, consult the [UK Air website](#) provided by the Department for Environment, Food and Rural Affairs (Defra).

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Services Department of East Suffolk Council with the support of the following officers and departments:

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This ASR has been signed off by the Director of Public Health for Suffolk.

If you have any comments on this ASR please send them to Denise Lavender at:

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1 Local Air Quality Management

This report provides an overview of air quality in East Suffolk 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 East Suffolk Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained, and provide dates by which measures will be carried out.

A summary of AQMAs declared by East Suffolk Council can be found in Table 2.1. The table presents a description of the AQMA that is currently designated within East Suffolk. Appendix D: Map(s) of Monitoring Locations and AQMAs provides maps of the AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objective pertinent to the current AQMA designation is the NO₂ annual mean.

Stratford St Andrew AQMA

The AQMA Order No. 3, 2014 - Stratford St Andrew was declared in June 2014. The AQMA last saw exceedances of the annual mean NO₂ objective in 2016 (42.9 µg/m³). NO₂ concentrations fell each year thereafter for 4 years until 2020 and then have risen slightly in 2021 and 2022. Measurements in 2020 (27.1 µg/m³) were expected to be low due to the impacts of the Covid-19 lockdowns reducing traffic flows using this route. The maximum annual mean NO₂ concentration recorded in 2021 measured 28.3 µg/m³ and has risen slightly again to 29.3 µg/m³ in 2022.

The Defra helpdesk has advised that where NO₂ monitoring is completed using diffusion tubes (as within this AQMA), to account for the inherent uncertainty associated with the monitoring method it is recommended that revocation of an AQMA should be considered following three consecutive years of annual mean NO₂ concentrations being lower than 36µg/m³ (i.e. within 10% of the annual mean NO₂ objective).

The AQMA has achieved compliance with the annual mean NO₂ objective of 40 µg/m³ for 6 consecutive years, but has only been outside of 10% of the objective (<36 µg/m³) for three consecutive years. These three years include monitoring data within the years of

2020 and 2021, for which the Defra Helpdesk has advised that this data is likely to have been impacted by the COVID-19 pandemic. Section 3.54 of LAQM TG.22 states that *“It is not advisable for the revocation of an AQMA to be based solely upon compliance in a year not representative of long-term trends. For example, compliance being reached in 2020 may not be representative of long-term trends in pollutant concentrations due to the change in activity observed across the UK as a result of COVID-19 and associated lock down measures.”*

ESC is therefore not considering revocation of this AQMA currently.

The Action Plan for the AQMA received Defra approval in March 2018 and consists of two short term, priority action measures and six longer term aspirational measures. The main priority measure, for Suffolk County Council to move the 30/50mph change of speed limit sign further south out of the village was undertaken in December 2017. The second priority measure ‘Assessment of planning applications for impact on air quality’ has been implemented since 2018 and is on-going.

ESC is continuing to monitor in this location and the Steering Group have looked at the aspirational measures within the Action Plan. Taking forward any of the aspirational measures within the AQAP has been put on hold whilst awaiting the outcome of the Sizewell C Development Consent Order (DCO) application. The application includes a bypass of the A12 (including this AQMA) which should drastically improve NO₂ concentrations within the village including the AQMA. The DCO was consented by the Secretary of State on 20th July 2022 but has been subject to Judicial Review in the High Court (March 2023) regarding water supply. The outcome was received June 2023 and the Judicial Review has been dismissed. The Final Investment Decision from the Government for Sizewell C is still awaited. Pre-commencement works have begun.

If the DCO goes ahead following the Financial Investment Decision, construction traffic associated with the Sizewell C DCO Early Years works (to build the associated developments) will travel through the AQMA whilst the 2-villages bypass is being constructed. The 2-villages bypass build is estimated to take 18 months to 2 years from start of construction. Traffic from the EA1N and EA2 DCO developments may also overlap with this period. Although the conclusions of the cumulative Air Quality Assessments undertaken for the Sizewell C DCO application do not predict exceedance of the annual mean NO₂ objective during the Early Years phase of the development, we have decided it would be sensible to keep this AQMA in place until either the bypass is open or we have confirmed that concentrations are not rising within the AQMA due to construction traffic.

If the Sizewell C development does not go ahead, and the reduction in annual mean NO₂ concentration below 36µg/m³ continues within this AQMA, this would lead to revocation following 3 consecutive years of data (excluding 2020 and 2021) which would be obtained at the end of 2024.

The AQAP for this AQMA is now due for its 5 yearly update, however we are currently trying to increase staffing within the field of air quality at the Council as we are low on resource. The Final Investment Decision for SZC is fundamental to any action planning for this AQMA, and as such it is our intention at this time to continue to provide updates on the Sizewell C application, the monitoring results, and our plans regarding the AQMA each year through the ASR but not to update the AQAP.

Woodbridge AQMA – revoked

Following consistent reductions in NO₂ concentrations within the Woodbridge AQMA (AQMA Order No. 1 2006) since 2014, the decision was made to revoke this AQMA. In 2021 concentrations had been below the objective level for eight consecutive years, with the maximum annual mean for 2021 being 24.3 µg/m³, and concentrations at all monitoring locations in the AQMA had been outside of 10% of the NO₂ annual mean objective of 40 µg/m³ (<36 µg/m³) for five consecutive years. For further monitoring information see section 3 in this report.

A draft Detailed Assessment presenting evidence to support the revocation of the Woodbridge AQMA was produced, taken to the Steering Group and finalised. This report was presented in ESC 2021 ASR. Defra appraisal of the Detailed Assessment confirmed revocation should be undertaken. Public consultation on the Detailed Assessment findings and the intention of ESC to revoke the AQMA ran from May to July 2022.

The Council received 9 responses to the consultation, the results were collated and placed on the ESC website at [Woodbridge AQMA Revocation Consultation Responses](#). All respondents were replied to individually.

On 29th September 2022 the AQMA declared at the Woodbridge Junction was revoked following the findings of the revocation assessment and the results of the public consultation. A copy of the Revocation Order is attached in Appendix F.

All air quality monitoring within the AQMA and at this junction in Woodbridge has continued and annual mean NO₂ concentrations within the AQMA continue to fall. The

maximum annual mean NO₂ concentration recorded in the AQMA in 2022 was 22.9 µg/m³. Diffusion tube monitoring results can be seen in Section 3 of this document.

Air quality monitoring within the AQMA and at this junction will continue. All monitoring sites have been retained for a further year in 2023 whilst we await the Final Investment Decision outcome for the Sizewell C DCO, and development on the Ex-Council Offices site at Melton Hill close to the revoked AQMA.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Air Quality Management Area Order No. 3, 2014	Declared 18th June 2014	NO ₂ Annual Mean	The four properties situated within 1-5 Long Row, Main Road (A12), in Stratford St. Andrew	NO	42 µg/m ³	29.3 µg/m ³	6 years	AQAP for AQMA No. 3, March 2018	Visit the AQAP for AQMA No. 3- Stratford St. Andrew

- East Suffolk Council confirm the information on UK-Air regarding their AQMA is up to date.
- East Suffolk Council confirm that the current AQAP has been submitted to Defra.

2.2 Progress and Impact of Measures to address Air Quality in East Suffolk Council

Defra's appraisal of last year's ASR concluded that the report was well structured, detailed, and provides the information specified in the Guidance. The conclusions reached were accepted for all sources and pollutants. The following comments are designed to help inform future reports;

1. The Council have used the latest reporting template in production of their 2022 ASR. The report has also been approved by the Director of Public Health for Suffolk, which is welcomed.
Noted and repeated in this report.
2. It is noted that the Council's diffusion tube network has been reviewed, with one site being removed and several added, since the previous year. Details on these sites are included with justification for changes clearly discussed, which is welcomed.
Noted and repeated in this report.
3. The 'Valid Data Capture for Monitoring Period' column of Table A.4 is not incorrect, but it should match the 'Valid Data Capture for 2021' column if the tubes at each site were deployed throughout the whole calendar year. The 'Valid Data Capture for Monitoring Period' column has clearly been calculated correctly based on percentage of months available, whereas the Diffusion Tube Data Processing Tool provides a more detailed calculation based on deployment dates, which is why the value is slightly different to that manually calculated.
Relevant column in Table A.4 completed correctly in this report.
4. A discussion around trends in pollutant concentrations in relation to the relevant objectives, AQMAs, and East Suffolk overall is provided, which is welcomed. Clear trend graphs are included. In future reports it would be beneficial to include specific trend graphs for each AQMA's monitoring sites.
Trend graphs for Stratford St Andrew AQMA and revoked Woodbridge AQMA provided in this report.
5. Sufficient detail is included on the QA/QC procedures for the automatic analyser and the NO₂ diffusion tubes, however the Council have not discussed whether the diffusion tubes were deployed in line with the Defra calendar dates during 2021. This information should be included within all future reports.
This information has been included within this report in Appendix C.
6. It is stated within the report that "any erroneous data has been deleted", however in future reports the Council should include further detail if this is the case. For example,

note exactly where data has been excluded from annual averages, by using asterisks against monthly data in Table B.1, and following up with justification within the main text.

Noted and completed within this report.

7. Calculations for annualisation are outlined in detail within the report. Following sufficient review and discussion of both national and local factors, a local bias adjustment factor has been applied to the 2021 diffusion tube data within the Woodbridge area and the national factor used for all other sites. Data showing the choice of bias adjustment factors for previous years is included. The figure showing the national bias adjustment factor determination is welcomed, as is the table showing calculation of the local factor.

Noted and repeated in this report.

8. The diffusion tube bias adjustment factor has been taken from the 06/22 version of the national database. Version 09/22 was available at the time the 2022 ASR was submitted. The relevant factor changed slightly between the 06/22 version of the sheet (0.78) and the 09/22 version (0.77), but it is not considered that would significantly change the results presented within the report. However, as noted in the previous two appraisals, the Council should be aware of this in the future and ensure the correct version is used in all future reports.

The most recent version of the national database bias adjustment factor has been used and presented in this report.

9. All other appraisal comments from last year's ASR have been mentioned and addressed. This is welcomed and encouraged for future ASRs.

Noted.

10. It would be beneficial to indicate within Table B.1 which bias adjustment factor has been applied to which sites, for example by adding a footnote or asterisk in the 'Diffusion Tube ID' column next to each site the local factor has been applied to. Currently there is a footnote in the 'Annual Mean: Annualised and Bias Adjusted' column heading cell but this does not seem to reference anywhere.

Noted and completed within this report.

11. There have been no exceedances of the annual mean objective for NO₂ for at least the last five years within the Stratford St Andrew AQMA, however the Council have stated that they are not looking to revoke this AQMA currently. This is due to the construction traffic associated with Sizewell C and other developments that is expected to travel through this AQMA. The council's cautious approach is supported.

Noted

12. The current Air Quality Action Plan (AQAP) for the Stratford St Andrew AQMA was adopted in 2018 and updates on the measures have been detailed within the 2022 ASR. As set out in LAQM.PG(22) and TG(22), local authorities are expected to review and

update AQAPs at least every five years. It is therefore recommended that the Council add this to their priorities for 2023. The updated AQAP should be submitted to Defra for consultation once complete.

Information is provided in Section 2.1 of this report.

13. As supported within the appraisal of last year's ASR, the Council are now proceeding with revocation of the Woodbridge AQMA. It can be confirmed that the revocation is registered on the LAQM Portal and is awaiting update on UK AIR. The Council note that all air quality monitoring within the AQMA will continue for now, which is welcomed, but locations should be re-evaluated within future ASRs.

Woodbridge AQMA revoked. Monitoring locations are being evaluated each year going forward – discussion included in this report.

14. The report includes detailed discussion of the measures the Council are taking to address PM_{2.5}. Links are provided and discussed in regard to the Public Health Outcomes Framework and fraction of mortality attributable to PM_{2.5} emissions. Comparisons to the regional and national average are included. This is welcomed and is encouraged to be included in all future reports.

Noted and repeated in this report.

15. Detailed maps showing monitoring locations and AQMAs are presented. This is welcomed; however, it is suggested the keys are kept consistent between maps for ease of reading. For example, the symbol colours for single and triplicate tubes change between Figure D.32 and Figure D.38.

Consistency checked regarding keys to all maps in this report.

16. The level of public engagement the East Suffolk Council are undertaking, as well as their continual collaborative approach with the Suffolk Air Quality Management Group and other local stakeholders, is commended.

This will be continued going forward.

17. Overall, the report is detailed, thorough and satisfies the criteria of relevant standards. The Council should continue their good work.

East Suffolk 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. 54 measures are included within Table 2.2, with the type of measure and the progress East Suffolk 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 several of these measures can be found in their respective Action Plans for Woodbridge Junction AQAP, Stratford St Andrew AQAP and the East Suffolk Air Quality Strategy. Key completed measures are:

- Domestic Burning education campaign undertaken during Autumn/Winter 2022 to increase public awareness of the issues surrounding health.
- Adoption of the ESC Walking and Cycling Strategy in October 2022 which will help to identify gaps in the current infrastructure for future funding and includes suggested schemes for Woodbridge and Melton.
- Purchase of 3 hybrid pool vehicles at the ESC Port Health Office for work use alongside the fully electric vehicle in use there.
- Launch of the Go Jauntly app for the East Suffolk district which includes 70 miles of walking trails covering 12 towns. The app also includes the ability to find a walking route from any location and for any prescribed distance within the district.
- Completion of the funding spend and adoption of Quiet Lanes within East Suffolk, bringing the total to 199 Quiet Lanes covering 61 Parishes and 229.4km of road.
- Three of the SCC temporary trial cycling improvements in ESC have been made permanent - Lowestoft Rd in Beccles between East of Beccles and Ellough Rd; Hamilton Rd in Felixstowe; and High Road East & West in Felixstowe.
- Adoption of the East Suffolk Sustainable Construction Supplementary Planning Document in April 2022. Includes information about how sustainable construction methods and materials used in new development can reduce the construction and operational impact on our environment, wildlife, climate change and health and wellbeing. Provides guidance on how the operating efficiency of existing buildings can be improved through retrofitting. In turn this will lead to a reduction in emissions from buildings within the district.
- Completion and adoption of the ESC Clean Hydrogen Strategy which sets out how ESC can enable the emergence of the local hydrogen economy between 2023 and 2028. The vision is to establish East Suffolk as a nationally significant hub for the generation, distribution, innovation, and adoption of clean hydrogen as part of the collective ambition of the private and public sector to achieve net zero by 2030.

East Suffolk Council expects the following measures to be completed over the course of the next reporting year:

- Delivery of 6 new electric capable replacement Ae-Rubber Tyred Gantry cranes are planned in 2023 at the Port of Felixstowe. These will replace diesel RTGs and associated emissions will be reduced (ESC 1).
- A further domestic burning education campaign undertaken during Autumn/Winter to increase public awareness of the issues surrounding health, and provide advice on how to reduce emissions from any burning that does occur. It is hoped this will lead to emission reductions from this sector (ESC 11).
- Third vehicular crossing of Lake Lothing is on track to open Autumn 2023. Aims to reduce traffic congestion in Lowestoft, and therefore associated vehicle emissions, help regenerate the area and attract new investment for the local economy (ESC 21).
- Theatre company production on air quality to be completed at 10 further schools in ESC area. This includes provision of resources on air quality to the schools and NO₂ diffusion tube monitoring outside of each school to help inform the children (ESC 29).
- Update of the ESC Air Quality Strategy (ESC 35).
- Plug In Suffolk to install electric vehicle charging infrastructure as part of Phase 1 and identify sites for Phase 2 funding (ESC 53). Increasing the public electric vehicle infrastructure in the district will allow for more electric vehicles to be operated and associated emissions reduction to be achieved.

East Suffolk Council's priorities for the coming year are;

- Complete monitoring at the first SCS Cube site and find a new site. Install the second SCS Cube. It is important to obtain some baseline monitoring data for Particulate Matter within the East Suffolk district.
- Continue to work with the SCC Public Health team on their AQ Strategy and Public Engagement work – input from the Suffolk District and Borough Councils is vital for this work in order to ensure that our residents are represented.
- Continue work on the DCOs (EA1N, EA2, SZC) and agree the outline plans, such as; Outline Construction Traffic Management Plan, Outline Travel Plan, Outline Code of Construction Practice, Air Quality Management Plan, Construction Workforce Travel Plan, Outline Dust Management Plan, Dust Monitoring and

Mitigation Plans. This work is of great importance to ensure that impact on air quality is considered and emissions are minimised from these developments;

- Action a further winter solid fuel and wood burning education campaign. Defra advise that domestic solid fuel burning is a major contributor to fine particulate matter emissions both indoors and outdoors. Increasing public awareness of the issue is key to obtaining emission reduction.
- Continue work to reduce carbon emissions moving towards carbon neutral. There are many synergies between carbon reduction and air quality – reduction of one will aid the other in most cases and continued work in this area is important.
- Continue to work with stakeholders on the Mini Holland Scheme for Woodbridge and Active Travel scheme for Grange Road in Felixstowe. Both schemes will improve active travel in these areas and therefore reduce emissions associated with road transport.
- Updating the East Suffolk Air Quality Strategy. The Strategy helps provide important information to help to shape Council policies and provide emission reductions.
- Continued assessment of Planning applications for any impact on air quality within the district is an on-going and important role of the Environmental Protection team.

East Suffolk Council worked to implement these measures in partnership with the following stakeholders during 2022:

- Suffolk County Council Highways and Transport
- Suffolk County Council Public Health
- Neighbouring Suffolk Local Authorities - Ipswich Borough Council, West Suffolk Council and Babergh/Mid Suffolk District Council
- Port of Felixstowe
- Quiet Lanes Suffolk
- East Suffolk Greenprint Forum
- Suffolk Climate Change Partnership
- Lowestoft Town Council (Lowestoft Town Centre Masterplan)
- Woodbridge Town Council and Melton Parish Council (mini-Holland schemes)

The principal challenges and barriers to implementation that East Suffolk Council anticipates facing are;

- Resourcing to ensure that non-statutory provisions such as awareness raising and supporting Active Travel measures are given sufficient priority.
- Obtaining appropriate funding streams to complete some measures.

Progress on the following measures has been slower than expected due to:

- Local Transport Plan – slower than expected due to delayed provision of guidance from Department for Transport.
- Use of alternative fuels (for example hydrogen) due to emerging information on the technology involved.

Progress on a number of measures has been slower than expected due to reliance on external organisations which have competing priorities, and this will continue to be a local challenge.

East Suffolk Council anticipates that the measures stated above and in Table 2.2 will continue to achieve compliance in the Stratford St. Andrew AQMA.

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
WBG 3	Extension of restrictions to Thoroughfare (8am-6pm)	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2013	Originally 2014 - 2015, now unknown - not implemented as yet	Woodbridge Town Council and Suffolk County Council	Funding unknown	NO	Not Funded	Unknown	Completed	Air quality modelling shows max reduction of 0.1µg/m ³ in AQMA.	Reduction in peak queue lengths on Melton Hill.	Feasibility study undertaken. Negligible impact on AQMA NO ₂ conc. so no further work will be undertaken by ESC on this measure. Woodbridge Town Council wish to change the Traffic Regulation Order (TRO) for the Thoroughfare with stricter enforcement. 3 options consulted on. New TRO came into force 30/01/22 - Pedestrian Zone except for permit holders and for loading together with a no waiting zone. The Woodbridge AQMA was revoked in September 2022 and annual mean NO ₂ concentrations continue to fall at this location. This measure will therefore be removed from the table next year.	Town Council wish to alter and enforce the TRO but unable to do so until decriminalisation act in force. See Measure 4 below for further detail. Police provided ticket enforcement for 1 day and number of restricted vehicles entering from 10am-4pm reduced from 160 to 110.
WBG 15c	Travel Plan for the District Council Offices	Promoting Travel Alternatives	Workplace Travel Planning	2009	2016	ESC - Environmental Health	ESC	NO	Funded	< £10k	Completed	2% for 15a, b & c combined	Travel Plan adopted. Key actions completed	2016 Travel Plan adopted for Council Offices in Melton. Traffic survey of Council Officers undertaken to determine impact on AQMA. Travel survey indicates that fewer staff now driving through AQMA - only 15 staff who responded said they travel through the AQMA. 2 EV charge points installed and Electric Pool Vehicle available for staff use. 4 pool cycles available for staff use. The Woodbridge AQMA was revoked in September 2022 and annual mean NO ₂ concentrations continue to fall at this location. This measure will therefore be removed from the table next year.	Need to investigate how to determine effectiveness of Travel Plan year on year. ESC Electric Pool Vehicle use - 6,030 miles in 2021.
WBG 2	Install right hand turning lane at lights on Thoroughfare / Melton Hill arm of junction	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2010	Originally 2011-2012, now on hold - not implemented	SCC	Unknown	NO	Not Funded	Unknown	Aborted	Marginal benefit	Reduction in peak queue lengths	Preliminary design prepared - will move carriageway closer to Suffolk Place residential home - may increase emissions here therefore has not been progressed. Measure to be retained in updated Action Plan as 'aspirational'. The Woodbridge AQMA was revoked in September 2022 and annual mean NO ₂ concentrations continue to fall at this location. ESC 47 provides information on a mini Holland scheme to be undertaken for Woodbridge which may include alterations to this junction. This measure is not likely to be undertaken in the future and therefore will be removed from the table next year.	This measure was investigated and there appeared not to be enough room at the junction. SCC has advised that this should be left in the Action Plan as it could be looked at again in more detail if there are no other alternatives.

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
WBG 16	Promotion of cycling and walking in Woodbridge	Promoting Travel Alternatives	Promotion of cycling	2010	-	SCC	Unknown	NO	Partially Funded	£10k - 50k	Ongoing	Marginal benefit	None currently	Cycling and walking reviewed by County Council. New footpath on Pytches Road and 30mph lit sign to calm traffic and aid walking to school. 5 new cycle racks behind Café Nero and 3 on Market Hill. Sandy Lane cycle scheme implemented. SCC to investigate drawing up a list of possible schemes - no further progress. SCC have produced a new Cycle Map for Woodbridge. Measure will be kept in updated Action Plan as 'aspirational'. ESC Cycling and Walking Strategy adopted Autumn 2022. Includes suggested schemes for Woodbridge and Melton. As the Woodbridge AQMA was revoked Sept 2022 and this measure is also covered under ESC 27 (Cycling and Walking promotion) and ESC 47 (Mini Holland scheme for Woodbridge) it will be removed from the table next year.	Cycle racks and Sandy Lane cycle scheme can only have a positive impact to increase the number of people cycling and reduce the number of vehicles on the road. If we have a list of potential schemes any funding which can be accessed (via Planning system or other) can then be used. ESC Cycling and Walking Strategy when adopted does include schemes for Woodbridge and Melton but these do not have any current funding associated with them.
WBG 18	Raise air quality awareness	Public Information	Via the Internet	On-going	On-going	ESC	ESC	NO	Funded	< £10k	Implementation	n/a	Website promotion of air quality and reports. Web pages updated and promoted 2019, kept up to date thereafter. Social media campaigns surrounding Clean Air Day in 2019, 2020 and 2021.	Articles published in local magazines and papers. 2019 ESC website air quality pages redesigned. Enhanced use of Twitter (@EastSuffolk) and Facebook. Social media campaigns for 2019-2022 Clean Air Day. 2022 - Suffolk Air Quality Group, NHS and SCC Public Health produced a video released on Clean Air Day detailing some of the health implications of poor air quality. This AQMA was revoked Sept 2022 and this measure is undertaken for LAQM across a number of individual campaigns (for example ESC 13 – domestic burning campaign) each of which will be put into the measures table in their own right. This measure will be removed from the table next year.	-
STA 1	Move the location of the southern 30mph speed limit sign southwards	Traffic Management	Reduction of speed limits, 20mph zones	2017	2017	SCC	SCC	NO	Funded	< £10k	Completed	Reduction in concentration by up to 2 µg/m³	Reduction in NO ₂ concentrations in AQMA. Reduction in vehicle speed within AQMA. NO ₂ concentrations in AQMA show trend of overall reduction since 2017. Large drop in 2020 likely due to reduced traffic flows from Covid-19 lockdowns. Speeds have reduced Northbound in the AQMA but have increased slightly Southbound.	Speed limit panel agreed experimental TRO. Speed limit moved. Traffic speed survey pre and post move. Survey shows decrease in vehicle speeds Northbound but very slight increase in vehicle speeds Southbound at the site of the AQMA. NO ₂ concentrations show overall reduction - highest concentration in AQMA recorded 2015 = 44.4µg/m³ reduction to 2019 = 36µg/m³, then large drop seen 2020 = 27.1µg/m³ likely due to Covid-19 lockdowns reducing traffic on this road. Since 2020 concentrations have increased slightly each year but still show overall trend of reduction and well below objective 2021 = 28µg/m³, 2022 - 29.3µg/m³.	Air quality monitoring will now determine the effectiveness of this measure to reduce NO ₂ concentrations. NO ₂ concentrations within AQMA reduced 3-4µg/m³ in 2017 (prior to speed limit changes), 1µg/m³ in 2018 after the speed limit move, 2µg/m³ in 2019 and a further 8µg/m³ in 2021. Unable to use 2020 data due to reduced traffic flows related to lockdowns associated with Covid-19. Concentrations in 2022 have increased slightly from 28µg/m³ (2021) to 29.3µg/m³ as traffic on the roads recovers after the pandemic but still below 2019 level of 36µg/m³.

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
STA 2	Assessment of planning applications for impact on air quality	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Ongoing	Ongoing	ESC Environmental Health and Planning	ESC	NO	Funded	£10k - 50k	Implementation	No significant increases in concentrations due to new developments No new housing introduced into area of exceedance (AQMA) unless mitigation measures are in place to offset impacts. No new housing introduced to date.	Officers in Environmental Protection work with Planning to ensure that each application is appropriately assessed for air quality. 4 new planning application received for Stratford St Andrew Parish in 2021, commented on by Environmental Protection - not in or near or likely to impact on AQMA. 0 received in 2022.	The assessment process takes account of national guidance (including EPUK / IAQM) and local procedures.	
STA 3	Measure 1 together with a southbound permanent vehicle activated sign	Traffic Management	Reduction of speed limits, 20mph zones	Unknown - not yet implemented	Unknown - not yet implemented	SCC	unknown	NO	Not Funded	£10k - 50k	Pending	Reduction in concentration to below the objective	Reduction in NO ₂ concentrations in AQMA. Reduction in vehicle speed within AQMA.	Follow on from measure 1 if it was not successful. Steering Group discussions in 2020 surrounding use of a temporary VAS installed by SCC/ESC and run by the Parish Council. NO ₂ concentration 2019 = 36µg/m ³ 2021 = 28µg/m ³ 2022 = 29.3µg/m ³ - therefore concentrations are continuing to fall overall and this measure not required for implementation to date. We cannot use 2020 data for comparison due to reduced traffic flows from Covid-19.	Would need a site assessment and require capital funding (min £8,000) and revenue funding. Not yet approved.
STA 4	Measure 1 together with a northbound permanent vehicle activated sign	Traffic Management	Reduction of speed limits, 20mph zones	Unknown - not yet implemented	Unknown - not yet implemented	SCC	unknown	NO	Not Funded	£10k - 50k	Pending	Reduction in concentration to below the objective	Reduction in NO ₂ concentrations in AQMA. Reduction in vehicle speed within AQMA	Ideally this camera would be installed alongside measure 3 to smooth all traffic flow close to the AQMA if required. NO ₂ concentration 2019 = 36µg/m ³ 2021 = 28µg/m ³ and 2022 = 29.3µg/m ³ - therefore concentrations are continuing to fall overall and this measure not required for implementation to date. We cannot use 2020 data for comparison due to reduced traffic flows from Covid-19.	Would need a site assessment. Would require capital funding (min £8,000) and revenue funding. Not yet approved.
STA 5	Southbound speed camera just prior to cottages	Traffic Management	Reduction of speed limits, 20mph zones	Unknown - not yet implemented	Unknown - not yet implemented	SCC	unknown	NO	Not Funded	£10k - 50k	Pending	Reduction in concentration to below the objective	Reduction in NO ₂ concentrations in AQMA. Reduction in vehicle speed within AQMA.	Follow on from measure 1 if it was not successful and measures 3 and/or 4 were not undertaken. NO ₂ concentration 2019 = 36µg/m ³ 2021 = 28µg/m ³ 2022 = 29.3µg/m ³ - therefore concentrations are continuing to fall overall and this measure not required for implementation to date. We cannot use 2020 data for comparison due to reduced traffic flows from Covid-19.	Would need a site assessment to confirm adequate location and radar sightline. Need support from Suffolk Roadsafe Board and police. Would require capital funding of £40,000.
STA 6	Average speed camera system throughout Stratford St Andrew and Farnham	Traffic Management	Reduction of speed limits, 20mph zones	Unknown - not yet implemented	Unknown - not yet implemented	SCC	unknown	NO	Not Funded	£100k - £500k	Pending	Reduction in concentration to below the objective	Reduction in NO ₂ concentrations in AQMA. Reduction in vehicle speed within AQMA.	Consideration of option only. Aspirational measure due to high costs. Dependent on measure 1, 3, 4 and 5. NO ₂ concentration 2019 = 36µg/m ³ 2021 = 28µg/m ³ 2022 = 29.3µg/m ³ - therefore concentrations are continuing to fall overall and this measure unlikely to be required. We cannot use 2020 data for comparison due to reduced traffic flows from Covid-19.	Needs a site assessment to confirm adequate location and radar sightline, support from Suffolk Roadsafe Board and police. High capital funding cost of £250,000 and high revenue. Funding unlikely to be affordable.
STA 7	Possible A12 Stratford St Andrew bypass	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2022 / 2023	2026	EDF Energy if the DCO is successful	EDF Energy if the DCO is successful	NO	Not Funded	£1 million - £10 million	Planning	Reduction in concentration to below the objective	Reduction in NO ₂ concentrations in AQMA. Reduction in traffic flows within AQMA	A bid for Government funding (DfT) by Suffolk County Council for a 4 village bypass (Farnham, Stratford St. Andrew, Little Glemham and Marlesford) was not successful. DCO application for Sizewell C submitted with an integrated transport strategy. Two Village Bypass of Stratford St Andrew and Farnham (covering the AQMA) is included in the proposals and subject to obtaining consent should be available for use by peak construction. Anticipated start of Early Years construction early 2024. Public Examination finished October 2021. Consent granted 20 July 2022 by the Secretary of State for Business, Energy and Industrial Strategy. DCO subject to Judicial Review (JR) in the High Court at the end of March 2023 regarding water supply. Outcome received June 2023 and JR dismissed. Final Investment Decision from	Sizewell C DCO Integrated Transport Strategy includes up to 1,000 HGV on busiest day at peak, 650 HGV average day at peak. Early Years construction traffic will pass through AQMA at Stratford St Andrew until Two Villages Bypass is constructed and ready for use. Estimated construction period for bypass is 2 years. Current estimate is that Early Years construction works will start early 2024. Air Quality Assessments for all scenarios (including with EA1N and EA2 windfarm construction traffic) do not predict exceedance of the annual mean NO ₂ objective during the Early Years phase of the development

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
														the Government still awaited. Pre-commencement works have begun.	
STA 8	Mitigation of construction traffic emissions from Sizewell C and other Nationally Significant Infrastructure Projects (NSIPs) through the planning process (relevant to the AQMA at Stratford St Andrew)	Policy Guidance and Development Control	Low Emissions Strategy	2019 and ongoing	2022	ESC, currently working with EDF Energy & Scottish Power Renewables if the DCOs are successful	ESC staffing and EDF Energy / Scottish Power Renewables if the DCOs are successful	NO	Funded	Unknown	Planning	No significant increase in concentrations	Number of low emission vehicles in fleet. EA1N & EA2 applicant has committed to 70% of HGVs complying with Euro VI standards where the construction periods of this project, the other East Anglia project and the Sizewell C project overlap. SZC applicant has committed to all construction road vehicles complying with Euro VI standards bar a few exemptions = >92% of the fleet.	Preliminary discussions on likely impacts at pre-application stage. Development Consent Order (DCO) applications submitted for Sizewell C (SZC), EA1N and EA2 Offshore Windfarms. DCO for SZC includes proposal for construction of 2-village bypass on the A12, bypassing both Stratford St Andrew (including the AQMA) and Farnham. Additional monitoring requirements and mitigation particularly for SZC Early Years construction before the bypass discussed as part of the DCO. Discussions on use of latest EURO classifications for the construction fleet for both applications. Secretary of State granted consent for EA1N and EA2 31 March 2022, this DCO was subject to judicial review. Secretary of State granted consent for SZC 20 July 2022, this DCO is subject to Judicial Review in the High Court at the end of March 2023, which we are currently awaiting the outcome of.	DCO application for Sizewell C submitted with an integrated transport strategy which includes up to 1,000 HGV on busiest day at peak, 650 HGV average day at peak, a Two Village Bypass of Stratford St Andrew and Farnham is included in their proposals and subject to obtaining consent should be available for use by peak construction. Anticipated construction 2022/2023. Modelling of the potential impact on the AQMA has been conducted for both SZC and EA1N & EA2 including cumulative impacts and has been scrutinised, discussed and accepted by ESC. EA1N and EA2 consent includes Outline Construction Traffic Management Plan, Outline Travel Plan, Outline Code of Construction Practice, Air Quality Management Plan. SZC have committed to 2 off-site park and rides, freight management facility, increased use of rail and sea, accommodation campus together with Construction Workforce Travel Plan, Construction Traffic Management Plan, Outline Dust Management Plan (DMP) and Code of Construction Practice (CoCP).
ESC1	Evaluate and implement efficient power technologies (e.g. hybrid-electric) for cargo handling equipment (rubber tyre gantry (RTG) cranes) in the Port of Felixstowe	Promoting Low Emission Plant	Other measure for low emission fuels for stationary and mobile sources	2010	Ongoing	Port of Felixstowe	Port of Felixstowe	NO	Funded	> £10 million	Implementation	Unknown	Number of RTG Cranes using improved efficiency power source. Number of blocks converted to electric. 58 e-RTGs (electrified RTGs) 38 blocks converted to electric.	58 of the total 90 RTG's in use on the Port are electric capable (50 e-RTGs and 8 Ae-RTGs). Ae-RTGs are remote controlled. The Port plan to replace the remaining 32 diesel units over the coming years. 17 electric capable replacement Ae-RTGs are planned to replace diesel RTGs - current timetable is 6 in 2023, 5 in 2024 and 6 in 2025. Additional container zone electrification is now planned to coincide with the introduction of the 17 new Ae-RTGs over the next 3 year period on Landguard Terminal (Berths 8 & 9). Technical specifications for the conversion of a further 20 blocks serving Berths 8&9 prepared with works scheduled late 2022 running for a 2 year period. Work is on track. The Port successfully commissioned an all-electric RTG - does not require use of a diesel engine to transfer it between blocks, uses lithium ion battery - therefore emissions free. Technical specification was completed for replacing RTGs with these but this is no longer being pursued. Preferred option is electrification of container blocks with conductor rail system.	To mitigate the increase in electricity demand the Port has been progressing energy efficiency projects and renewable energy generation (Solar PV). 2022 - generated 489MWh of energy from solar power. Quay crane lighting upgrade project fitting LED to 12 cranes - will reduce energy usage.

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ESC2	Adopt NOx abatement technologies on Internal Movement Vehicles (IMVs) in the Port	Promoting Low Emission Transport	Company Vehicle Procurement -Prioritising uptake of low emission vehicles	2010	Ongoing	Port of Felixstowe	Port of Felixstowe	NO	Funded	> £10 million	Implementation	Unknown	Number of IMVs replaced. Reduction in NO ₂ concentrations at the Port. 135 of the 260 units replaced. Overall trend of reduction in NO ₂ concentrations	83 IMVs replaced 2011-2016. 52 IMVs replaced 2017/2018. 17 replaced 2019. Total of 135 of the 260 units replaced 2020. 2 x new internal tractors for roll-on roll-off operations in 2018. IMVs are replaced on a 15 year cycle. 24 new electric IMVs planned (subject to delivery of the necessary electrical infrastructure) 2023 and a further 24 in 2024. 2 electric IMVs delivered 2022 to enable on-site training. Charging equipment has been installed and ordered unit remain on schedule. Current plan - new IMVs will be electric prior to transferring to alternative fuel useage (Hydrogen). 2 new battery powered autonomous trucks ordered 2022 for internal container movement. Purchase of additional trucks not yet decided. Reduction in NO ₂ over time - certainly between 2018 and 2022. 2 sites show very slight increases between 2021-2022 but still well within the objective. Monitoring results from the PoF for 2019 and 2020 could not be used.	All new IMVs utilise Adblue as part of exhaust gas recirculation technology and currently comply to Euro VI emissions standards instead of Euro IIIa. The newer IMVs are fitted with start/stop engine technology and the latest emission compliant Volvo engines. Expected to deliver a 10% reduction in emissions compared with a conventional tractor unit. Any future IMVs (post 2020) will be electric. SO ₂ monitoring information obtained from PoF 2021 - results routinely below limit of detection across 6 sampling locations - low levels attributed to adoption of low sulphur fuel/ use of scrubber systems by visiting vessels in compliance with the North Sea Emission Control Area requirements. Not related to IMVs so SO ₂ concentration removed from the KPI from end of 2022. In 2021, 2 x air quality sensors purchased (South Coast Science Praxis units). Installed 2022 at Dock Gate 2 and Trinity Quay. Data sets will be available later in 2023 and will be discussed in the next ASR.
ESC3	Increased use of rail transport for movement of goods at the Port of Felixstowe	Freight and Delivery Management	Other	2018	Ongoing	Port of Felixstowe	Port of Felixstowe	NO	Funded	Unknown	Implementation	unknown	Number of daily freight services. Percentage rail modal share. 33 daily freight services 2019/20. 37 daily freight services 2021 and 2022. 28% modal share 2021 and 2022.	33 daily freight services from the Port 2019/20. This fell slightly in 2020 due to impact of Covid-19 pandemic but is recovering and has increased to 37 as of May 2021 and remains as this in 2022. Made possible due to demand for additional services and a significant reduction in the demand for passenger services due to the Covid-19 pandemic which has opened up opportunities. The Port continues to maximise length of each rail service. 28% rail modal share 2018 and 2019. This again fell slightly in 2020 due to Covid-19 pandemic but is recovering again and back to 28% in 2021 and 2022.	Modal shift to rail is a top priority for the Port and senior managers liaise with Government frequently. The branch line improvement (opening of the Trimley Loop) has increased the theoretical freight capacity of the Branch Line to 45-47 daily paths, however there is a bottleneck at Ely. 2021 - the Port were advised that there were still a few freight service path opportunities available on the Felixstowe-Nuneaton corridor despite the lack of progress at Ely and elsewhere.
ESC7	Assessment of planning applications for impact on air quality	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Ongoing	Ongoing	ESC Environmental Health and Planning	ESC Environmental Health and Planning	NO	Funded	£50k - £100k	Implementation	Unknown	Number of Planning applications considered. Planning applications processed by Environmental Protection Team; 2018=1,282 2019=1,075 2020=1,026 2021=1,024 2022=1,010	Officers in Environmental Protection work with Planning to ensure that each relevant application is appropriately assessed for air quality impacts and responses sent to Planning where necessary. Planning applications processed - 2019 onwards the figures do not include pre-application advice.	The assessment process takes account of national guidance (including EPUK / IAQM) and local procedures. The Environmental Protection Team also deal with many requests for pre-application advice from applicants.

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ESC8	Air quality included in the East Suffolk Council - Suffolk Coastal Local Plan (Core Strategy & Development Management Policies, Site Allocations and Area Specific Policies and Felixstowe Peninsula Area Action Plan)	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2013	2020	ESC Planning Department and Environmental Protection Team	ESC	NO	Funded	Unknown	Completed	Unknown	Adoption of Local Plan documents. Air quality considered in relevant planning applications. East Suffolk Council - Suffolk Coastal Local Plan covering period 2018-2036 adopted September 2020. Planning applications processed by Environmental Protection Team; 2018=1,282 2019=1,075 2020=1,026 2021=1,024 2022=1,010	Existing documents adopted and published in 2013 and 2017. Previous Site Allocations and Area Specific Policies document completed with air quality recommendations included. The East Suffolk Council - Suffolk Coastal Local Plan to cover 2018-2036 was adopted September 2020.	To ensure that developments are appropriate and the air quality impacts are adequately assessed. 9,756 homes expected to be delivered between 2018-2036. Annual monitoring information available on website www.eastsuffolk.gov.uk/planning/planning-policy-and-local-plans/suffolk-coastal-local-plan/monitoring-information/ Air quality is a key objective within the Sustainability appraisal framework against which all policies and site allocations have been assessed. Policy SCLP7.1: Sustainable Transport, SCLP7.2: Parking Proposals and Standards includes electric charge points and encourages park & ride sites, SCLP9.1: Low Carbon and Renewable Energy and SCLP9.2: Sustainable Construction, and Policy SCLP10.3: Environmental Quality.
ESC9	Promotion of travel alternatives in the Local Plan	Promoting Travel Alternatives	Promotion of walking	2013	2020	ESC Planning Department and Environmental Protection Team	ESC	NO	Funded	Unknown	Completed	Unknown	Sustainable travel included in the adopted Local Plan documents	Existing documents adopted and published in 2013 and 2017. The East Suffolk Council - Suffolk Coastal Local Plan to cover 2018-2036 was adopted September 2020.	Policy SCLP7.1: Sustainable Transport encourages people to use non-car modes of transport. Supports developments that integrate into pedestrian, cycle and public transport networks
ESC11	Provision of information to the Public and commerce on reducing emissions from solid fuel and wood burning, including Ready to Burn campaign	Public Information	Via the Internet	2018	Ongoing	ESC	ESC	NO	Funded	< £10k	Implementation	Unknown	Information available on East Suffolk website - completed. Information disseminated to the Public and commercial sectors. Information campaign undertaken Winter 2018, Winter 2021 and Winter 2022	Council website page on biomass and wood burning added and publicised. Article in Greenprint Forum newsletter. Information being sent out to any burning complaints. Information sent to 300 businesses in Suffolk, all Parish Councils, highlighted to all air quality Consultees during ASR 2017 Consultation, leaflets provided at Business drop-in events. Wood burning information promoted during Clean Air day 2019 and 2020 and updated on website. Information campaign undertaken Winter 2018, 2021 and 2022.	
ESC12	Greener travel information available on the SCC website	Promoting Travel Alternatives	Personalised Travel Planning	2017	2018	SCC	SCC	NO	Funded	Unknown	Completed	Unknown	Number of visitors to the website. Historic website visitor information in next column. 2022 data = 250-500 monthly users and 600-900 page views per month of The Way To Go Suffolk website	SCC website updated for greener travel and travel planning. 2018 - 5134 visitors to Local Links developer travel plans and 1056 to SCC travel plans websites. April 2019 'Local Links' pages moved to 'Suffolk on Board' pages which also includes buses and other forms of public transport. 2021 - SCC Travel Plan pages (Local Links) have now merged with Suffolk Spokes and moved onto www.thewaytogosuffolk.org.uk . This website supports businesses with travel plans and acts as a signpost to other sources of information such as Suffolk On Board and SCC. 2019 (Apr-Dec) - 877,825 visits to Suffolk on Board (137,080 were related to school travel). 1,175 visits to SCC Travel Plan pages in 2019. In 2020 there were 100,000 users and 470,000 page views of Suffolk onboard (150,000 related to school travel). There were 1,677 users of the SCC Travel Plan pages and 3,059 page views. Unable to obtain 2021 data.	http://www.suffolkonboard.com - information on greener travel including journey planning, business support and car sharing. Interesting trend seen from Mar to Sept 2020 (from start of lockdown to the present) showing consistently higher visits to cycling pages of Suffolk on Board. No data could be obtained in 2021 and in 2022 could only get data for The Way To Go Suffolk website.

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ESC13	Promotion of travel alternatives for staff at ESC	Promoting Travel Alternatives	Promotion of cycling	2013	Ongoing	ESC	ESC	NO	Funded	Unknown	Implementation	Unknown	Tax free bike 'Cycle 2 Work scheme' bike purchases: 2018/19 - 14 bikes 2019/20 - 4 bikes 2020/21 - 0 bikes 2021/22 - 8 bikes 2022/23 - 5 bikes	Council promotes cycling and walking as a positive alternative form of travel for its staff. Tax free bike 'Cycle 2 Work scheme' started 2013. 19 bikes purchased Oct 16 - Apr 18. From end 2021 scheme now in place for applications all year round where previously it was quarterly windows. Business mileage rate for cycling. Emergency Ride Home scheme. Travel Survey in 2017 indicated increased number of staff who cycle to work. 4 pool bikes provided for use and promoted.	Riduna Park building has: covered and secure cycle parking/racks for 40 bikes, shower/changing/ drying facilities and lockers. Due to Covid-19 restrictions, pool bikes not used during 2020 but back in use for Summer 2021.
ESC14	Fleet emissions improvements for freight haulage companies based in Felixstowe	Vehicle Fleet Efficiency	Other	2018 to draw up list. 2020 to contact hauliers	2025	ESC and National Highways	ESC and National Highways Grant funding if approved	NO	Partially Funded	£100k - £500k	Aborted	Unknown	Number of haulage firms engaged in the process	Investigated potential emission improvements (driver training, fleet replacement, alternative technologies - low rolling-resistance tyres, telematics, or improved aerodynamics). List of haulage companies around the Port drawn up with contact details. Survey of hauliers undertaken Feb 2020 to ascertain fleet make up and any emission reduction programmes in place. Received 9 responses. Looking at ECO Stars scheme as a result of the survey. Grant application for National Highways funding submitted 31st March 2020. 2020/21 - National Highways requested additional information to assess the Grant funding application and information sent. Chased response from National Highways since this time. July 2022 contact and discussions established to determine whether grant application is now possible. Already midway through grant period - project could not be completed on time and so not taken further. This measure will be removed from the table next year and reinstated if it becomes viable again in the future.	Low response rate from hauliers survey. Responses obtained showed interest for sign up to ECO Stars scheme. Applied for Highways England Air Quality fund in conjunction with ECO Stars scheme 31st March 2020. No response from Highways England on grant application. On hold until disruption from Covid-19 pandemic has eased and final response from Highways England obtained. Discussions with National Highways resumed July 2022, but we are already half way through the funding program timescale (completes April 2025) so not sure if project can be delivered in time. Discussions on-going and final decision will be made before end 2022.
ESC15	Installation of 11 Rapid Electric Vehicle Charging Units for Public use in Suffolk, Norfolk and Essex – planned site within Felixstowe	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2018	2019	Highways England. Babergh and Mid Suffolk DC lead for all points on behalf of all relevant local authorities. ESC involvement with the tender	Highways England	NO	Funded	Unknown	Completed	Unknown	For the Felixstowe charger within ESC; kWh of charge used, estimate of EV miles driven using this charge (2.93 miles per kWh per mile on average) 1/5/19-18/4/20 = 1,662.82 kWh = 4,872 EV miles. 2022/23 = 51,165 kWh = 149,913 miles	Rapid chargers installed by Highways England in Ipswich, UES Norwich, Bury St Edmunds, Felixstowe and Great Yarmouth. Rapid charger within Felixstowe in ESC installed and live from April 2019. 2022/23 = 1,878 sessions = 51,165 kWh used = 149,913 miles	Babergh and Mid Suffolk District Councils are leading a Highways England funded project of seven local authorities, in Suffolk, Norfolk and Essex, working together to install 11 rapid charging points along strategic roads in East Anglia. The project supports the Government initiatives to increase the number of electric vehicles and end the sale of conventional petrol and diesel cars in the UK by 2040.

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ESC19	SCC adoption of national award scheme for School Travel Plans	Promoting Travel Alternatives	School Travel Plans	2017	2019	SCC	SCC	NO	Funded	Unknown	Completed	Unknown	Adoption of scheme - completed. Number of schools signed up to scheme in ESC and number who have received accreditation in ESC June 2019 - 12 schools, 0 accredited 2020 - 14 schools, 2 Bronze accreditations 2021 - 16 schools, 2 Bronze accreditations 2022 - 11 schools signed up	Modeshift STARS scheme adopted by SCC. 12 schools formally signed up within ESC in June 2019, increased to 14 in September 2020 and 16 in June 2021. 2 schools in ESC have gained Bronze accreditation and 4 primary schools have been working on their travel plans in 2019/20 - these 4 schools are located in Oulton Broad, Carlton Colville, Lowestoft and Martlesham. 2022 - new process to obtain information on the Modeshift Stars schools - there are now 11 schools on the list within ESC.	Free to use national award scheme for schools who have demonstrated excellence in supporting cycling, walking, and other forms of sustainable travel. Helps schools to write and monitor their travel plans https://www.suffolk.gov.uk/planning-waste-and-environment/planning-and-development-advice/travel-plans/school-travel-plans/ 2022 - new way to obtain information re Modeshift Stars through SCC list only 11 schools now signed up in ESC - no way to find out what happened regarding the other 5 that were signed up previously. No longer able to obtain information through Modeshift Stars regarding accreditation status.
ESC20	20 mph speed limit in Woodbridge	Traffic Management	Reduction of speed limits, 20mph zones	2016	2024	Woodbridge Town Council and Suffolk County Council (SCC)	Woodbridge Town Council and SCC with possible funding bid for CIL monies	NO	Not Funded	Unknown	Planning	Marginal benefit in terms of emission reductions due to potential through traffic reduction	Reduction in measured average speed along routes	Proposal taken by Woodbridge Town Council to SCC Speed Limit Panel. Panel agreed the proposal for 20mph zones/limits on the central B1438 and historic core roads in Woodbridge. This will include the AQMA. Proposal confirming physical measures required as it must be self-enforcing. Funding being sought to take this forward. Once a scheme is in known with costings can look for funding avenues - one possibility is CIL. This measure will link with the new Mini Holland Scheme for Woodbridge which has recently obtained funding - see ESC 50 for further information.	Costings of physical works unknown. Potential success of any funding bid unknown. Need to ensure that proposals do not create any air quality concerns at locations along the route.
ESC21	Third vehicular crossing of Lake Lothing - Gull Wing Lowestoft	Transport Planning and Infrastructure	Other	2010	2023	SCC	SCC	NO	Funded	> £10 million	Implementation	Unknown	Lake Lothing Third Crossing open. Reduction in NO ₂ concentrations in Lowestoft Town Centre (Bascule Bridge) and Oulton Broad	2020, the Secretary of State for Transport granted development consent for the Lake Lothing Third Crossing in Lowestoft and the Order came in to force. Construction delayed slightly and began April 2021. Gull Wing crossing on track to open Autumn 2023. Aims to reduce traffic congestion in Lowestoft, help regenerate the area and attract new investment for the local economy.	Lengthy timescale. Approximate costs in excess of £80million. New crossing could result in a large reduction of traffic congestion in Oulton Broad and the Lowestoft Town Centre.
ESC25	East Suffolk Council - Waveney Local Plan (March 2019) covering the former Waveney Local Planning Authority area, excluding the Broads Authority area.	Policy Guidance and Development Control	Other policy	2019	2019	ESC	ESC	NO	Funded	Unknown	Completed	Unknown	Adoption of Local Plan documents. Air quality considered in relevant planning applications. Policies to promote alternative forms of travel. Planning applications processed by Environmental Protection Team; 2018=1,282 2019=1,075 2020=1,026 2021=1,024 2022=1,010	East Suffolk Council - Waveney Local Plan adopted March 2019. Covers period 2014-2036. Policy WLP8.21: Sustainable Transport also supports facilities for charging plug-in and ultra-low emission vehicles, WLP8.27: Renewable and low carbon energy and WLP8.28: Sustainable Construction. Planning applications processed - 2019 onwards the figures do not include pre-application advice.	Large and ambitious development plans in the former Waveney area require careful management. 9,235 homes expected to be delivered 2014-2036. Annual monitoring information available on website www.eastsuffolk.gov.uk/planning/planning-policy-and-local-plans/suffolk-coastal-local-plan/monitoring-information/

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ESC27	East Suffolk Council Walking and Cycling Strategy	Promoting Travel Alternatives	Promotion of cycling	2016	2022	ESC	ESC	NO	Funded	Unknown	Completed	Unknown	Strategy adopted - Waveney Strategy completed. ESC Strategy draft being drawn up following public consultation. This will supersede the Waveney Strategy. Final consultation undertaken Autumn 2021. Strategy adopted October 2022	Waveney DC Cycling Strategy formally adopted 2016, final draft published 2018. ESC extending this document across the whole of the Council to also include walking infrastructure and this will then supersede the Waveney Cycling Strategy. Initial public consultation October 2020 to look at where the gaps are. Draft Strategy produced Autumn 2021. Walking and Cycling Strategy approved 4th October 2022.	This measure originally related only to the Waveney DC Cycling Strategy which was adopted in 2016, measure now altered to ESC Cycling and Walking Strategy. Infrastructure gaps to be identified but funding opportunities may be problematic. We have created a cycle / foot route behind Morrisons in Felixstowe, from Grange Farm Rd to Grange Rd, this was completed December 2019. SCC will be undertaking further work to improve active travel on Grange Road - see ESC 51. Active Travel funding also obtained by SCC for Woodbridge - see ESC 50
ESC 29	Air quality information/ education activities for primary schools within ESC including anti-idling events	Public Information	Via other mechanisms	2019	2023	ESC, SCC	ESC, SCC	NO	Funded	< £10k	Implementation	Unknown	Number of events	A temporary officer was employed and undertook 7 anti-idling events and 2 Air Quality Ambassador events at the Council Offices involving 8 schools in the lead up to Clean Air Day 2019. Graduate intern employed 2019/20, undertook an assembly on air pollution alongside an anti-idling event at an additional 8 schools in ESC. Could not physically go into schools during and just after the Covid-19 restrictions in 2020/21. Nov 2021 - theatre production company (funded by SCC) undertook online (due to covid) air quality performances at 9 schools in ESC and provided school resource packs - 'Abbie Ayre and the Shed of Science'. Clean Air Day schools resources promoted to all Suffolk schools by County Council June 2022. 10 more theatre productions in ESC schools have been undertaken 2023 and will be reported in the next ASR.	Graduate intern employed for 8 months to undertake this project. Graduate has now finished - unsure how this will be resourced going forward. Unable to continue these events during the Covid-19 pandemic. Events have begun to re-start in person in 2022.
ESC 30	Promotion of cycling	Promoting Travel Alternatives	Promotion of cycling	Historic	2021	ESC and SCC	ESC and SCC	NO	Funded	Unknown	Implementation	Reduced vehicle emissions	Production of Cycling and Walking Strategy for ESC. Adopted Autumn 2022 - (see ESC27). Number of bikeability lessons delivered in schools within ESC. SCC has delivered 106 Bikeability courses within ESC September 2018 - July 19 (1,272 children). 98 Bikeability courses 2021 (1,176 children). 101 courses 2022 (1,212 children).	ESC webpage on cycling in the district - https://www.eastsuffolk.gov.uk/leisure/cycling/ SCC webpages on cycling; https://www.suffolkonboard.com/cycle/provides-free-cycle-maps-for-areas-in-suffolk and https://www.suffolk.gov.uk/children-families-and-learning/schools/walking-and-cycling-to-school/ provides information about cycling to school including bikeability. Park & Cycle from Martlesham Park & Ride to Ipswich Town Centre introduced - commuters can park for free and cycle into Ipswich.	ESC website includes information on cycling in the district including information on the current Waveney Cycling Strategy and production of the new Cycling and Walking Strategy for ESC. SCC webpages provide free cycle maps for Beccles, Felixstowe, Halesworth, Lowestoft and Woodbridge together with information on cycling including the SCC Cycling Strategy. Difficult to gain access to schools in 2020 to run bikeability courses during Covid-19 pandemic. Bikeability courses re-started in 2021.

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ESC 31	Electric charging points in Norse depots	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2019	2020	ESC and Norse	ESC and Norse	NO	Funded	Unknown	Completed	Reduced vehicle emissions	Provision of charge points. Provision of electric vehicles. Annual mileage driven by electric vehicles. 2020 - total of 20 charge points supporting 8 EVs. Mileage undertaken listed in next column	12 EV charge points installed at Suffolk Coastal Norse Depot Ufford and 8 EV charge point electric charge points installed at ESC and Waveney Norse depot Lowestoft. 7 electric vehicles based at Ufford and 1 at Lowestoft. Mileage undertaken by EVs; 2020/21 = 58,238 miles 2021/22 = 76,369 miles 2022/23 = 65,079 miles	-
ESC 32	Norse consultant assessed alternative fuels	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	2022	Norse	ESC and Norse	NO	Funded	Unknown	Planning	Reduced vehicle emissions	Number of vehicles using HVO 2022 - 50 refuse collection vehicles and 8 Housing fleet vehicles	Ambition to migrate all of the existing Council fleet (including those used by our partners) to a low carbon alternative. Hydrogen technology will be investigated in the medium term (5+ years) with an interim solution to be chosen to take forward in 2021/22. Interim solution chosen is Hydrotreated Vegetable Oil (HVO) with 50 out of 51 Refuse Collection Vehicles now using it and some of the Housing Fleet (see ESC 34).	Hydrogen technology is not at the stage where it would be a feasible alternative at the current time for the Council's fleet so an interim solution is being looked at. Hydrogen technology will continue to be looked at in the medium term (5+ years).
ESC 33	The Lowestoft Town Centre Masterplan - improvements to cycling, walking and public transport	Transport Planning and Infrastructure	Other	2020	Unknown	ESC, Lowestoft Town Council, Lowestoft Vision, Suffolk County Council and Suffolk Chamber of Commerce	ESC	NO	Funded	Unknown	Planning	Unknown	n/a	Masterplan has moved into the Feasibility Stage and a bid for the Town Funds Money is being developed. Lowestoft Town Investment Plan 2021-31 developed with more detail on work planned and funding including that secured, requested from the Towns Fund and unfunded as yet. Gateway Improvements to Lowestoft Port and the Station Quarter and Cultural Quarter improvements are all planned to improved accessibility and connectivity for walking and cycling across the Town. Masterplan is also looking at a new public transport link connecting central Lowestoft along the north-south access - one idea is an electric tram system.	The aim of this masterplan is to decrease traffic and emissions which hopes to encourage more cycling and pedestrian opportunities. This ideally will balance the different modes of travel through Station Square. All work in the Masterplan will need reviewing after the opening of the Gull Wing bridge late 2023 as this should help ease congestion within the Town. The Masterplan links with the Lowestoft transport and infrastructure projects which aim to deliver improvements around Lowestoft including a key theme of sustainable travel and investment in pedestrian, cycle and bus infrastructure.
ESC 34	Fleet Migration for council and associated partners	Promoting Low Emission Transport	Company Vehicle Procurement -Prioritising uptake of low emission vehicles	2020	2021	ESC and Norse	ESC and Norse	NO	Funded	Unknown	Planning	Reduced vehicle emissions	Number of vehicles using HVO 2022 - 50 refuse collection vehicles and 8 Housing fleet vehicles	Ambition to migrate all of the existing Council fleet (including those used by our partners) to a low carbon alternative. Fleet Migration Plan developed 2021/22 investigating use of Hydrotreated Vegetable Oil Diesel (HVO). July 2022 – Hired in 14 Refuse Collection Vehicles (RCV) to replace vehicles incompatible with HVO, - 50 out of 51 RCVs now using HVO. Housing fleet - 8 out of 78 vehicles using HVO.	-
ESC 35	ESC Air Quality Strategy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	2021	ESC	ESC	NO	Funded	< £10k	Completed	n/a	Adoption of Strategy. Strategy approved by cabinet June 2021 and adopted.	Strategy drafted and approved by ESC Cabinet June 2021. 1 year post created and filled for graduate to work on update information due 2023.	Final draft produced end of 2020. Formal approval and adoption by Full Council June 2021. Document will be reviewed and updated bi-annually.
ESC 36	Port of Felixstowe Air Quality Strategy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	2020	Port of Felixstowe	Port of Felixstowe	NO	Funded	Unknown	Completed	n/a	Adoption of Strategy. Update provided every 3 years.	In December 2019 a Statement of Intent was produced followed by the Port Air Quality Strategy in 2020. Scheduled review of Strategy will now commence 2023 to accommodate inclusion of the Port's decarbonisation plan.	Strategy includes a number of measures to reduce emissions from the Port. The most relevant are included in measures above - ESC 1, 2 and 3. 2023 update will reflect air quality synergies from Hutchinson Ports decarbonisation strategy.

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ESC 37	Quiet Lanes within ESC	Promoting Travel Alternatives	Other	2021	2023	Quiet Lanes Suffolk, East Suffolk Greenprint Forum, ESC, SCC, Babergh District Council, Mid Suffolk District Council, Voluntary contributions from some participating parish councils	ESC, East Suffolk Greenprint Forum, SCC 2020 Fund, Babergh District Council, Mid Suffolk District Council, Voluntary contributions from some participating parish councils	NO	Funded	£100k - £500k	Completed	Reduced vehicle emissions	Number of quiet lanes designated in ESC. Number of parishes with designations. March 2022 - 129 Quiet Lanes covering 36 parishes. March 2023 - 199 Quiet Lanes covering 61 parishes in ESC	13 Quiet Lanes were designated in 2013/14 spanning 7 parishes. March 2021 - 7 more Quiet Lanes designated in 2 more parishes. Up to 140 new designations applied for in ESC for 'Phase 2' later in 2021. March 2022 - 36 parishes within ESC with designated Quiet Lanes, comprising 129 Lanes. March 2023 project now complete and all funding spent. Total of 199 Quiet Lanes covering 61 Parishes and 229.4km of road in ESC.	Aim is to encourage more people to feel safe using their local rural roads by non-motorised means instead of their cars. A Quiet Lane is a nationally recognised designation of single track road (i.e. no line markings), typically with less than 1,000 vehicle use per day. Project also entails a high-profile awareness and behaviour change communications campaign aimed at drivers on the message of "Expect and Respect".
ESC 38	Katch a Lift - 1 year trial demand responsive Electric taxi service between Framlingham, Wickham Market and Campsea Ashe train station	Alternatives to private vehicle use	Other	2020	2022	SCC (suffolkonboard), CarsSmart ESC, Framlingham Town Council, The East Suffolk Lines, Community Rail Partnership	SCC, ESC Community Partnership & the Community Rail Partnership	NO	Funded	£50k - £100k	Completed	Reduced vehicle emissions	Viability of the service	'Katch a Lift' is a 1 year trial demand responsive taxi service using an electric vehicle running between Framlingham, Wickham Market and Campsea Ashe train station. It will be subsidised with a view to confirming its viability which is possible with multi-occupancy. Scheme started May 2021 but extended to Dec 2022 due to Covid-19 impacts. Scheme completed and taken over by ESC for a further 1 year trial but as a demand responsive transport scheme using a diesel bus running between Framlingham and Snape via Wickham Market station.	Private electric charge points installed at Campsea Ashe Station for the taxi. Taxi must be booked in advance using phone or app. Initial uptake may be slow due to public's response to Covid-19 pandemic. Katch-a-lift has been taken over by ESC to run for a further year between Framlingham and Snape via Wickham Market railway station, but using a diesel bus not electric. The 2 electric buses used needed to be on charge 50% of the time as the coverage was insufficient which caused problems. Cost to hire the buses was very large.
ESC 39	Installation of public electric vehicle charge points by ESC	Promoting Low Emission Transport	Other	2019	2021	ESC	ESC	NO	Funded	£50k - £100k	Completed	Reduced vehicle emissions	Number of sessions used, kWh of charge & number of EV miles driven (1 kWh = 2.93 EV miles).	1 electric charge point installed at Woodbridge leisure centre - Sept 2019. 2 charge points at Bungay leisure centre- June 2021. Woodbridge 2020 - 173 sessions using 1,304 kWh = 3,820 EV miles. 2021 - 499 sessions using 5,325 kWh = 15,602 EV miles. 2022/23 - 557 sessions using 7,002 kWh = 20,515 EV miles Bungay 2021 for 2 charge points - 169 sessions using 2,190 kWh = 6,416 EV miles. 2022/23 - 447 sessions using 6,008 kWh = 17,603 EV miles	
ESC 40	SCC Travel Demand Management Project within Suffolk	Promoting Travel Alternatives	Other	2020	2020	SCC	SCC	NO	Funded	£10k - 50k	Completed	Reduced vehicle emissions	Promotion campaign executed. 4 week campaign undertaken from 2nd November 2020	Aim to maintain and promote the positive travel habits used more widely during the Covid-19 lockdowns. This measure was completed with no further information to add - it will therefore be removed from the table next year.	
ESC 41	SCC temporary trial cycling improvements in ESC	Transport Planning and Infrastructure	Cycle network	2020	2020	SCC	SCC via Central Government Transport Recovery Grant	NO	Funded	Unknown	Completed	Reduced vehicle emissions	Number of trial schemes implemented. Number of schemes made permanent. 4 trial schemes implemented (2 in Beccles and 2 in Felixstowe) 3 made permanent and 1 removed in Beccles	4 temporary trial cycling schemes: Lowestoft Rd in Beccles between East of Beccles and Ellough Rd; Market Row to New Market in Beccles; Hamilton Rd in Felixstowe and High Road East & West in Felixstowe. Plans designed for Hamilton Rd Felixstowe trial to be made permanent. All schemes consulted on and waiting for summary of results. 3 schemes made permanent (both Felixstowe schemes and East of Beccles and Ellough Road). Market Row to New Market in Beccles removed at request of local councillors.	£1.685 million funding from central Government following Covid-19 pandemic has produced the Transport recovery Plan 2020 for Suffolk to be used for improving walking, cycling and public transport. All schemes were temporary trials only.

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
ESC 42	Small electric vehicle fleet at the Port of Felixstowe	Promoting Low Emission Transport	Company Vehicle Procurement -Prioritising uptake of low emission vehicles	2021	2022	Port of Felixstowe	Port of Felixstowe	NO	Funded	Unknown	Completed	Reduced vehicle emissions	Number of small fleet electric capable vehicles	The Port has added to its fleet of EV small vehicles to replace diesel vehicles and now operates 15 EV passenger cars and 2 EV small vans. All replacement vehicles will be zero emission from 2023 onwards.	-
ESC 43	Installation of electric charge points and electric pool vehicles at ESC Port Health Office, Felixstowe	Promoting Low Emission Transport	Other	2020	2021	ESC	ESC	NO	Funded	Unknown	Completed	Reduced vehicle emissions	Charge point installed. Mileage undertaken 2021=807 miles 2022=14,002 miles	2021 - Charge point installed at 70 shed. 4 pool vehicles including 1 pure electric (purchased 2020) and 3 hybrids (purchased 2022) for staff work use.	With hybrid vehicles unsure if mileage undertaken is all via electric, but Journeys undertaken are short so likely to be via electric.
ESC 44	'Go Jauntly' walking app covering areas in East Suffolk district	Promoting Travel Alternatives	Promotion of walking	2021	2022	ESC	ERDF Welcome Back Fund	NO	Funded	Unknown	Completed	Reduced vehicle emissions	Walking app available to public. Number of miles of trails on app in ESC. 70 miles of trails covering 12 towns in ESC	Spring 2022 Go Jauntly app made available to the public with ESC routes. 70 miles of walking trails covering Aldeburgh, Beccles, Bungay, Framlingham, Felixstowe, Halesworth, Leiston, Lowestoft, Saxmundham, Southwold, Wickham Market and Woodbridge.	-
ESC 45	Through the Suffolk Climate Change Partnership - ESC to reduce carbon emissions moving towards carbon neutral by 2030	Other	Other	2019	2030	ESC and Suffolk Climate Change Partnership including Environment Agency, Groundwork Suffolk and University of Suffolk	ESC, Suffolk Climate Change Partnership	NO	Partially Funded	Unknown	Planning	Emission reductions across ESC	Project involvement 2021 - Small Grants Scheme. Environmental Guidance Note for building industry. Government's Green Homes Grant funding for energy efficiency measures for owner/occupiers. Sustainable Development Supplementary Planning Guidance adopted April 2022 (see ESC 48). Council fleet transfer onto HVO (see ESC 34). March 2023 - East Suffolk Climate Action Framework.	East Suffolk Environment Task Group set up - cross-party group to analyse policies and identify areas for improvement. Task Group meets quarterly and reports to Cabinet. Intention is to thread the environment through all decisions, choices and policy formation. 2021 - Launch of Small Grants Scheme for projects to develop active sustainable travel. March 2023 - Production of East Suffolk Climate Action Framework - summarises our approach to tackling climate emergency and prioritises over 60 climate change related workstreams within East Suffolk Council. The Suffolk Climate Emergency Plan includes an 8-week e-bike trial in Lowestoft for staff working with Leading Lives. They have also commissioned an electric vehicle report to inform development of a Suffolk-wide EV Strategy to progress the EV infrastructure across the county.	-

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
ESC 46	Suffolk Air Quality Profile and production of Suffolk Air Quality Strategy	Other	Other	2020	2023	SCC Public Health & Communities, all Suffolk local authorities including ESC	SCC Public Health	NO	Funded	Unknown	Implementation	Emission reductions in Suffolk	Production of Air Quality Profile. Undertake Air Quality Summit. Develop SCC Air Quality Strategy. Develop Suffolk Community Engagement Plan. Air Quality Profile published June 2021. Air Quality Summit January 2022. Air Quality Strategy draft completed for sign off May 2023. Work begun on Suffolk Community Engagement Plan	Suffolk Air Quality Profile published June 2021 aim is to increase understanding of public health impact of poor air quality on health in Suffolk and act as a catalyst for further action. As a result of the report, air quality was made a priority by the Suffolk Health and Wellbeing Board. Air Quality Summit January 2022 for all County, District and Borough Councillors to increase air quality knowledge. Work on Suffolk-wide Air Quality Strategy has progressed during 2022 with the draft completed 2023 in conjunction with all Suffolk district and borough councils. http://www.suffolk.gov.uk/airquality Suffolk Community Engagement Plan being developed.	AQ Profile describes; the impact of poor air quality on the public's health; identifies areas of concern within Suffolk; what can be done to mitigate the harmful impact of poor air quality. The Suffolk Air Quality Summit covered an introduction to Air Quality, the effects of Air Pollution on Health and the current Air Quality situation across Suffolk.
ESC 47	Electric pool vehicle for ESC staff use at East Suffolk House	Promoting Low Emission Transport	Other	2015	2016	ESC	ESC	NO	Funded	£10k - 50k	Completed	Emission reductions across ESC	EV mileage undertaken (miles) 2016/17 - 1,378 2017/18 - 7,320 2018/19 - 7,444 2019/20 - 8,691 2020/21 - 3,944 2021/22 - 6,030 2022/23 - 4,749	2016 - 2 EV charge points installed and electric pool vehicle available for staff use on ESC business	
ESC 48	East Suffolk Council Sustainable Construction Supplementary Planning Document (SPD)	Policy Guidance and Development Control	Other policy	2021	2022	ESC	ESC	NO	Funded	< £10k	Completed	Emission reductions in ESC	Production of Sustainable Construction SPD SPD adopted April 2022	Sustainable Construction SPD adopted April 2022. Includes information about how sustainable construction methods and materials used in new development can reduce the construction and operational impact on our environment, wildlife, climate change and health and wellbeing. Provides guidance on how the operating efficiency of existing buildings can be improved through retrofitting. Guidance includes; increasing energy efficiency, renewable and low carbon energy generation, reducing waste and carbon emissions. These will in turn also reduce emission to air associated with construction.	Supplementary Planning Documents expand upon policy and provide further detail to support the implementation of policies in Local Plans. Whilst not a part of the development plan, they are a material consideration in the determination of planning applications. The Local Plan policies, which this SPD provides guidance on, can be viewed on the Council's website: www.eastsuffolk.gov.uk/localplan
ESC 49	Mini Holland Scheme for Woodbridge and Melton	Other	Other	2021	2025	SCC, ESC, Woodbridge TC, Melton PC	Department for Transport funding for the feasibility study	NO	Partially Funded	Unknown	Planning	Emission reductions in Woodbridge and Melton	Submission of feasibility study. Funding obtained from DfT	In March 2022, SCC was one of 19 local authorities to be awarded funding by the Department for Transport (DfT) to develop a feasibility study for setting out how a Mini-Holland scheme could be implemented in Woodbridge and Melton. During 2022 data collection and engagement with the local community has been undertaken in order to submit a feasibility study in 2023 to DfT (Active Travel) for funding. Public consultation will be undertaken during 2023 with a view to work starting 2024. £4million funding from Active Travel England for this scheme in the Town Centre of Woodbridge and £1million for it to the South of Woodbridge recently obtained and additional funding bid submitted.	Mini-Holland schemes prioritise cyclists and pedestrians over motorised vehicles. DfT submission is March 2023 and funding will be announced Summer 2023. If DfT funding is successful further £millions will see the scheme expanded and include Melton.

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
ESC 50	Active Travel Scheme - Grange Road, Felixstowe	Transport Planning and Infrastructure	Other	2021	2024	SCC	Active Travel England	NO	Funded	£1 million - £10 million	Planning	Emission reductions in Felixstowe	Active Travel Scheme completed	£1.3 million has been secured for an active travel scheme to encourage cycling and walking through measures such as cycle lanes, shared-use paths and improved crossing points on roads on Grange Road to link between Ferry Lane and High Street in Felixstowe.	2023 SCC will consult with the public with a view to starting work in 2024
ESC 51	ESC Clean Hydrogen Strategy	Policy Guidance and Development Control	Other policy	2021	2022	ESC	ESC	NO	Funded	< £10k	Completed	Emission reductions in ESC	Strategy adopted Adopted early 2023	Adoption of a Clean Hydrogen Strategy - sets out how ESC can enable the emergence of the local hydrogen economy between 2023 and 2028.	Vision to establish East Suffolk as a nationally significant hub for the generation, distribution, innovation, and adoption of clean hydrogen as part of the collective ambition of the private and public sector to achieve net zero by 2030.
ESC 52	SCC Development of the Local Transport Plan - LTP4	Policy Guidance and Development Control	Other policy	2023	2024	SCC	SCC	NO	Funded	< £10k	Planning	Emission reductions in ESC	LTP4 adopted	The new Local Transport Plan (LTP4) is currently under development. The LTP will be focused on decarbonising transport in Suffolk, and this will have associated benefits for Air Quality, as the two issues are closely related. The LTP will contain a dedicated section on Air Quality.	SCC are still waiting for updated guidance from the Department for Transport, which was originally planned for early 2022.
ESC 53	Plug In Suffolk	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2022	2024	SCC	SCC	NO	Funded	Unknown	Planning	Emission reductions in ESC	Number of EV charge points installed across Suffolk and in ESC district	SCC have developed Plug In Suffolk - a project to simplify the procedure of charging an electric car and make Suffolk Zero Emission Vehicle ready. Plug In Suffolk Community Grant available to contribute to the initial purchase costs and installation of an EV charge point. Aim is to eventually cover almost every possible publicly accessible car park in Suffolk so that everyone who has a contactless payment system on them can use the chargers.	First Phase of the grant heavily over-subscribed. Expressions of interest that were received are being re-allocated to new Local Electric vehicle Infrastructure (LEVI) pilot funded second phase.

2.3 PM_{2.5} – 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_{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 Public Health Outcomes Framework (PHOF) indicator DO1 – Fraction of mortality attributable to particulate (PM_{2.5}) air pollution for 2021 gives a value of 5.1% for Suffolk which is slightly lower than that for the East of England at 5.5% and for whole of England also at 5.5%.

In July 2022 ESC purchased a South Coast Science OPCube air quality monitor for gas and particulates which measures NO₂, PM₁₀ and PM_{2.5}. The Cube was deployed at a site in Little Bealings following public concern regarding dust from a waste processing site, resulting in lots of complaints regarding nuisance. The monitoring will run for 12 months and be completed in July 2023. Details regarding the monitoring and the full ratified data set will be published in the 2024 ASR. Once the monitoring is completed the Cube will be moved to another site within the district. ESC has purchased a second Cube to also be deployed on the district during 2023.

As ESC do not have results from PM_{2.5} or PM₁₀ monitoring for 2022, the current [Defra background mapping resource](#) has been used to provide maximum background annual mean PM_{2.5} concentrations on a 1km grid square basis within ESC for 2022.

Concentrations range from 7.6 µg/m³ to 11.6 µg/m³ across the district with the majority of sites showing concentrations between 8.0 µg/m³ and 8.9 µg/m³.

There are 5 grid squares with concentrations between 10.0 µg/m³ and 10.9 µg/m³, 4 of which are located along the A14 trunk road at Nacton, Bucklesham and Levington, and the fifth in the Love Road/Yeovil Road area of Lowestoft close to the football club. There are 2 grid squares showing 11.1 µg/m³ and 11.6 µg/m³ which are located on the Ellough industrial estate and the Ellough side of Beccles respectively.

The first location for our new South Coast Science OPCube air quality monitor will be in the above area of Beccles so that we can confirm concentrations of PM_{2.5}, PM₁₀ and NO₂ in this location.

East Suffolk Council is taking the following measures to address PM_{2.5}:

- The Suffolk Air Quality Group, of which ESC is a member, has engaged with Suffolk County Council (SCC) Public Health in order to move forward together with regard to tackling PM_{2.5}. SCC has produced the Healthy Suffolk Joint Strategic Needs Assessment (JSNA) which aims to accurately assess the health needs of the local population and underpins the Health and Wellbeing Strategy.

During the latter part of 2019 and in 2020, the Council, together with all the other Local Authorities across Suffolk worked with SCC Transport and Public Health colleagues to prepare an 'Air Quality Profile' report for Suffolk (measure ESC 46 in table 2.2). The report maps, at a district and borough level, local air pollution levels and explores evidence-based interventions that can be undertaken by local authorities, businesses, communities and individuals to improve air quality. The report was published in June 2021 and now forms part of the JSNA documents.

As a result of the report, air quality was made a priority by [the Suffolk Health and Wellbeing board](#) as part of their duty to "encourage integrated working" between health, care, police and other public services in order to improve wellbeing outcomes for Suffolk. The recommendations from the Suffolk Profile have also informed both the development of a Suffolk-wide Air Quality Strategy published in May 2023 and the start of the Suffolk Community Engagement Plan.

The Suffolk Air Quality Strategy sets out the range of actions identified as being important to the improvement of air quality, along with who is the lead authority for the work, timescales for implementation, and what measurements or outcomes will be achieved. The Strategy can be viewed at [air-quality-strategy-and-action-plan \(suffolk.gov.uk\)](#)

The air quality engagement plan sets out the action SCC, working with borough and district partners, will take to raise awareness of the health impacts of air quality in Suffolk. The aim is to increase awareness to enable individuals to make choices that protect both their health and the health of others from the harmful effects of pollution.

We will continue to consult with Suffolk County Council Public Health colleagues and be advised by them, and national guidance, on any relevant measures that will reduce exposure to PM_{2.5}.

- ESC, working in partnership with SCC and other potential partners, is committed to promoting alternative forms of transport and modes of travel such as cycling,

walking, and use of public transport with the aim of reducing the reliance on private cars. SCC also has a number of its own measures. The promotion of active travel in the form of cycling and walking within the District has wider benefits and has strong links to the Public Health Outcomes Framework (PHOF) in terms of improving the health and wellbeing of the population, as well as improving the local air quality through reduced congestion and vehicle emissions;

- ❖ The ESC Walking and Cycling Strategy approved in October 2022 (ESC 27) recognises the need for continued promotion of walking and cycling and for greater improvements to the infrastructure;
- ❖ The ESC Lowestoft Town Centre Masterplan (ESC 33) aims to improve cycling and walking across the Town;
- ❖ Travel alternatives included in the ESC Local Plan (ESC 9) and promotion of travel alternatives for ESC staff (ESC 13) will also impact positively in reducing emissions by promoting a change in travel culture and providing advice, support and infrastructure to encourage the use of other means of transport rather than the car.
- ❖ SCC together with ESC and Woodbridge Town Council has recently been successful in a bid to Active Travel England for £5million to undertake a 'Mini Holland' scheme in Woodbridge (ESC 49). An additional Department for Transport funding bid has been submitted to expand the scheme in Woodbridge and include Melton (Melton Parish Council are also involved in this bid);
- ❖ SCC has recently been successful in a bid to Active Travel England for £1.3million to encourage cycling and walking through measures such as cycle lanes, shared-use paths and improved crossing points on roads on Grange Road to link between Ferry Lane and High Street in Felixstowe (ESC 50);
- ❖ In 2022 three temporary trial cycling schemes have been made permanent by SCC: East of Beccles to Ellough Road in Beccles; Hamilton Road in Felixstowe and High Road East and West in Felixstowe (ESC 41);
- ❖ Provision of Greener Travel Information by SCC (ESC 12);
- ❖ Adoption of a national award scheme (Modeshift Stars) by SCC to assist schools with Travel Plans (ESC 19);
- ❖ Promotion of cycling within Suffolk via enhanced webpages and bike-ability courses in schools (ESC 30);
- ❖ Establishing Quiet Lanes across the County in partnership with local authorities and other bodies (ESC 37);

- ❖ SCC Travel Demand promotion following the COVID-19 lockdowns to maintain and promote the positive travel habits that were used more widely during this time (ESC 40);
 - ❖ Launch of the 'Go Jauntly' app in Spring 2022 with 70 miles of walking trails within ESC (ESC 44); and
 - ❖ Martlesham Park and Cycle - a new scheme introduced by SCC for commuters into Ipswich – they can park for free and cycle into Ipswich. Includes use of a free bike locker or Sheffield bike stands and has downloadable cycle routes for all abilities. This scheme will reduce traffic in Ipswich but also that using the A1214 through Kesgrave and Rushmere St. Andrew within ESC. This is an additional scheme to those included within table 2.2.
- Reductions in PM_{2.5} emissions are targeted by the following ESC measures related to Planning:
 - ❖ Assessments of planning applications to consider their impact on air quality (STA 2 and ESC7); and
 - ❖ Air quality is included in the new ESC Local Plan documents (ESC8).
 - Emission reduction measures being undertaken by the Port of Felixstowe will aid to reduce emissions of PM_{2.5} both close to the Port boundary in Felixstowe and along the transport routes. Efficient power technologies fitted to Rubber-Tyred Gantry cranes (RTGs) – ECO-RTGs and electric RTGs replacement program in place (ESC 1); abatement technologies fitted to Internal Movement Vehicles and replacement program in place (ESC 2); increased use of rail to move freight (ESC 3); and production of the Port of Felixstowe Air Quality Strategy (ESC 36).
 - Provision of information to the Public and commerce on reducing emissions from solid fuel and wood burning (ESC11);
 - Third vehicular crossing of Lake Lothing in Lowestoft. This will significantly reduce congestion and therefore PM emissions within Lowestoft (ESC 21);
 - School Travel - delivering air quality information/education and anti-idling events at primary schools (ESC 29);
 - The Traffic Regulation Order for the Thoroughfare, close to the Woodbridge AQMA, will reduce congestion at this junction by freeing up the left filter lane at the lights thereby smoothing the traffic flow (WBG3); and

- Possible A12 Stratford St. Andrew bypass would smooth the traffic flow thereby reducing PM_{2.5} emissions (measure STA7).

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

This section sets out the monitoring undertaken within 2022 by East Suffolk Council (ESC) 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.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

ESC undertook automatic (continuous) monitoring at one site during 2022. Table A.1 in Appendix A shows the details of the automatic monitoring sites. The [East Suffolk District Council - Air Quality monitoring service \(airqualityengland.co.uk\)](https://www.airqualityengland.co.uk) page presents automatic monitoring results for ESC with automatic monitoring results also available through the [UK-Air website](https://www.uk-air.org/).

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

3.1.2 Non-Automatic Monitoring Sites

ESC undertook non-automatic (i.e. passive) monitoring of NO₂ at 80 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.

The diffusion tube network is updated as required in response to new potential sources of pollution, new receptors being introduced, proposed land development, or concerns raised by local residents. These are located with reference to the LAQM technical guidance. Four new sites were added to NO₂ monitoring network in 2022 across the ESC district, within the following towns/parishes:

- Leiston – one new site added to monitor any changes due to the proposed Sizewell C construction traffic.
- Lowestoft – one site added following predicted temporary traffic flow alterations related to the construction of the Gull Wing Bridge in Lowestoft
- Woodbridge – one site added following local concerns due to school run traffic;
- Yoxford – one new site added in this location at the junction with the A12 to monitor any changes due to the proposed Sizewell C construction traffic.

The following monitoring sites were removed at the end of 2021, to ensure that resources were allocated appropriately with reference to LAQM guidelines:

- BRM 1, HLW 1, MRT 6, MRT 7 and MRT 8 – these sites were all in place following concerns raised by the public. However, the 12-month monitoring survey confirmed annual mean concentrations at these sites were all low (maximum of 15.5 $\mu\text{g}/\text{m}^3$);
- KSG 13 – this site was removed as the triplicate site KSG 10a,b,c located on the same building showed higher concentrations (26.5 $\mu\text{g}/\text{m}^3$ compared with 18.9 $\mu\text{g}/\text{m}^3$) KSG 10a,b,c will be retained going forward.
- LOW 10 – this roadside site became located in the middle of a construction area for the Gull Wing Bridge – as such it became inaccessible and no longer had any road traffic flowing past so was removed.

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)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 $\mu\text{g}/\text{m}^3$. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 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.

Table A.5 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.

During 2022 the continuous analyser, located at a relevant receptor within the revoked Woodbridge AQMA, recorded a good data capture rate of 99.59%. The monitor measured an annual mean NO₂ concentration of 23 µg/m³. This is within the annual mean air quality objective of 40 µg/m³ for the ninth year running with a trend of continued reduction over this time period. The 1-hour objective is set at 200 µg/m³ not to be exceeded more than 18 times per year. The automatic analyser in Woodbridge did not record any 1-hour mean concentrations in excess of at 200 µg/m³, thus achieving compliance with the 1-hour mean NO₂ air quality objective.

The results from diffusion tube monitoring show that there are no sites across the Council with annual mean concentrations at or above the objective level of 40 µg/m³ in 2022. There are no instances of the annual mean exceeding 60 µg/m³ in 2022 and therefore the risk of exceeding the 1-hour objective at any locations is very low. Additionally, there were no diffusion tube locations which recorded a concentration outside of 10% of the air quality objective (i.e. any site above 36 µg/m³ and therefore close to, but not above, the objective level of 40 µg/m³). The maximum annual mean concentration was 32.6 µg/m³, recorded at triplicate site LOW 6, located next to the Bascule Bridge crossing of Lake Lothing in Lowestoft Harbour.

Trend graphs showing annual mean NO₂ concentrations at the automatic analyser and all diffusion tube sites within the district with 5 years or more of data are presented in Appendix A: Monitoring Results, Figure A.1.

Monitoring locations across the Council have seen overall decreasing annual mean NO₂ concentrations over the last 5 years. Concentrations in 2020 reduced at all monitoring locations, which is likely due to the impact of COVID-19 and associated travel restrictions in 2020. During 2021 COVID-19 traffic restrictions were fewer, and in 2022 restrictions had ceased. NO₂ concentrations at the majority of sites responded to the lessening of the restrictions on traffic flows by showing a slight increase in 2021 and at some sites also in 2022. The overall trend at all sites in East Suffolk, with the exception of LOW 2 and 7 discussed below, is one of reduction in NO₂ concentrations between 2018 and 2022.

NO₂ concentrations at LOW 2 (Fir Lane) and LOW 7 (junction of Pier Terrace/Belvedere Road/London Road South) have fluctuated between 2018 and 2022 with the concentrations in 2018 and 2022 being the same. It is predicted that traffic easing in Lowestoft will be seen once the Gull Wing Crossing over Lake Lothing is open later in 2023, and this in turn should help reduce NO₂ concentrations across the town.

3.2.2 Particulate Matter (PM₁₀)

In July 2022 ESC purchased a South Coast Science OPCube air quality monitor for gas and particulates which measures NO₂, PM₁₀ and PM_{2.5}. The Cube was deployed at a site in Little Bealings following public concern with dust from a waste processing site, resulting in lots of complaints regarding nuisance. The monitoring will run for 12 months and be completed in July 2023. Details regarding the monitoring and the full ratified data set will be published in the 2024 ASR. Once the monitoring is completed the Cube will be moved to another site within the district. ESC has purchased a second Cube to also be deployed on the district during 2023.

3.2.3 Particulate Matter (PM_{2.5})

In July 2022 ESC purchased a South Coast Science OPCube air quality monitor for gas and particulates which measures NO₂, PM₁₀ and PM_{2.5}. The Cube was deployed at a site in Little Bealings following public concern with dust from a waste processing site, resulting in lots of complaints regarding nuisance. The monitoring will run for 12 months and be completed in July 2023. Details regarding the monitoring and the full ratified data set will be published in the 2024 ASR. Once the monitoring is completed the Cube will be moved to another site within the district. ESC has purchased a second Cube to also be deployed on the district during 2023.

3.2.4 Sulphur Dioxide (SO₂)

ESC does not undertake monitoring for SO₂.

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)
WBG	Woodbridge Junction	Roadside	627596	249261	NO ₂	Yes - AQMA No. 1 - Woodbridge	ozone chemi-luminescence	0	1.2	2.6

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)
LOW 1	Belvedere Road (LP F2850)	Roadside	654606	292625	NO2	No	N/A	2.5	No	1.9
LOW 2	Kerbside lamppost at 1 Fir Lane (LP 1742)	Kerbside	653209	293785	NO2	No	6.0	0.5	No	1.8
LOW 3	Kerbside lamppost at 8 Mill Road (LP F185)	Kerbside	654477	292395	NO2	No	6.8	1.2	No	1.9
LOW 5	St Margarets Church	Urban Background	654065	294200	NO2	No	N/A	N/A	No	1.7
LOW 6a,b,c	9 Pier Terrace	Roadside	654690	292625	NO2	No	0.0	2.5	No	1.8
LOW 7	Belvedere Rd / London Rd South	Roadside	654671	292601	NO2	No	7.0	2.5	No	1.7
LOW 8	Levington Court, London Rd South	Roadside	654660	292571	NO2	No	0.0	5.7	No	1.7
LOW 9	Lampost at 24/26 Denmark Road	Roadside	654723	292914	NO2	No	9.4	2.3	No	1.8
LOW 11	Stradbroke Road / Bloodmoor Road	Roadside	652552	290427	NO2	No	0.0	8.3	No	1.8
LOW 12	21 Rotterdam Road	Roadside	654200	294039	NO2	No	0.0	16.8	No	1.9

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)
LOW 13	Lampost at 252/254 Denmark Road	Kerbside	654049	292963	NO2	No	0.5	0.9	No	1.7
LOW 14	1 Fir Lane (house)	Roadside	653228	293811	NO2	No	0.0	9.1	No	2.0
LOW 15	Downpipe 14 Kirkley Run	Roadside	653434	291689	NO2	No	0.0	9.1	No	1.6
OBR 1	Saltwater Way/ 164 Bridge Road (LP F2263)	Roadside	652046	292503	NO2	No	6.0	3.2	No	1.9
OBR 2	Drainpipe on 31 Bridge Road opp Golden Court	Roadside	652304	293021	NO2	No	0.0	4.3	No	2.0
OBR 4	12 Beccles Road (the low house)	Roadside	651869	292127	NO2	No	0.0	5.2	No	0.9
OBR 5	181 Normanston Drive	Roadside	652554	293282	NO2	No	0.0	6.4	No	1.7
BEC 1	10 Ingate (by crossing)	Roadside	642615	289909	NO2	No	0.0	1.3	No	1.8
BEC 3	Fredricks Road cycle sign	Roadside	642553	289922	NO2	No	0.0	1.5	No	1.8
BEC 4	1 Ingate	Roadside	642564	289922	NO2	No	0.0	1.3	No	1.7
BEC 5a,b,c	11 Ingate	Kerbside	642592	289916	NO2	No	0.0	0.9	No	1.8
BEC 6	8 Old Market (near bus station)	Roadside	642158	290574	NO2	No	0.0	3.0	No	1.9

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)
BEC 7	20A London Road, Beccles (A145)	Roadside	644220	290213	NO2	No	0.0	1.5	No	1.8
BUN 1	1 Trinity Street	Roadside	633670	289817	NO2	No	0.0	1.6	No	2.0
BUN 2	48 Lower Olland Street	Roadside	633827	289480	NO2	No	0.0	1.5	No	1.8
BLY 1	Menagwins, Chapel Road	Roadside	645183	275218	NO2	No	0.0	1.3	No	1.8
FLX 12	119 Hamilton Road	Roadside	630363	234890	NO2	No	0.0	5.0	No	1.7
FLX 14	1 Adastral Close	Industrial	628604	232847	NO2	No	0.0	5.8	No	1.8
FLX 17	38 Spriteshall Lane, Trimley St Mary	Roadside	628817	236323	NO2	No	0.0	31.0	No	2.0
FLX 20	73 Glemsford Close	Industrial	628669	233979	NO2	No	10.0	54.0	No	2.0
FLX 21	4 Kings Fleet Road	Suburban	629253	234431	NO2	No	N/A	1.5	No	2.0
FLX 22	13 Levington Road	Industrial	629172	233446	NO2	No	0.0	9.0	No	2.3
FLX 23	23 Heathgate Piece, Trimley St Mary	Roadside	628542	236592	NO2	No	0.0	25.0	No	1.8
FLX 24	22 Brandon Road	Roadside	628358	234634	NO2	No	0.0	32.0	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
FLX 26a,b,c	Dooley Inn, Ferry Lane front	Roadside	627959	234246	NO2	No	0.0	13.0	No	2.5
FLX 39	424 High Rd, Trimley St Mary	Roadside	628760	236071	NO2	No	0.0	11.0	No	2.8
TRM 3	216 High Road, Trimley St Martin	Roadside	627618	237092	NO2	No	0.0	1.8	No	1.6
TRM 4	Lampost 421 to r/h/s 205 High Road, Trimley	Roadside	627613	237080	NO2	No	0.0	1.6	No	1.9
TRM 5	McColls, High Rd, Trimley St Martin	Roadside	627629	237078	NO2	No	0.0	4.2	No	1.9
TRM 8	Lampost 299 O/S 69 High Road, Trimley St Mary	Roadside	628270	236266	NO2	No	1.8	1.4	No	1.7
TRM 10	293 High Street, Walton	Roadside	629340	235737	NO2	No	0.0	2.9	No	1.9
TRM 12	193 Pink House, Walton	Roadside	629641	235529	NO2	No	0.0	2.3	No	2.0
KSG 9	118 Main Road	Roadside	621680	245796	NO2	No	N/A	2.6	No	2.0
KSG 10a,b,c	The Bell Inn, Main Road (front window)	Roadside	621815	245785	NO2	No	0.0	2.7	No	1.8
MEL 5	6 The Street	Roadside	628145	250417	NO2	No	0.5	3.6	No	1.8
MEL 7	28 The Street	Kerbside	628177	250478	NO2	No	0.0	0.3	No	1.9

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)
MRT 1a,b,c	Horseman Court	Roadside	624633	245447	NO2	No	0.0	21.0	No	1.7
LGM 2	Carlton Lodge, Main Road	Roadside	634051	258315	NO2	No	0.0	6.3	No	2.2
FAR 1	Turret House, The Street	Roadside	636273	260134	NO2	No	0.0	1.9	No	1.7
FAR 2a,b,c	Post Office Stores, The Street	Roadside	636274	260120	NO2	No	0.0	1.4	No	1.8
STA 1a,b,c	1 Long Row, Main Road	Roadside	635753	260002	NO2	Yes, AQMA No. 3 - Stratford St. Andrew	0.0	2.0	No	1.9
STA 2	Road sign opposite Long Row	Roadside	635732	259995	NO2	No	N/A	1.7	No	1.6
STA 6	Jacobs Cottage, Main Road	Roadside	635794	260042	NO2	No	0.0	7.0	No	1.8
STA 7	30mph sign, Long Row	Roadside	635736	259984	NO2	No	N/A	1.9	No	1.3
STA 8a,b,c	5 Long Row, Main Road	Roadside	635743	259992	NO2	Yes, AQMA No. 3 - Stratford St. Andrew	0.0	2.0	No	1.7
THEB 1	BT Telegraph Pole, Leiston Road (opp. Lion Inn PH)	Kerbside	643797	265815	NO2	No	1.0	0.9	No	1.6
MID 1	Downpipe on 2 The Moor	Roadside	641611	267791	NO2	No	0.0	2.5	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
YOX 1	Brook Street(outside Kings Head PH)	Roadside	639647	268740	NO2	No	0.0	1.4	No	2.0
YOX 2	Cavan Cottage, High Street	Roadside	639693	268778	NO2	No	0.0	3.4	No	1.8
SAX 1	30 Church Street	Roadside	638683	263014	NO2	No	0.0	1.0	No	2.0
LEI 2	Lamppost 4 Sizewell Road	Roadside	644557	262464	NO2	No	0.5	1.4	No	1.8
LEI 3	White Horse Hotel, Station Rd	Roadside	644325	262634	NO2	No	0.0	2.3	No	2.2
LEI 4	SCC Lamp-post 738, Sylvester Road	Roadside	644843	262483	NO2	No	8.4	1.6	No	2.1
TUN 1	Downpipe, The Old Bakery, Snape Road	Kerbside	636110	255114	NO2	No	0.0	0.5	No	1.9
LTB 1	30mph sign, Martlesham Rd	Kerbside	624194	247362	NO2	No	54.0	0.9	No	2.0
MLS 1	Street Sign nr Ernest Doe, Main Road (A12)	Roadside	632734	257733	NO2	No	5.0	1.8	No	1.6
WKM 1	Lamppost at 32 High Street	Roadside	630180	255718	NO2	No	0.0	1.5	No	1.9
WKM 2	Drainpipe on 70a High Street	Kerbside	630164	255904	NO2	No	0.0	0.6	No	2.0
WBG 1a,b,c	93 Thoroughfare	Roadside	627596	249261	NO2	No	0.0	1.3	Yes	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)
WBG 3	8 Kingston Farm Road	Suburban	626997	248488	NO2	No	N/A	1.0	No	1.9
WBG 5	Suffolk Place corner	Roadside	627604	249243	NO2	No	0.0	2.5	No	2.3
WBG 8	95 Thoroughfare	Roadside	627601	249283	NO2	No	1.0	1.6	No	2.4
WBG 10	St John's Street signpost	Roadside	627570	249240	NO2	No	0.5	1.2	No	2.1
WBG 12	8 Lime Kiln Quay Road	Roadside	627664	249203	NO2	No	0.5	5.0	No	1.8
WBG 13	Traffic lights at 85 Thoroughfare	Roadside	627585	249239	NO2	No	2.5	1.8	No	1.9
WBG 18	106/108 Thoroughfare	Roadside	627627	249339	NO2	No	0.0	1.1	No	2.2
WBG 20	97 Thoroughfare	Roadside	627604	249295	NO2	No	0.0	2.6	No	1.9
WBG 24	Downpipe, 29 Grove Road (Southbound)	Roadside	626026	249631	NO2	No	0.0	9.7	No	1.7
WBG 25	Downpipe, 6 Grove Road (Northbound)	Roadside	626038	249389	NO2	No	0.0	7.8	No	2.0
WBG 26	Drainpipe on 23 Burkitt Road	Roadside	626503	249331	NO2	No	0.0	4.0	No	1.9

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: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
WBG	627596	249261	Roadside	99.59	99.59	32	31	25	25	23

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

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

Notes:

The annual mean concentrations are presented as µg/m³.

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

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

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

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

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

Table A.4 – Annual Mean 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 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
LOW 1	654606	292625	Roadside	92.3	92.3	27.2	28.0	22.4	23.8	24.6
LOW 2	653209	293785	Kerbside	92.3	92.3	25.4	29.5	24.2	23.4	25.4
LOW 3	654477	292395	Kerbside	92.3	92.3	23.3	20.3	16.0	19.3	18.6
LOW 5	654065	294200	Urban Background	92.3	92.3	13.5	13.7	10.7	11.0	11.1
LOW 6a,b,c	654690	292625	Roadside	92.3	92.3	34.7	33.2	29.3	33.2	32.6
LOW 7	654671	292601	Roadside	92.3	92.3	29.2	30.3	24.8	27.8	29.2
LOW 8	654660	292571	Roadside	92.3	92.3		20.7	17.6	18.8	19.9
LOW 9	654723	292914	Roadside	92.3	92.3		27.9	24.6	24.1	26.5
LOW 11	652552	290427	Roadside	84.6	84.6		25.7	20.9	22.8	21.9
LOW 12	654200	294039	Roadside	92.3	92.3			12.2	13.4	14.9
LOW 13	654049	292963	Kerbside	92.3	92.3			16.7	17.9	19.9
LOW 14	653228	293811	Roadside	92.3	92.3			15.9	15.4	16.2
LOW 15	653434	291689	Roadside	88.9	69.2					18.7

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 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
OBR 1	652046	292503	Roadside	92.3	92.3	26.2	27.5	21.0	23.0	23.6
OBR 2	652304	293021	Roadside	92.3	92.3	26.0	22.1	18.4	20.1	19.7
OBR 4	651869	292127	Roadside	92.3	92.3	22.0	21.8	18.3	18.8	19.6
OBR 5	652554	293282	Roadside	84.6	84.6		19.4	15.6	16.1	16.6
BEC 1	642615	289909	Roadside	92.3	92.3	24.9	23.3	18.0	19.1	19.1
BEC 3	642553	289922	Roadside	84.6	84.6	34.7	33.6	25.3	25.7	27.7
BEC 4	642564	289922	Roadside	92.3	92.3	24.2	20.8	16.9	18.7	19.2
BEC 5a,b,c	642592	289916	Kerbside	92.3	92.3	33.2	29.3	22.7	26.1	25.5
BEC 6	642158	290574	Roadside	92.3	92.3		21.8	14.0	14.5	15.1
BEC 7	644220	290213	Roadside	92.3	92.3				14.8	14.7
BUN 1	633670	289817	Roadside	92.3	92.3	25.7	26.1	21.2	22.2	22.2
BUN 2	633827	289480	Roadside	82.7	82.7				30.7	28.9
BLY 1	645183	275218	Roadside	92.3	92.3		28.2	21.1	23.3	23.5

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 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
FLX 12	630363	234890	Roadside	92.3	92.3	24.1	23.3	19.8	20.1	19.2
FLX 14	628604	232847	Industrial	92.3	92.3	25.0	24.1	21.9	22.0	20.5
FLX 17	628817	236323	Roadside	92.3	92.3	21.2	20.4	17.3	17.8	17.8
FLX 20	628669	233979	Industrial	92.3	92.3	26.2	27.5	25.1	22.1	20.8
FLX 21	629253	234431	Suburban	92.3	92.3	19.8	20.0	17.7	17.3	16.5
FLX 22	629172	233446	Industrial	84.6	84.6	19.9	20.1	18.2	17.3	15.9
FLX 23	628542	236592	Roadside	92.3	92.3	27.1	24.7	20.3	21.9	21.8
FLX 24	628358	234634	Roadside	92.3	92.3	24.2	22.6	21.0	20.7	19.5
FLX 26a,b,c	627959	234246	Roadside	92.3	92.3	34.8	32.3	28.9	30.1	28.3
FLX 39	628760	236071	Roadside	92.3	92.3	22.4	22.6	18.7	18.8	19.4
TRM 3	627618	237092	Roadside	92.3	92.3	24.5	23.0	19.1	19.8	18.8
TRM 4	627613	237080	Roadside	92.3	92.3	26.0	25.1	21.4	20.9	20.6
TRM 5	627629	237078	Roadside	92.3	92.3	23.6	21.9	18.5	19.6	18.8
TRM 8	628270	236266	Roadside	92.3	92.3	27.7	27.0	23.2	23.6	23.1

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 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
TRM 10	629340	235737	Roadside	92.3	92.3	25.8	26.6	22.2	22.2	21.6
TRM 12	629641	235529	Roadside	92.3	92.3	24.7	23.7	20.5	20.9	20.4
KSG 9	621680	245796	Roadside	92.3	92.3	29.7	29.1	22.7	22.2	24.0
KSG 10a,b,c	621815	245785	Roadside	92.3	92.3	34.7	32.3	24.9	26.5	26.2
MEL 5	628145	250417	Roadside	92.3	92.3	23.0	24.2	20.4	19.9	20.2
MEL 7	628177	250478	Kerbside	92.3	92.3	24.4	23.7	17.2	19.2	19.2
MRT 1a,b,c	624633	245447	Roadside	92.3	92.3	23.2	22.3	18.5	19.5	19.5
LGM 2	634051	258315	Roadside	92.3	92.3	18.9	17.1	14.7	14.0	14.2
FAR 1	636273	260134	Roadside	92.3	92.3	23.5	21.2	17.0	17.8	17.4
FAR 2a,b,c	636274	260120	Roadside	92.3	92.3	27.4	24.4	19.0	20.3	19.7
STA 1a,b,c	635753	260002	Roadside	92.3	92.3	34.0	32.3	23.8	26.0	25.9
STA 2	635732	259995	Roadside	92.3	92.3	24.1	24.6	14.9	15.8	16.0
STA 6	635794	260042	Roadside	92.3	92.3	21.3	20.2	15.8	16.8	18.1
STA 7	635736	259984	Roadside	92.3	92.3	30.2	28.0	20.4	22.6	21.2

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 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
STA 8a,b,c	635743	259992	Roadside	92.3	92.3	37.7	36.2	27.4	28.3	29.3
THEB 1	643797	265815	Kerbside	92.3	92.3			14.8	16.1	15.2
MID 1	641611	267791	Roadside	92.3	92.3			8.7	8.4	7.8
YOX 1	639647	268740	Roadside	92.3	92.3			13.8	13.6	14.3
YOX 2	639693	268778	Roadside	92.3	92.3					9.6
SAX 1	638683	263014	Roadside	84.6	84.6	28.7	27.8	20.7	25.1	22.5
LEI 2	644557	262464	Roadside	82.7	82.7	25.9	22.7	18.6	20.1	19.3
LEI 3	644325	262634	Roadside	92.3	92.3	22.7	21.8	17.8	19.3	18.4
LEI 4	644843	262483	Roadside	90	76.9					10.0
TUN 1	636110	255114	Kerbside	92.3	92.3			13.1	13.5	12.8
LTB 1	624194	247362	Kerbside	92.3	92.3				16.4	16.8
MLS 1	632734	257733	Roadside	92.3	92.3				19.6	19.1
WKM 1	630180	255718	Roadside	92.3	92.3				13.7	13.2
WKM 2	630164	255904	Kerbside	92.3	92.3				18.6	17.5

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 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
WBG 1a,b,c	627596	249261	Roadside	92.3	92.3	32.8	33.7	25.2	24.3	22.9
WBG 3	626997	248488	Suburban	92.3	92.3	12.4	13.1	9.5	9.3	8.9
WBG 5	627604	249243	Roadside	92.3	92.3	20.6	20.9	14.7	15.5	14.8
WBG 8	627601	249283	Roadside	92.3	92.3	32.5	32.5	22.5	23.2	22.2
WBG 10	627570	249240	Roadside	82.7	82.7	25.7	24.3	15.5	16.3	16.4
WBG 12	627664	249203	Roadside	92.3	92.3	19.9	21.5	14.9	14.4	14.4
WBG 13	627585	249239	Roadside	92.3	92.3	27.6	27.1	18.8	20.1	19.3
WBG 18	627627	249339	Roadside	92.3	92.3	29.7	29.9	20.6	20.4	20.9
WBG 20	627604	249295	Roadside	92.3	92.3	31.0	30.3	21.5	21.6	20.9
WBG 24	626026	249631	Roadside	92.3	92.3			21.2	20.5	20.2
WBG 25	626038	249389	Roadside	92.3	92.3			17.1	17.8	15.9
WBG 26	626503	249331	Roadside	90.9	84.6					10.7

☒ 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_2 annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

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

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

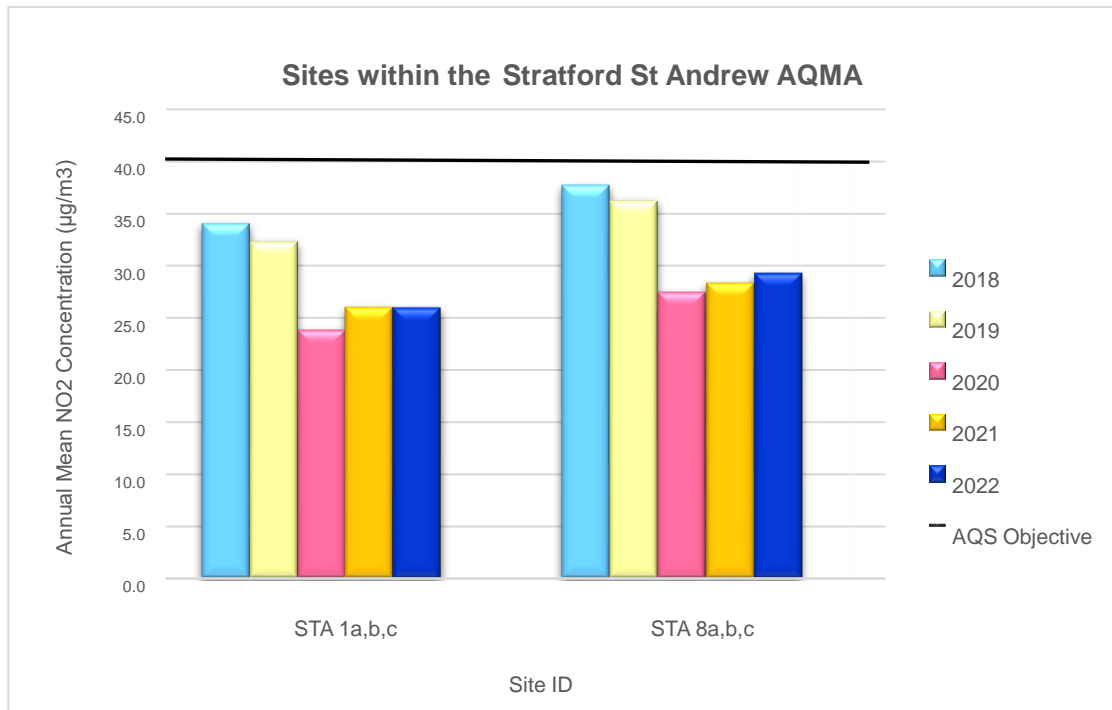
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

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

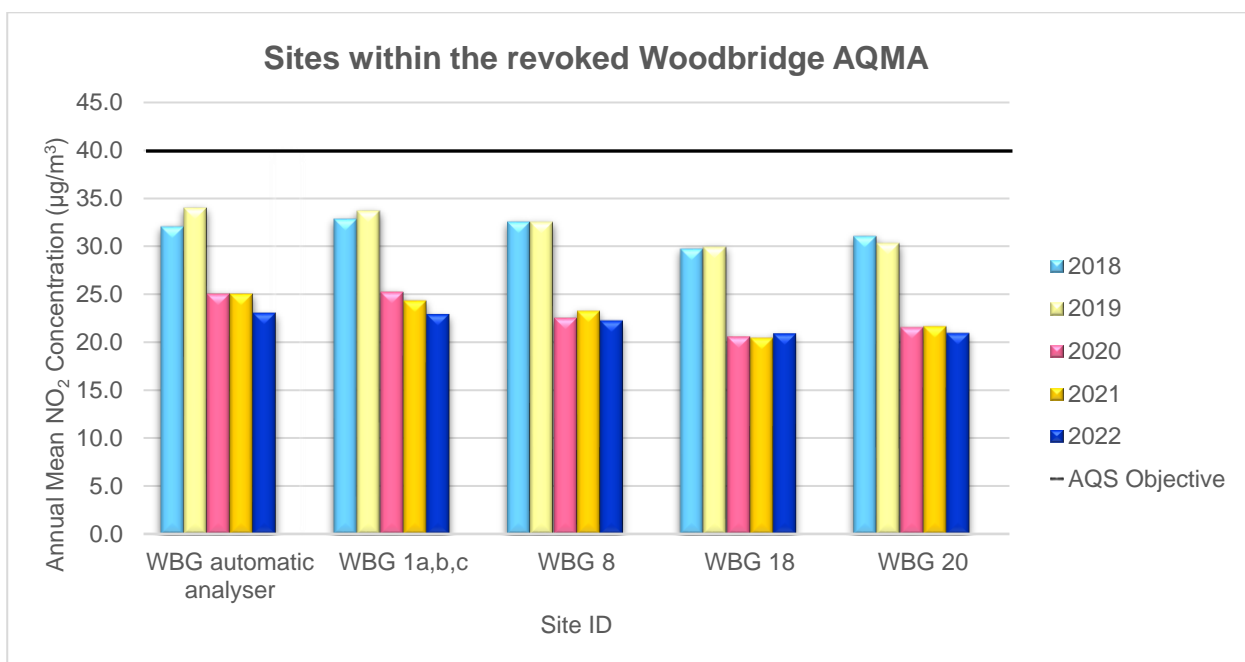
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.1 – Trends in Annual Mean NO₂ Concentrations

Trends in Annual Mean NO₂ Concentrations at monitoring sites within the Stratford St Andrew AQMA



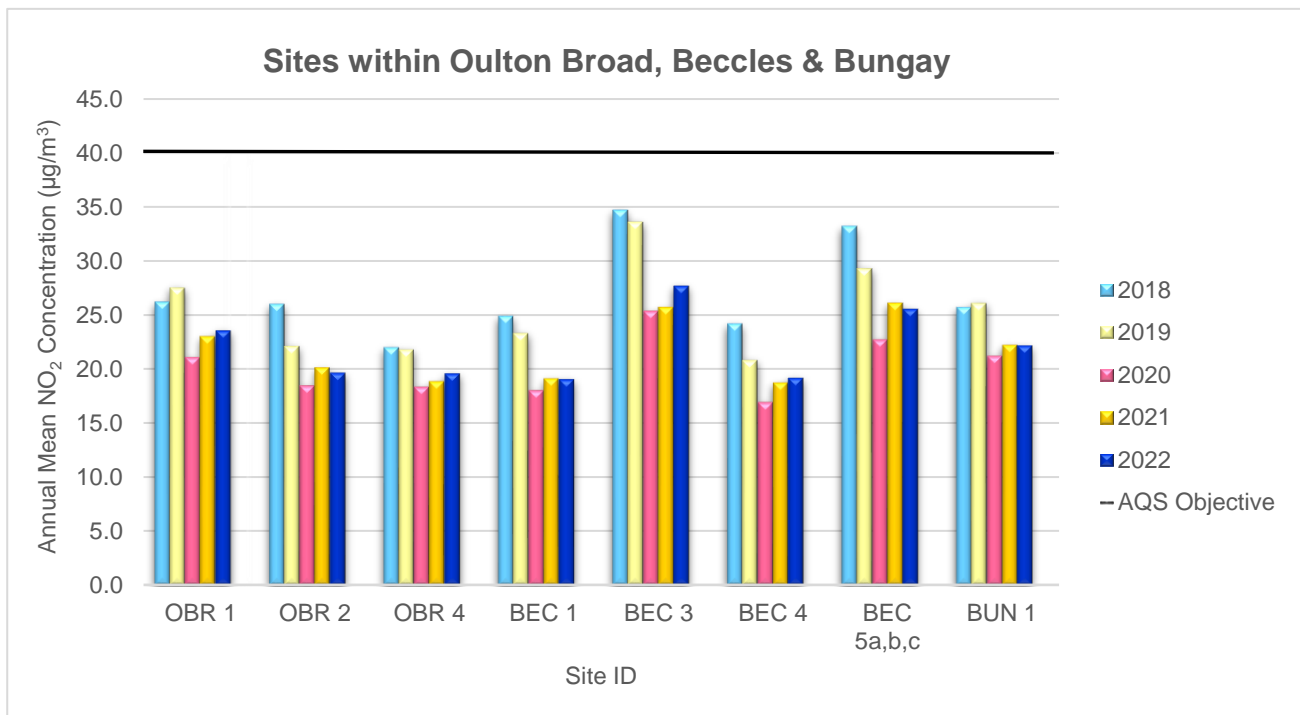
Trends in Annual Mean NO₂ Concentrations at monitoring sites within the revoked Woodbridge AQMA including the continuous analyser



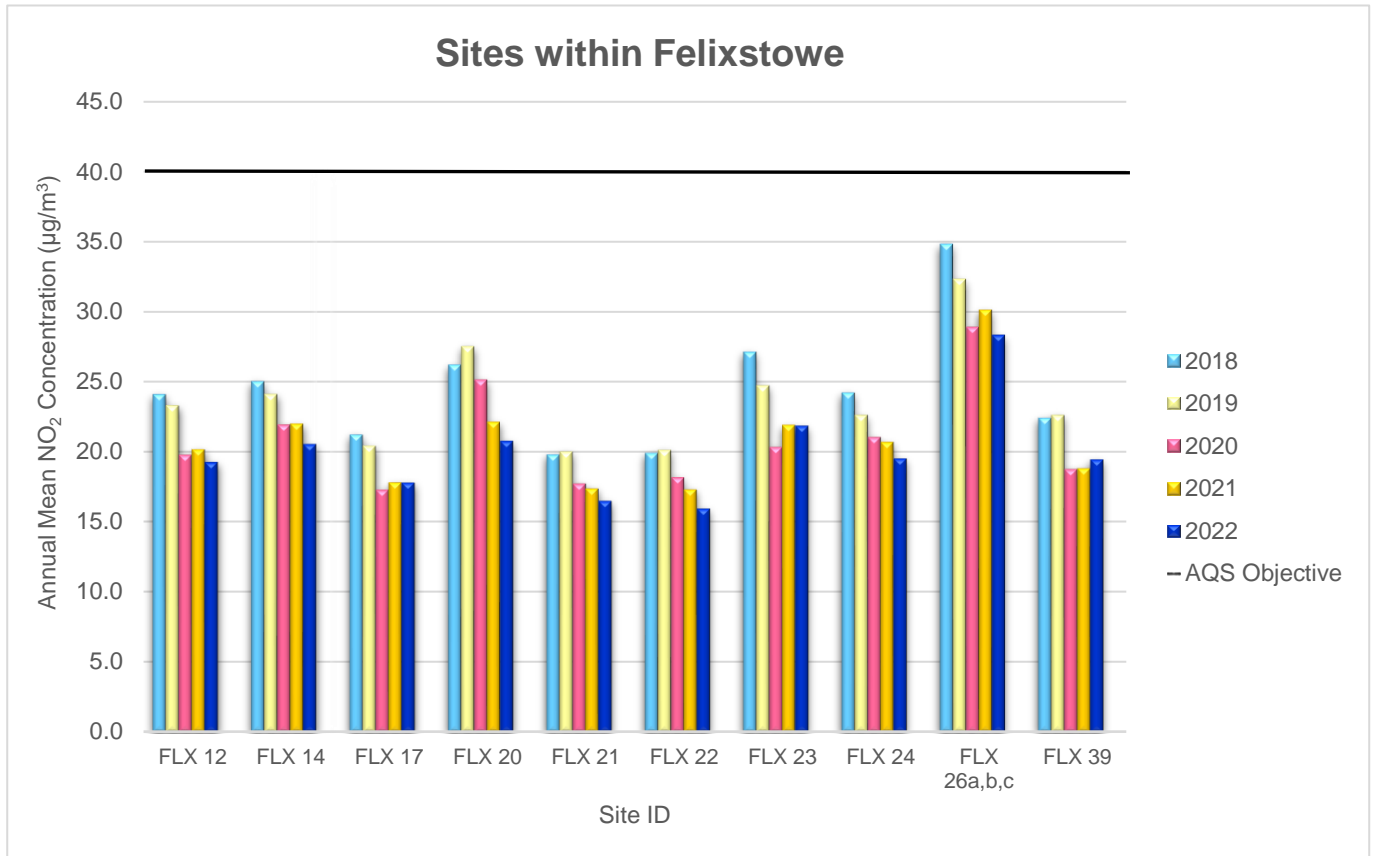
Trends in Annual Mean NO₂ Concentrations at monitoring sites within Lowestoft



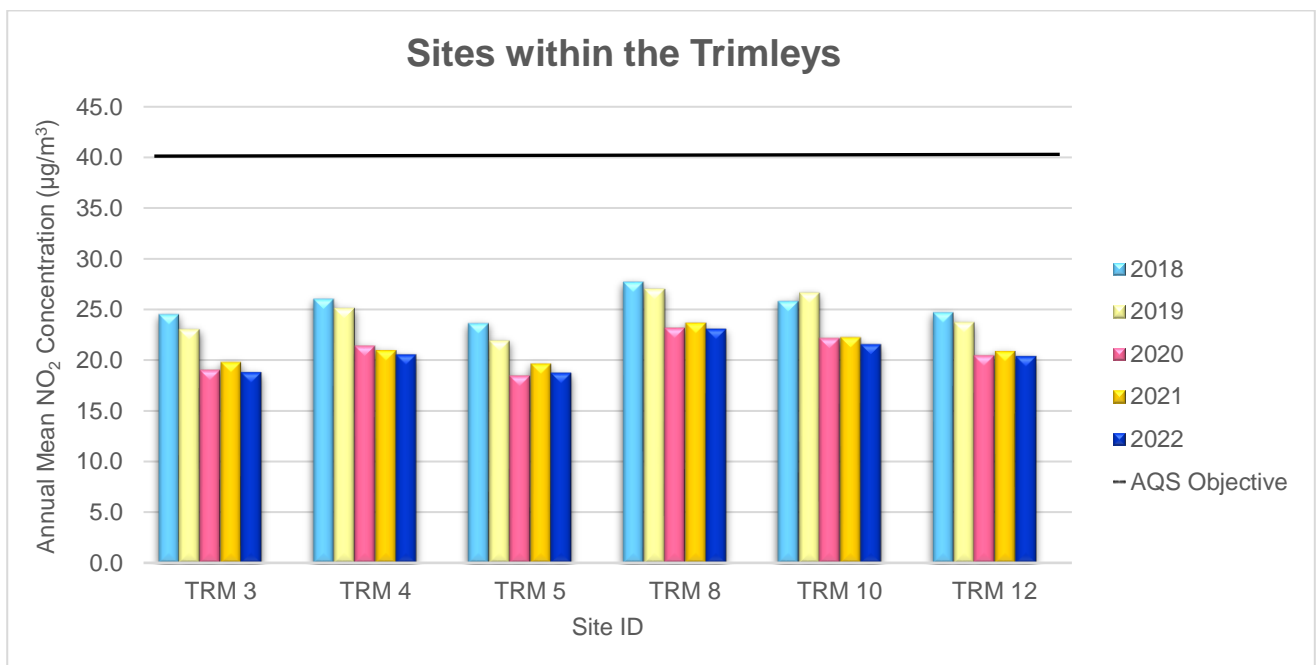
Trends in Annual Mean NO₂ Concentrations at monitoring sites within Oulton Broad, Beccles and Bungay



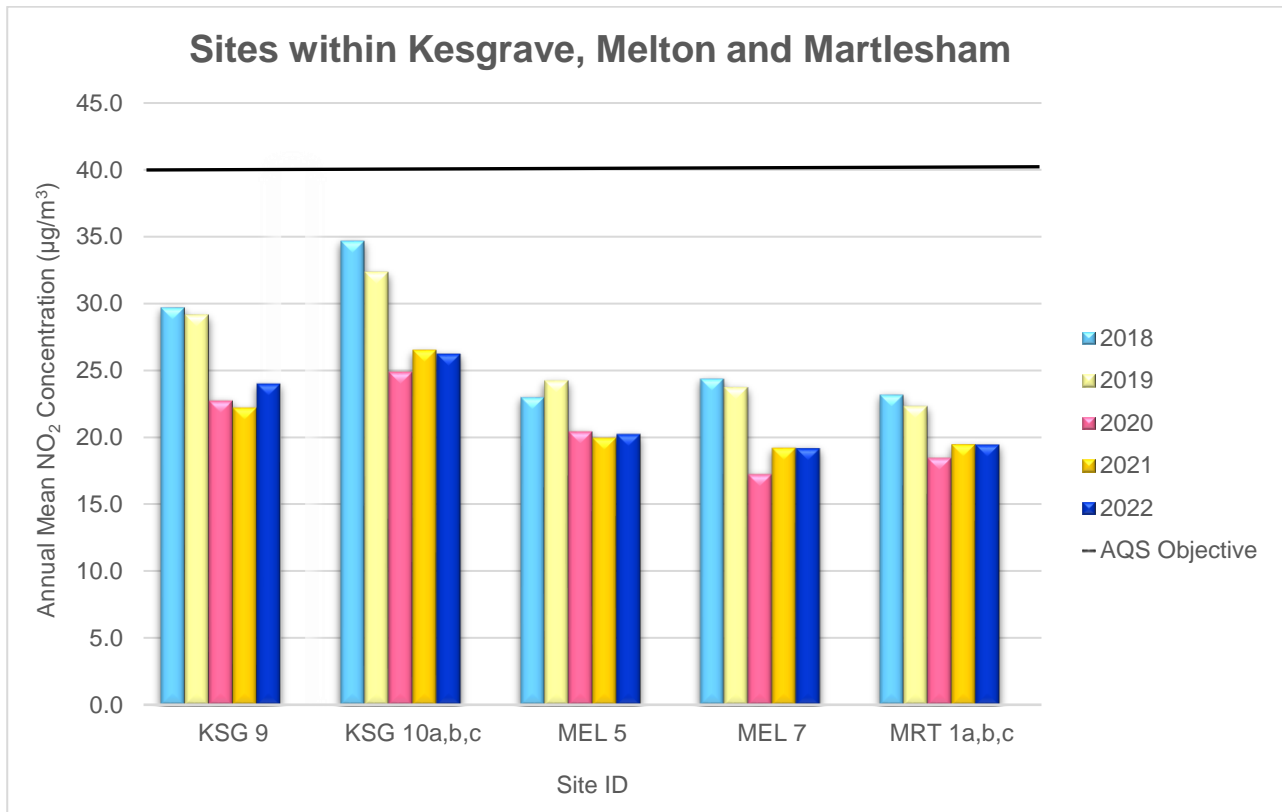
Trends in Annual Mean NO₂ Concentrations at monitoring sites within Felixstowe



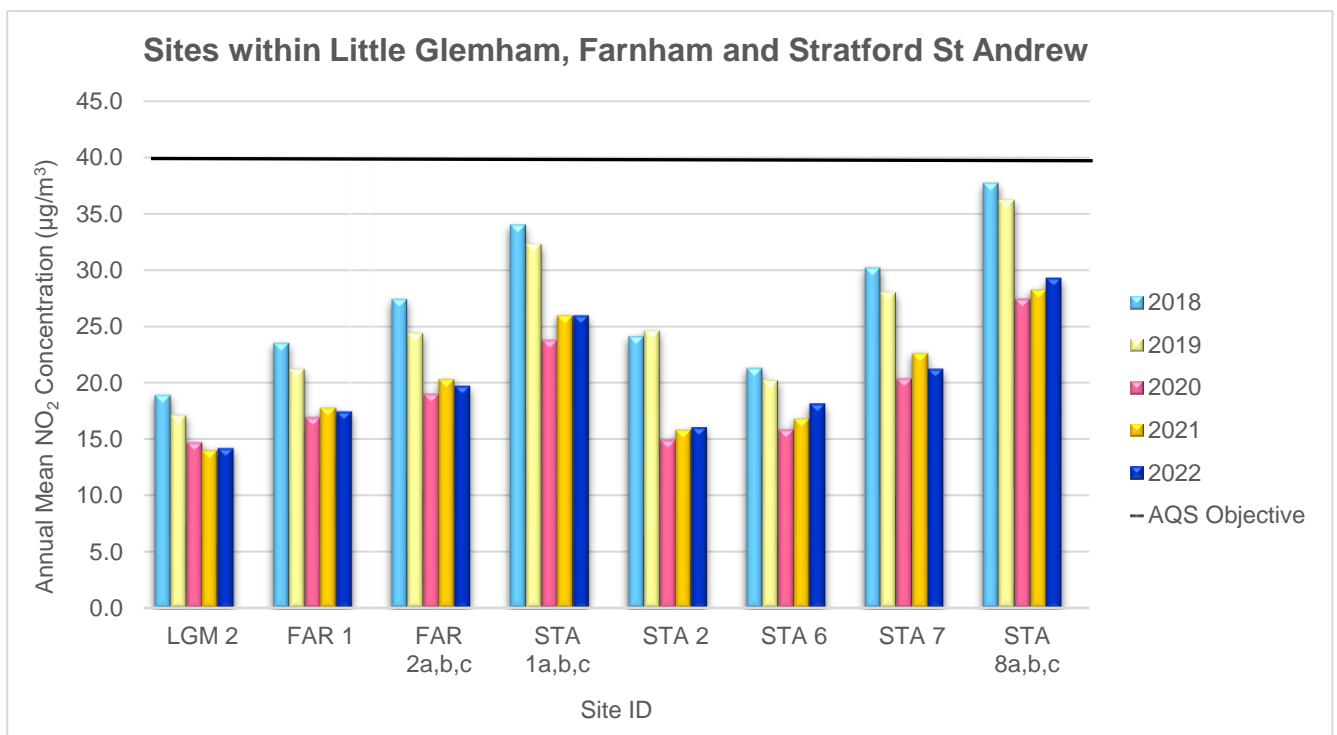
Trends in Annual Mean NO₂ Concentrations at monitoring sites within the Trimleys



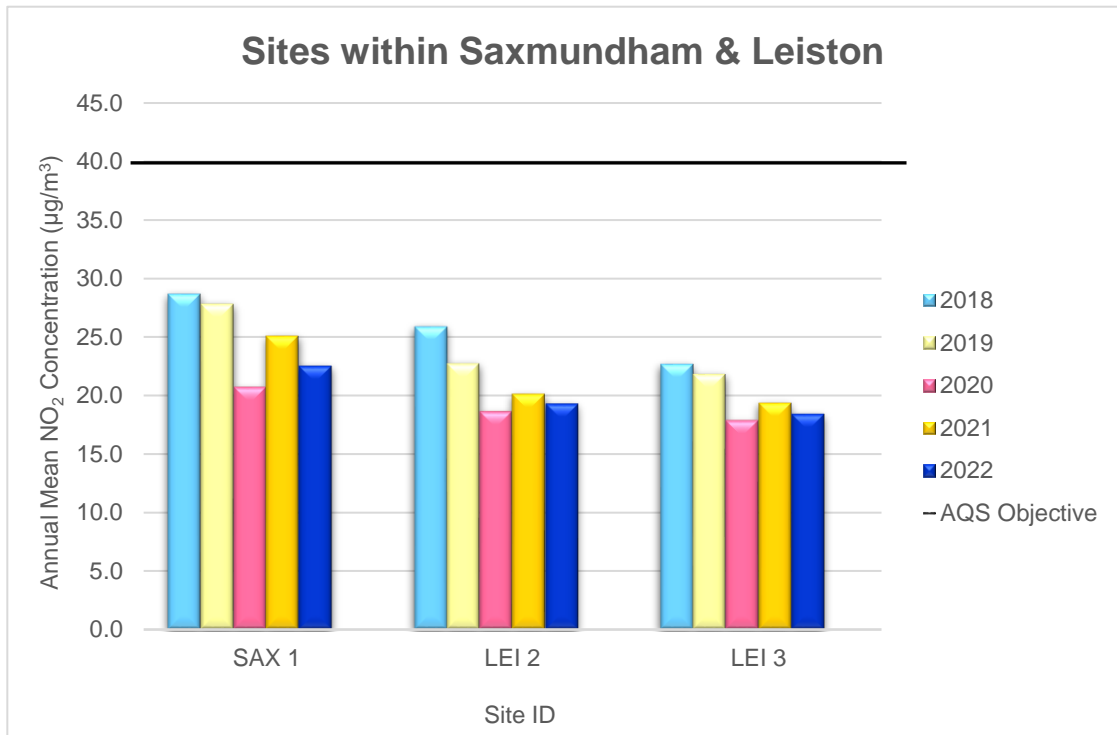
Trends in Annual Mean NO₂ Concentrations at monitoring sites within Kesgrave, Melton and Martlesham



Trends in Annual Mean NO₂ Concentrations at monitoring sites within Little Glemham, Farnham and Stratford St Andrew



Trends in Annual Mean NO₂ Concentrations at monitoring sites within Saxmundham and Leiston



Trends in Annual Mean NO₂ Concentrations at monitoring sites within Woodbridge

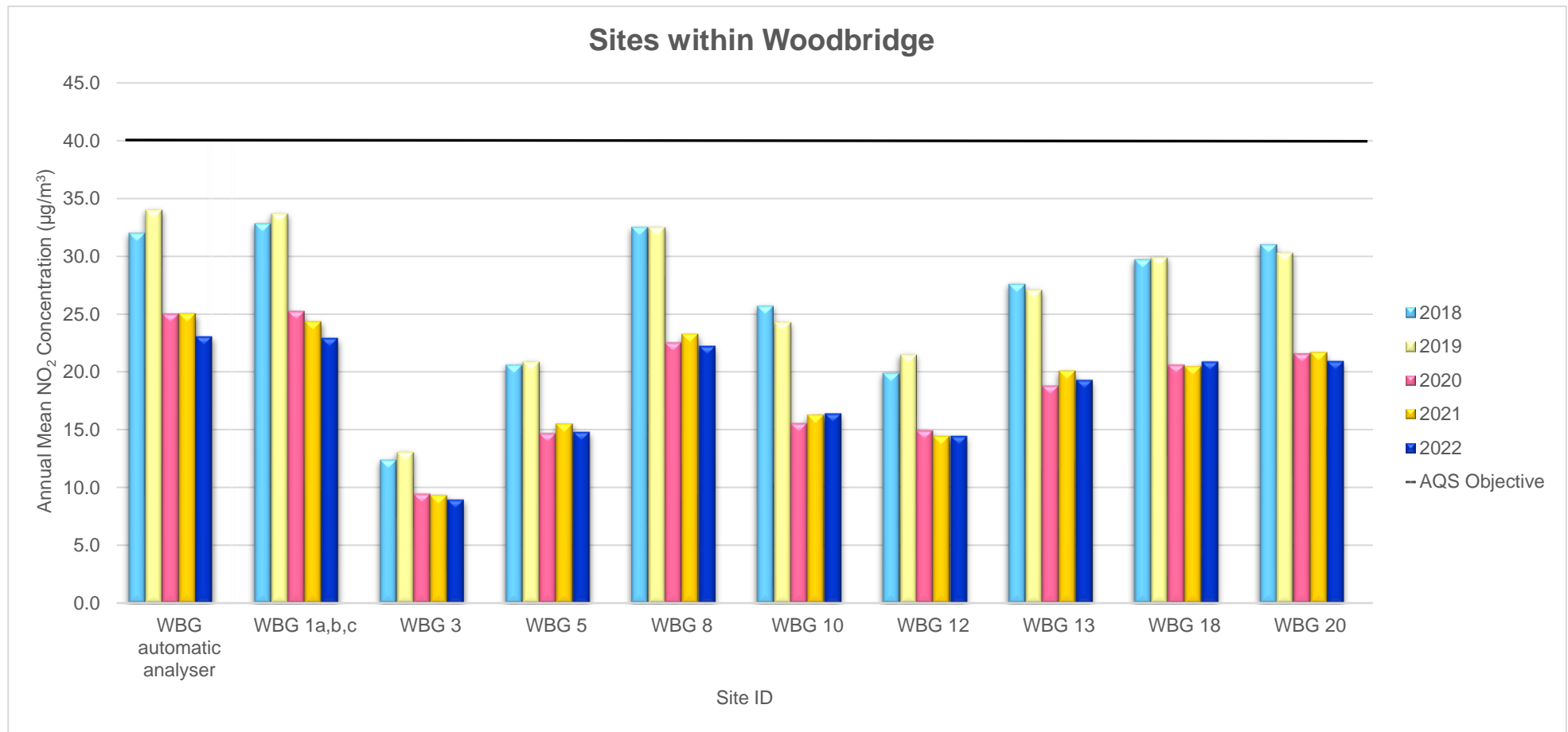


Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
Woodbridge	627596	249261	Roadside	99.59	99.59	0	0	0(122)	0	0

Notes:

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

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO₂ 2022 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (WBG = 0.72* All other sites = 0.76)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
LOW 1	654606	292625	48.0	29.2	44.8	27.3	30.4	29.1	29.2	25.2	24.9	32.8	#	35.1	32.4	24.6	-	
LOW 2	653209	293785	39.3	37.2	43.4	22.3	33.1	33.8	29.7	22.4	22.1	43.8	#	40.0	33.4	25.4	-	
LOW 3	654477	292395	33.3	20.7	37.8	26.2	21.2	21.0	20.6	20.2	22.2	18.7	#	26.6	24.4	18.6	-	
LOW 5	654065	294200	21.0	15.4	25.2	12.6	11.9	10.8	11.4	8.3	9.6	16.6	#	17.5	14.6	11.1	-	
LOW 6a	654690	292625	53.2	35.2	57.3	48.5	39.4	35.2	39.1	50.6	41.7	29.8	#	39.6	-	-	-	Triplicate Site with LOW 6a, LOW 6b and LOW 6c - Annual data provided for LOW 6c only
LOW 6b	654690	292625	56.9	35.9	55.6	49.6	41.7	35.3	41.1	52.0	41.4	33.0	#	44.8	-	-	-	Triplicate Site with LOW 6a, LOW 6b and LOW 6c - Annual data provided for LOW 6c only
LOW 6c	654690	292625	51.5	35.7	53.9	47.0	38.6	33.4	37.8	48.4	40.2	32.4	#	41.5	42.9	32.6	-	Triplicate Site with LOW 6a, LOW 6b and LOW 6c - Annual data provided for LOW 6c only
LOW 7	654671	292601	50.7	35.6	54.0	40.0	35.8	33.1	31.3	38.6	30.4	32.9	#	40.8	38.5	29.2	-	
LOW 8	654660	292571	32.4	23.5	36.8	29.3	24.9	20.5	21.2	24.0	23.6	24.7	#	27.8	26.2	19.9	-	
LOW 9	654723	292914	45.5	35.8	44.0	32.2	32.5	32.7	29.5	26.5	29.7	38.1	#	36.9	34.9	26.5	-	
LOW 11	652552	290427	31.9	23.4		29.4	28.1	30.0	29.9	30.7	29.1	26.9	#	28.4	28.8	21.9	-	
LOW 12	654200	294039	23.0	20.4	28.9	17.1	16.9	17.4	16.8	14.8	16.3	22.8	#	21.9	19.7	14.9	-	
LOW 13	654049	292963	35.9	28.0	39.4	23.8	22.0	18.7	22.3	19.7	23.2	24.6	#	29.9	26.1	19.9	-	
LOW 14	653228	293811	27.1	23.5	30.2	16.9	19.1	20.2	17.4	13.0	16.5	26.1	#	24.0	21.3	16.2	-	
LOW 15	653434	291689				21.6	24.8	20.6	20.3	19.3	17.4	22.6	#	22.3	21.1	18.7	-	
OBR 1	652046	292503	36.9	25.8	43.0	31.2	25.7	28.3	27.4	29.4	26.4	33.3	#	33.9	31.0	23.6	-	
OBR 2	652304	293021	29.0	21.7	39.9	26.4	25.0	22.2	23.2	24.9	21.9	24.0	#	26.4	25.9	19.7	-	

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 (WBG = 0.72* All other sites = 0.76)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
OBR 4	651869	292127	27.7	23.5	36.9	26.9	23.7	24.7	25.0	23.0	21.7	25.1	#	25.5	25.8	19.6	-	
OBR 5	652554	293282	29.7		29.5	21.4	21.1	17.7	16.5	20.5	16.0	21.7	#	24.9	21.9	16.6	-	
BEC 1	642615	289909	29.3	23.4	34.8	22.0	24.0	24.0	22.9	21.7	24.0	24.1	#	25.7	25.1	19.1	-	
BEC 3	642553	289922	51.0	34.3	43.0	31.9	34.6		30.2	31.1	34.5	35.0	#	38.8	36.4	27.7	-	
BEC 4	642564	289922	28.4	19.1	38.4	27.3	28.3	17.8	21.8	25.9	23.7	20.9	#	26.1	25.2	19.2	-	
BEC 5a	642592	289916	36.6	25.8	44.6	40.2	32.3	27.0	31.1	35.4	35.8	27.4	#	27.2	-	-	-	Triplicate Site with BEC 5a, BEC 5b and BEC 5c - Annual data provided for BEC 5c only
BEC 5b	642592	289916	32.8	20.8	52.1	41.1	43.1	26.7	31.8	37.0	36.1	25.4	#	31.6	-	-	-	Triplicate Site with BEC 5a, BEC 5b and BEC 5c - Annual data provided for BEC 5c only
BEC 5c	642592	289916	34.3	24.4	48.0	39.8	31.5	27.0	32.0	36.2	35.2	27.4	#	31.6	33.6	25.5	-	Triplicate Site with BEC 5a, BEC 5b and BEC 5c - Annual data provided for BEC 5c only
BEC 6	642158	290574	25.7	20.5	29.8	14.2	17.9	17.1	16.3	15.5	16.4	21.0	#	24.7	19.9	15.1	-	
BEC 7	644220	290213	26.6	16.6	28.5	18.6	17.5	14.0	15.0	16.8	15.2	19.6	#	24.6	19.4	14.7	-	
BUN 1	633670	289817	31.9	25.8	38.0	29.9	26.6	24.4	26.1	29.2	28.0	26.8	#	34.4	29.2	22.2	-	
BUN 2	633827	289480	48.3	37.6	40.4		34.8	35.4	33.6	31.9	36.1	41.0	#	40.8	38.0	28.9	-	
BLY 1	645183	275218	33.5	18.0	46.4	32.0	30.0	28.9	31.9	35.0	28.2	27.8	#	28.4	30.9	23.5	-	
FLX 12	630363	234890	35.0	32.3	19.0	24.6	26.5	21.7	21.5	18.0	21.4	27.6	#	31.0	25.3	19.2	-	
FLX 14	628604	232847	45.0	36.3	26.0	26.5	27.6	23.6	19.8	17.5	24.1	20.1	#	30.5	27.0	20.5	-	
FLX 17	628817	236323	28.8	24.8	26.9	22.6	19.7	20.2	21.4	21.0	19.3	25.8	#	26.9	23.4	17.8	-	
FLX 20	628669	233979	38.0	32.0	25.8	25.3	27.7	29.1	22.6	17.6	20.8	30.6	#	31.0	27.3	20.8	-	
FLX 21	629253	234431	36.2	28.4	27.8	22.5	21.1	17.1	17.3	12.9	15.9	17.1	#	22.3	21.7	16.5	-	
FLX 22	629172	233446	#	31.8	22.6	18.7	23.5	18.4	17.1	14.9	19.1	16.9	#	26.4	20.9	15.9	-	
FLX 23	628542	236592	25.3	22.4	39.1	36.2	23.0	28.4	32.5	36.3	24.9	25.2	#	22.5	28.7	21.8	-	

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 (WBG = 0.72* All other sites = 0.76)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
FLX 24	628358	234634	41.5	35.5	23.3	24.5	21.7	23.0	21.1	17.9	21.3	27.6	#	24.8	25.7	19.5	-	
FLX 26a	627959	234246	50.8	44.4	39.7	35.0	33.1	32.0	32.8	26.2	30.8	36.6	#	27.3	-	-	-	Triplicate Site with FLX 26a, FLX 26b and FLX 26c - Annual data provided for FLX 26c only
FLX 26b	627959	234246	55.2	46.1	45.8	41.6	35.6	34.3	34.6	31.8	33.2	36.1	#	33.7	-	-	-	Triplicate Site with FLX 26a, FLX 26b and FLX 26c - Annual data provided for FLX 26c only
FLX 26c	627959	234246	49.8	44.1	38.5	39.3	33.6	34.3	31.3	32.4	36.4	36.6	#	35.5	37.2	28.3	-	Triplicate Site with FLX 26a, FLX 26b and FLX 26c - Annual data provided for FLX 26c only
FLX 39	628760	236071	31.3	27.6	35.6	24.4	20.7	22.1	22.7	21.6	20.8	28.1	#	26.3	25.6	19.4	-	
TRM 3	627618	237092	35.6	26.1	32.1	23.8	22.2	21.5	24.5	21.7	24.1	16.1	#	25.1	24.8	18.8	-	
TRM 4	627613	237080	32.2	32.6	30.6	27.0	24.8	21.9	25.0	21.1	24.6	27.8	#	30.2	27.1	20.6	-	
TRM 5	627629	237078	30.6	22.9	28.2	26.7	21.1	20.2	25.6	23.4	22.1	25.1	#	25.7	24.7	18.8	-	
TRM 8	628270	236266	50.1	37.4	35.1	27.0	26.7	27.3	22.0	20.6	20.8	33.4	#	34.1	30.4	23.1	-	
TRM 10	629340	235737	45.0	38.4	31.3	25.0	25.3	22.5	27.0	18.2	23.1	32.5	#	24.3	28.4	21.6	-	
TRM 12	629641	235529	38.8	32.5	34.4	23.0	23.5	24.2	21.7	19.0	21.4	29.2	#	27.8	26.9	20.4	-	
KSG 9	621680	245796	47.3	40.0	32.0	20.9	31.3	29.3	29.4	22.4	25.4	37.4	#	31.9	31.6	24.0	-	
KSG 10a	621815	245785	46.2	33.4	33.5	32.9	32.3	30.9	33.0	34.7	34.4	29.0	#	35.6	-	-	-	Triplicate Site with KSG 10a, KSG 10b and KSG 10c - Annual data provided for KSG 10c only
KSG 10b	621815	245785	47.5	33.8	32.2	34.4	32.1	30.9	32.7	34.1	33.9	33.7	#	37.9	-	-	-	Triplicate Site with KSG 10a, KSG 10b and KSG 10c - Annual data provided for KSG 10c only
KSG 10c	621815	245785	46.3	34.7	38.8	33.5	30.4	28.9	35.4	34.9	34.0	35.1	#	27.0	34.5	26.2	-	Triplicate Site with KSG 10a, KSG 10b and KSG 10c - Annual data provided for KSG 10c only
MEL 5	628145	250417	35.7	33.4	26.5	22.7	24.9	20.0	24.1	22.1	24.8	28.2	#	30.5	26.6	20.2	-	
MEL 7	628177	250478	25.7	29.1	34.2	22.5	22.9	23.8	22.9	21.0	21.7	30.5	#	23.1	25.2	19.2	-	
MRT 1a	624633	245447	25.8	28.9	32.6	29.2	24.8	20.5	24.5	27.0	20.6	22.3	#	22.0	-	-	-	Triplicate Site with MRT 1a, MRT 1b and MRT 1c - Annual data provided for MRT 1c only
MRT 1b	624633	245447	26.7	30.7	36.7	28.2	25.5	21.0	23.3	27.4	21.0	24.2	#	24.0	-	-	-	Triplicate Site with MRT 1a, MRT 1b and MRT 1c - Annual data provided for MRT 1c only

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 (WBG = 0.72* All other sites = 0.76)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
MRT 1c	624633	245447	27.4	32.2	34.3	28.8	20.5	19.9	23.7	25.2	19.7	24.2	#	21.8	25.6	19.5	-	Triplicate Site with MRT 1a, MRT 1b and MRT 1c - Annual data provided for MRT 1c only
LGM 2	634051	258315	26.9	18.2	20.3	17.7	16.7	16.5	16.3	14.7	17.8	20.8	#	19.5	18.7	14.2	-	
FAR 1	636273	260134	25.9	20.3	28.7	24.9	21.1	20.4	20.6	25.5	21.8	20.2	#	23.0	22.9	17.4	-	
FAR 2a	636274	260120	33.0	20.5	33.1	23.7	23.7	22.4	24.8	27.4	26.3	27.3	#	19.5	-	-	-	Triplicate Site with FAR 2a, FAR 2b and FAR 2c - Annual data provided for FAR 2c only
FAR 2b	636274	260120	29.8	22.1	30.4	27.7	23.7	22.6	25.7	28.5	25.5	27.1	#	26.5	-	-	-	Triplicate Site with FAR 2a, FAR 2b and FAR 2c - Annual data provided for FAR 2c only
FAR 2c	636274	260120	34.3	23.1	29.8	27.7	24.7	23.3	22.7	26.3	25.8	23.4	#	22.8	25.9	19.7	-	Triplicate Site with FAR 2a, FAR 2b and FAR 2c - Annual data provided for FAR 2c only
STA 1a	635753	260002	36.3	30.3	33.7	31.5	29.4	29.9	34.9	38.4	29.8	20.8	#	34.2	-	-	-	Triplicate Site with STA 1a, STA 1b and STA 1c - Annual data provided for STA 1c only
STA 1b	635753	260002	39.3	31.3	42.0	35.2	30.8	33.2	36.3	41.2	32.3	35.6	#	36.9	-	-	-	Triplicate Site with STA 1a, STA 1b and STA 1c - Annual data provided for STA 1c only
STA 1c	635753	260002	38.4	30.5	39.0	32.6	30.6	31.2	36.5	41.7	35.3	36.6	#	30.2	34.1	25.9	-	Triplicate Site with STA 1a, STA 1b and STA 1c - Annual data provided for STA 1c only
STA 2	635732	259995	26.0	23.5	26.3	18.6	18.4	18.2	20.3	20.7	16.8	22.0	#	21.1	21.1	16.0	-	
STA 6	635794	260042	25.9	20.3	30.8	23.7	20.0	20.3	26.0	28.8	24.2	21.3	#	21.3	23.9	18.1	-	
STA 7	635736	259984	36.9	19.9	34.3	29.3	25.9	22.5	25.8	36.6	25.5	24.6	#	25.6	27.9	21.2	-	
STA 8a	635743	259992	37.3	27.9	29.4	37.3	31.9	34.0	39.9	44.3	35.3	37.8	#	37.7	-	-	-	Triplicate Site with STA 8a , STA 8b and STA 8c - Annual data provided for STA 8c only
STA 8b	635743	259992	31.4	37.1	48.1	39.6	35.0	38.7	43.1	48.5	35.6	42.6	#	37.4	-	-	-	Triplicate Site with STA 8a , STA 8b and STA 8c - Annual data provided for STA 8c only
STA 8c	635743	259992	39.6	32.8	49.7	41.7	35.4	37.9	44.3	50.9	23.0	44.6	#	40.5	38.5	29.3	-	Triplicate Site with STA 8a , STA 8b and STA 8c - Annual data provided for STA 8c only
THEB 1	643797	265815	26.9	16.8	26.2	19.6	15.9	17.3	17.6	18.0	18.3	21.4	#	22.2	20.0	15.2	-	
MID 1	641611	267791	14.4	11.1	16.9	11.3	9.3	8.5	9.2	7.7	9.1	8.4	#	7.4	10.3	7.8	-	
YOX 1	639647	268740	26.9	22.8	23.0	17.6	15.4	15.8	14.9	15.2	15.3	19.0	#	21.1	18.8	14.3	-	
YOX 2	639693	268778	7.6	13.5	18.1	11.7	11.2	11.7	12.1	11.6	11.3	15.2	#	15.4	12.7	9.6	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (WBG = 0.72* All other sites = 0.76)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
SAX 1	638683	263014	#	26.9	18.7	33.4	26.2	26.4	30.1	35.5	35.3	29.7	#	34.4	29.7	22.5	-	
LEI 2	644557	262464	31.8	28.2	19.1	24.4	24.3	25.6	26.1	23.7	23.0	27.9	#	#	25.4	19.3	-	
LEI 3	644325	262634	28.4	19.7	16.6	26.9	21.8	23.6	24.2	27.7	23.0	28.0	#	27.0	24.3	18.4	-	
LEI 4	644843	262483			13.2	14.7	12.0	13.5	12.7	10.2	11.2	16.3	#	14.2	13.1	10.0	-	
TUN 1	636110	255114	24.5	16.3	18.7	17.1	16.0	13.8	14.4	14.6	13.8	18.3	#	17.5	16.8	12.8	-	
LTB 1	624194	247362	29.1	25.6	19.2	18.2	20.4	20.7	20.3	16.3	19.0	29.8	#	24.0	22.1	16.8	-	
MLS 1	632734	257733	33.1	21.5	28.7	25.5	24.6	23.3	24.4	25.0	23.0	23.2	#	24.7	25.2	19.1	-	
WKM 1	630180	255718	23.0	16.3	23.0	16.5	15.4	15.5	15.5	14.1	14.1	18.1	#	20.1	17.4	13.2	-	
WKM 2	630164	255904	29.5	22.7	26.3	21.7	22.8	20.8	19.5	20.1	20.6	24.1	#	25.9	23.1	17.5	-	
WBG 1a	627596	249261	42.8	33.0	33.8	29.3	29.2	28.9	28.0	26.8	29.3	31.3	#	34.1	-	-	-	Triplicate Site with WBG 1a, WBG 1b and WBG 1c - Annual data provided for WBG 1c only
WBG 1b	627596	249261	45.2	32.7	34.2	30.9	28.8	27.6	28.5	28.1	27.8	35.0	#	31.5	-	-	-	Triplicate Site with WBG 1a, WBG 1b and WBG 1c - Annual data provided for WBG 1c only
WBG 1c	627596	249261	48.3	33.8	28.5	30.5	31.4	26.9	28.5	27.2	29.6	33.2	#	33.5	31.8	22.9*	-	Triplicate Site with WBG 1a, WBG 1b and WBG 1c - Annual data provided for WBG 1c only
WBG 3	626997	248488	16.4	14.8	13.8	12.8	9.9	7.9	10.0	8.7	12.6	14.2	#	15.5	12.4	8.9*	-	
WBG 5	627604	249243	23.5	19.6	29.2	21.6	16.4	15.5	17.5	21.6	16.6	20.9	#	23.5	20.5	14.8*	-	
WBG 8	627601	249283	42.0	33.3	31.6	27.2	29.5	28.8	28.5	25.8	28.4	27.1	#	36.9	30.8	22.2*	-	
WBG 10	627570	249240	28.9	22.9	29.0		19.1	20.0	22.5	24.6	19.5	22.2	#	18.6	22.7	16.4*	-	
WBG 12	627664	249203	30.6	23.5	18.7	16.5	19.1	18.1	15.7	12.8	16.3	23.6	#	25.6	20.0	14.4*	-	
WBG 13	627585	249239	33.6	26.7	33.3	25.8	22.9	21.4	25.5	24.2	25.0	26.1	#	29.9	26.8	19.3*	-	
WBG 18	627627	249339	33.0	23.2	33.4	30.3	25.6	25.9	30.0	31.2	26.3	28.6	#	31.1	29.0	20.9*	-	
WBG 20	627604	249295	41.8	31.9	26.2	24.4	27.2	27.7	25.2	21.7	25.7	32.3	#	35.0	29.0	20.9*	-	

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 (WBG = 0.72* All other sites = 0.76)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
WBG 24	626026	249631	26.8	24.8	37.5	29.1	22.3	24.2	28.4	28.3	22.8	34.6	#	29.2	28.0	20.2*	-	
WBG 25	626038	249389	22.7	26.2	22.0	20.3	21.8	19.7	19.1	16.2	22.2	26.3	#	26.0	22.0	15.9*	-	
WBG 26	626503	249331		18.3	16.1	15.3	13.8	12.9	13.3	10.8	13.3	18.6	#	16.6	14.9	10.7*	-	

- All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.
- Local bias adjustment factor 0.72 used for all WBG locations.
- National bias adjustment factor 0.76 used for all sites except WBG.
- Where applicable, data has been distance corrected for relevant exposure in the final column.
- East Suffolk Council confirm that all 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

* Local bias adjustment factor of 0.72 used for all WBG sites. All other sites have used National bias adjustment factor of 0.76.

Erroneous data removed from the table – explanation provided for all sites in Appendix C below.

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 East Suffolk Council During 2022

East Suffolk Council identified 2 new sources and 1 changed source relating to air quality during the reporting year of 2022. Details of each source and the assessment undertaken are provided below.

Small Waste Incineration Plant (SWIP) Permit variation application for Radical Waste Group Ltd, Beccles Business Park, Anson Way, Ellough, Beccles (permit ref 17/00005/SCH13)

Radical Waste Group Ltd were permitted by ESC in 2017 to operate a Small Waste Incineration Plant (SWIP) at Beccles Business Park in accordance with Schedule 13A of the Environmental Permitting Regulations (EPR) and Chapter IV of the Industrial Emissions Directive (IED). The original permit authorised the installation and running of a biomass boiler using wood chip as fuel.

In 2018, Radical Waste applied for a variation of the Permit to authorise the installation of a Refuse Derived Fuel (RDF) fired combined heat and power plant thereby changing the fuel used and the boiler type. The plant throughput will be 25,000 tonnes per year. This application was approved but the specified boiler was never installed.

This new variation application is for a different RDF fired biomass boiler make and model. There are no other changes proposed to the previously permitted activity. East Suffolk Council advised that the application should include an Air Quality (AQ) assessment to: *“...demonstrate that the proposed stack height is sufficient to minimise impacts on the environment and human health.”*

An Air Quality Assessment was undertaken by the applicant to model impacts of the proposed boiler on air quality, this includes a stack height analysis to determine the required stack/flue height in order to meet the air quality standards. The Air Quality

Assessment was undertaken using the stack emission dispersion model Breeze AERMOD and traffic emissions were modelled using ADMS Roads 4.1.

The application report contains information on the abatement measures proposed to reduce emissions resulting from combustion activities, together with information on regular servicing and preventative maintenance to be undertaken on the boiler to maintain efficient boiler operation. A Continuous Emission Monitoring System (CEMS) will be installed and operate on a 24-hour basis to measure NO_x, SO₂, HCl, O₂, TOC, particulates, CO, H₂O, temperature, pressure and flow so that emissions are known real-time.

The report concludes that the significance of the impacts on human and environmental receptors is determined to be 'negligible', and the stack height analysis concludes that 13m above the ground level is acceptable. It is considered that there will be no significant effect on emissions to air as a result of the proposed change in boiler. This includes any foreseeable emissions during start up, shut down and any breakdown / abnormal operation.

Planning application for a biomass boiler located at Ashe Row, Campsea Ashe (application reference DC/22/4337/FUL)

This application was to install a biomass boiler within the grounds of the auction house at Ashe Row, Campsea Ashe to create energy for the wider site of the auction house.

Additional information was requested by the ESC Environmental Protection Team in order to assess the boiler against the LAQM criteria and the calculated emissions were found to be satisfactory.

The application was approved with the following Planning Condition;

- The biomass boiler shall only use the fuel described within the supplied documents meeting the description therein.

Reason: In the interest of air quality - the application has been assessed on the information provided so that no greater pollution maybe caused which could harm the residential amenity of neighbours and the environment.

The Broads Authority planning application for 2 additional biomass boilers located at Nunnery Farm, Locks Lane, Shipmeadow, Beccles (application reference - BA/2022/0373/FUL)

This site is within The Broads Authority area and, as such, they are the Planning Authority with ESC being statutory consultees. The site has 6 existing biomass boilers which were historically screened by the ESC Environmental Protection Team against the LAQM criteria with emissions calculated to be within the Air Quality Standards for particulate matter. This most recent application (as above) was for an additional 2 biomass boilers on the site.

The biomass boilers are used to generate heat and energy. This heat is used for the farmhouse and buildings, and also to cure and dry wood and straw used both in the boilers and some to be sold off site.

The biomass boiler screening tool was used by ESC, together with advice obtained from the Defra helpdesk, to assess the impact of the additional 2 boilers to total emissions from the site. ESC Environmental Protection Team submitted a number of comments to the Broads Authority for this application which concluded that emissions from the boilers are considered to meet the requirements by Defra and a number of Conditions were placed on the approval by The Broads Authority to ensure emissions will be as screened.

Additional Air Quality Works Undertaken by East Suffolk Council During 2022

Following consistent reductions in NO₂ concentrations within the Woodbridge AQMA (AQMA Order No. 1 2006) since 2014, the decision was made to revoke this AQMA.

A draft Detailed Assessment presenting evidence to support the revocation of the Woodbridge AQMA was produced, taken to the Steering Group and finalised. This report was presented in the [ESC 2021 ASR](#). Defra appraisal of the Detailed Assessment confirmed revocation should be undertaken. Public consultation on the Detailed Assessment findings and the intention of ESC to revoke the AQMA ran from May to July 2022.

The Council received 9 responses to the consultation, the results were collated and placed on the ESC website at [Woodbridge AQMA Revocation Consultation Responses](#). All respondents were replied to individually.

On 29th September 2022 the AQMA declared at the Woodbridge Junction was revoked following the findings of the revocation assessment and the results of the public consultation. A copy of the Revocation Order is attached in Appendix F of this report.

QA/QC of Diffusion Tube Monitoring

Diffusion tubes are used widely by ESC. Diffusion tubes were deployed, and analysed, as set out in the Technical Guidance LAQM.TG22 paragraphs 7.197-7.234, and in accordance with the “NO₂ Diffusion Tubes for LAQM: Guidance Note for Local Authorities”.

Monitoring in 2022 was completed in adherence with the 2022 Diffusion Tube Monitoring Calendar, whereby all changeovers were completed within ± 2 days of the specified date.

The analytical laboratory used for supply and analysis of NO₂ diffusion tubes for ESC is SOCOTEC based in Didcot. The monitoring is undertaken using Palmes passive diffusion tubes exposed on a monthly basis. The tubes are prepared by spiking acetone:triethanolamine (TEA) (50:50) onto the grids prior to the tubes being assembled. The tubes are then desorbed with distilled water and the extract analysed using a segmented flow auto-analyser with ultraviolet detection.

The samples were analysed in accordance with SOCOTEC standard operating procedure ANU/SOP/1015, which meets the guidelines set out in Defra’s ‘Diffusion Tubes For Ambient NO₂ Monitoring practical Guidance’. The results were initially calculated assuming an ambient temperature of 11°C, and the reported values adjusted to 20°C to allow for direct comparison with EU limits.

The laboratory is formally accredited under UKAS and participates in the Defra run independent AIR-PT Scheme for NO₂ tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ concentrations reported are of a high calibre. The lab follows the procedures set out in the Harmonisation Practical Guidance.

AIR-PT combines two long running proficiency testing (PT) schemes: LGC Standards STACKS PT scheme and HSL Workplace Analysis Scheme for Proficiency (WASP) PT scheme. For NO₂ diffusion tubes, the test sample types used are called AIR NO₂ and these are distributed to participating laboratories on a quarterly basis. In the most recent AIR NO₂ PT rounds (September 2020 - June 2022) SOCOTEC Didcot achieved 100.0% satisfactory scores for all rounds with the exception of AR045 (July-August 2021), where they achieved 87.5%.

In the field inter-comparison exercise, diffusion tubes are co-located with an automatic analyser. Defra hosts a summary of the total number of recorded good/bad precision results for the last 3 years for all laboratories that currently provide diffusion tube analysis. This precision reflects the laboratory's performance and consistency in preparing and analysing the tubes. Precision summary results for SOCOTEC (using the 50% TEA in Acetone method) show 26 'Good' results and 0 'Bad' results for 2022.

At the end of the monitoring period any erroneous diffusion tube data was deleted (marked with # in Table B.1) and is summarised below;

- Data for January at site SAX 1 was classed as erroneous as this diffusion tube had been exposed for 2 months at separate sites due to a site operator error.
- All site data in November has been removed from the dataset due to a large number of sites with very low results, and others with lower than expected results. This was also noticed at 2 other Suffolk local authorities. Discussions with, and investigations by, the laboratory did not determine any error with the tube analysis and site operator error has also been ruled out. We are unsure what occurred. To err on the side of caution we have removed all November results from the data set.
- Data for December at LEI 2 was very low when compared with other months in 2022 and across past years. Accuracy was therefore in question and this data was removed from the dataset.

The annual average was then calculated for each site. For any sites with data capture less than 75% (9 months) the results were then annualised. As diffusion tubes tend to under or over read this can result in low accuracy and it is necessary to bias correct the results based upon local or national collocation studies with chemiluminescent analysers. Bias correction was undertaken after annualisation of the data. Distance correction was then looked at but was not required with all concentrations below $36\mu\text{g}/\text{m}^3$ at all relevant receptors. Further details of all stages are outlined in the following text.

Diffusion Tube Annualisation

One diffusion tube monitoring location within ESC (LOW 15) recorded data capture of <75% as the site was not put in place until April 2022. For this site, the mean of the 2022 data has been "annualised" using the procedure set out in LAQM.TG22 Box 7.10. The annualisation was carried out within the Defra Diffusion Tube Data Processing Tool. The method is as follows:

- Identify 2-4 nearby, long term, continuous monitoring sites, ideally those forming part of the national network. These should be background sites (Urban background, Suburban or Rural) to avoid any very local effects that may occur at Urban Centre, Roadside or Kerbside sites, and should wherever possible lie within a radius of about 50 miles. Three sites have been used here; Wicken Fen (Rural Background), St. Osyth (Rural Background) and Norwich Lakenfields (Urban background). These sites are part of the UK Automatic Urban and Rural Network (AURN) and are the closest sites to us with sufficient data capture for the year in question;
- Obtain the unadjusted (not corrected for bias) annual mean (A_m) for the calendar year for these sites;
- Work out the period mean (P_m) for the period of interest with diffusion tube results at each of the comparison sites separately;
- Calculate the ratio of the annual mean to the period mean ($A_m:P_m$) for each period at each location;
- Calculate the average of these ratios (R_a). This is the adjustment factor;
- Multiply the measured period mean (M) for the short-term monitoring location by the adjustment factor (R_a) to give the estimate of the annual mean for 2022.

Data used for the calculations are set out in Table C.1 below.

Table C. 1 – Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$)

Site ID	Annualisation Factor St Osyth	Annualisation Factor Wicken Fen	Annualisation Factor Norwich Lakenfields	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
LOW 15	1.1820	1.1831	1.1403	1.1684	21.1	24.7

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 a reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor

based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Historically, ESC has used the local bias adjustment factor obtained from the Woodbridge co-location study (using the triplicate diffusion tube site WBG 1a,b,c) to adjust annual mean NO₂ concentrations from diffusion tube sites within the Woodbridge area only. This location is unusual, being a street canyon: it is considered representative of the other diffusion tube monitoring sites within Woodbridge, but not necessarily of diffusion tube locations elsewhere within the district. The national bias adjustment factor has then been used for all other locations in the district. In 2022 the application of both a local and national bias adjustment factor has also been applied to the diffusion tube data as per previous years.

ESC has applied a local bias adjustment factor of 0.72 to the 2022 monitoring data for sites in Woodbridge only, and a national bias adjustment factor of 0.76 to the 2022 monitoring data for all other sites within the district. Version 03/23 of the national diffusion tube bias adjustment factor spreadsheet was used. A copy of the output from the spreadsheet can be seen in Figure C.1. A summary of bias adjustment factors used by ESC over the past five years is presented in Table C. **2– Bias Adjustment Factor**

Table C.3 presents the calculation of the Woodbridge diffusion tube sites local bias adjustment factor.

Figure C. 1 – National Bias Adjustment Factor Calculation (Version 03/23) for SOCOTEC Didcot in 2022

National Diffusion Tube Bias Adjustment Factor Spreadsheet					Spreadsheet Version Number: 03/23					
Follow the steps below in the correct order to show the results of relevant co-location studies Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet This spreadsheet will be updated every few months; the factors may therefore be subject to change. This should not discourage their immediate use.								This spreadsheet will be updated at the end of June 2023 LAQM Helpdesk Website		
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.					Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.					
Step 1:		Step 2:		Step 3:		Step 4:				
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List		Select a Year from the Drop-Down List		Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution . Where there is more than one study , use the overall factor shown in blue at the foot of the final column.				
If a laboratory is not chosen, we have no data for this laboratory.		If a preparation method is not chosen, we have no data for this method at this laboratory.		If a year is not chosen, we have no data.		If you have your own co-location study then see footnote 2. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953				
Analysed By ¹	Method ²	Year ³	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision ⁴	Bias Adjustment Factor (A) (Cm/Dm)
Socotec Didcot	50% TEA in acetone	2022	UB	Torfaen County Borough Council	13	13	10	33.4%	G	0.75
Socotec Didcot	50% TEA in acetone	2022	R	Bridgend Council	12	37	27	40.6%	G	0.71
Socotec Didcot	50% TEA in Acetone	2022	R	Cardiff Council / Shared Regulatory Services	11	42	33	27.3%	G	0.79
Socotec Didcot	50% TEA in Acetone	2022	R	Dacorum Borough Council	12	24	18	30.8%	G	0.76
Socotec Didcot	50% TEA in Acetone	2022	UB	Gravesham Borough Council	11	22	18	19.6%	G	0.84
Socotec Didcot	50% TEA in Acetone	2022	UB	Gravesham Borough Council	11	26	22	17.0%	G	0.85
Socotec Didcot	50% TEA in acetone	2022	R	Kingston Upon Hull City Council	12	30	23	27.3%	G	0.78
Socotec Didcot	50% TEA in acetone	2022	UB	Kingston Upon Hull City Council	12	24	18	35.0%	G	0.74
SOCOTEC Didcot	50% TEA in acetone	2022	UB	City Of York Council	12	16	13	31.6%	G	0.76
SOCOTEC Didcot	50% TEA in acetone	2022	R	City Of York Council	12	25	19	28.7%	G	0.78
SOCOTEC Didcot	50% TEA in acetone	2022	R	City Of York Council	11	23	17	37.2%	G	0.73
SOCOTEC Didcot	50% TEA in acetone	2022	R	City Of York Council	11	37	27	37.6%	G	0.73
SOCOTEC Didcot	50% TEA in acetone	2022	R	East Suffolk Council	11	32	23	38.6%	G	0.72
SOCOTEC Didcot	50% TEA in acetone	2022	R	Ipswich Borough Council	11	42	28	50.4%	G	0.66
SOCOTEC Didcot	50% TEA in acetone	2022	KS	Marleybone Road Intercomparison	12	60	42	40.7%	G	0.71
SOCOTEC Didcot	50% TEA in acetone	2022	R	North East Lincolnshire Council	10	46	31	49.4%	G	0.67
SOCOTEC Didcot	50% TEA in acetone	2022	R	North East Lincolnshire Council	10	28	27	3.7%	G	0.96
SOCOTEC Didcot	50% TEA in acetone	2022	R	Wrexham County Borough Council	12	16	14	15.5%	G	0.87
SOCOTEC Didcot	50% TEA in Acetone	2022	R	Horsham District Council	11	25	22	14.4%	G	0.87
SOCOTEC Didcot	50% TEA in acetone	2022	R	Leeds City Council	12	40	29	37.8%	G	0.73
SOCOTEC Didcot	50% TEA in acetone	2022	KS	Leeds City Council	11	33	23	44.6%	G	0.69
SOCOTEC Didcot	50% TEA in acetone	2022	R	Leeds City Council	12	43	34	26.0%	G	0.79
SOCOTEC Didcot	50% TEA in acetone	2022	R	Leeds City Council	11	41	30	34.2%	G	0.75
SOCOTEC Didcot	50% TEA in acetone	2022	R	Leeds City Council	12	30	22	36.3%	G	0.73
SOCOTEC Didcot	50% TEA in acetone	2022	UC	Leeds City Council	12	30	22	34.1%	G	0.75
SOCOTEC Didcot	50% TEA in Acetone	2022	R	Thanet District Council	12	23	17	29.1%	G	0.77
Overall Factor⁵ (26 studies)								Use		0.76

Table C. 2– Bias Adjustment Factor

Monitoring Year	Woodbridge Area		All Other Areas		
	Local or National	Adjustment Factor	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	Local	0.72	National	03/22	0.76
2021	Local	0.80	National	06/22	0.78
2020	Local	0.84	National	06/21	0.76
2019	Local	0.84	National	03/20	0.75
2018	Local	0.76	National	03/19	0.76

Table C.3 – Local Bias Adjustment Calculation

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	11				
Bias Factor A	0.72 (0.69 - 0.77)				
Bias Factor B	38% (30% - 46%)				
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	31.8				
Mean CV (Precision)	4.1%				
Automatic Mean ($\mu\text{g}/\text{m}^3$)	23.0				
Data Capture	99%				
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	23 (22 - 24)				

Notes:

A single local bias adjustment factor has been used to bias adjust the 2022 diffusion tube results for all diffusion tube locations in Woodbridge only.

NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO₂ monitoring locations within East Suffolk Council required distance correction during 2022.

QA/QC of Automatic Monitoring

NO₂ concentrations were monitored by a chemiluminescence analyser in Woodbridge in ESC during 2022. Quality assurance of the data from the continuous monitoring station was carried out by Ricardo-AEA following the same procedures used for sites within the Government's Automatic Urban and Rural Network (AURN). Calibrations were undertaken every 3-4 weeks by a Council Officer (Local Site Operator). The procedures adopted for

the calibrations were modelled on those developed by AEA Energy & Environment for use in the national monitoring networks.

The calibrations were undertaken using certified calibration gas provided by BOC with traceability to National Metrology Standards obtained via regular the United Kingdom Accreditation Scheme (UKAS) Quality Control Audits carried out by Ricardo Energy & Environment . The audits provide a range of information that is utilised within the data management process for the data sets.

Audit tests are undertaken once a year by Ricardo Energy & Environment. They include accredited audit zero and span calibrations, linearity, NO_x converter efficiency, flow and leak checks as well as checks of the instruments sampling system. Data presented in this report have been fully ratified by Ricardo Energy & Environment.

The analyser is routinely serviced biannually (July and December 2022) by Matts Monitors Ltd.

The data set was screened, scaled and validated using all available routine site calibrations, audit results and service engineer records. A final process of data ratification ensures that the data provide the most accurate record of the pollution concentrations across the measurement period. The data management process adopted is that evolved and implemented by Ricardo Energy & Environment within the data management programme of the AURN UK national monitoring network. This process is expected to deliver data sets that meet the EU Data Quality Objective of a measurement uncertainty of better than 15%.

Live and historic monitoring data can be found on the Air Quality England Website [Air Quality England Website - ESC](#)

Automatic Monitoring Annualisation

All automatic monitoring locations within ESC recorded data capture of greater than 75% therefore annualization of monitoring data was not required.

NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the NO₂ fall-off with distance calculator available on the LAQM

Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

No automatic NO₂ monitoring locations within ESC required distance correction during 2022.

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

Figure D.1: Map of diffusion tubes: Lowestoft and Oulton Broad – LOW 1, LOW 2, LOW 3, LOW 5, LOW 6ABC, LOW 7, LOW 8, LOW 9, LOW 11, LOW 12, LOW 13, LOW 14, LOW 15, OBR 1, OBR 2, OBR 4, and OBR 5.

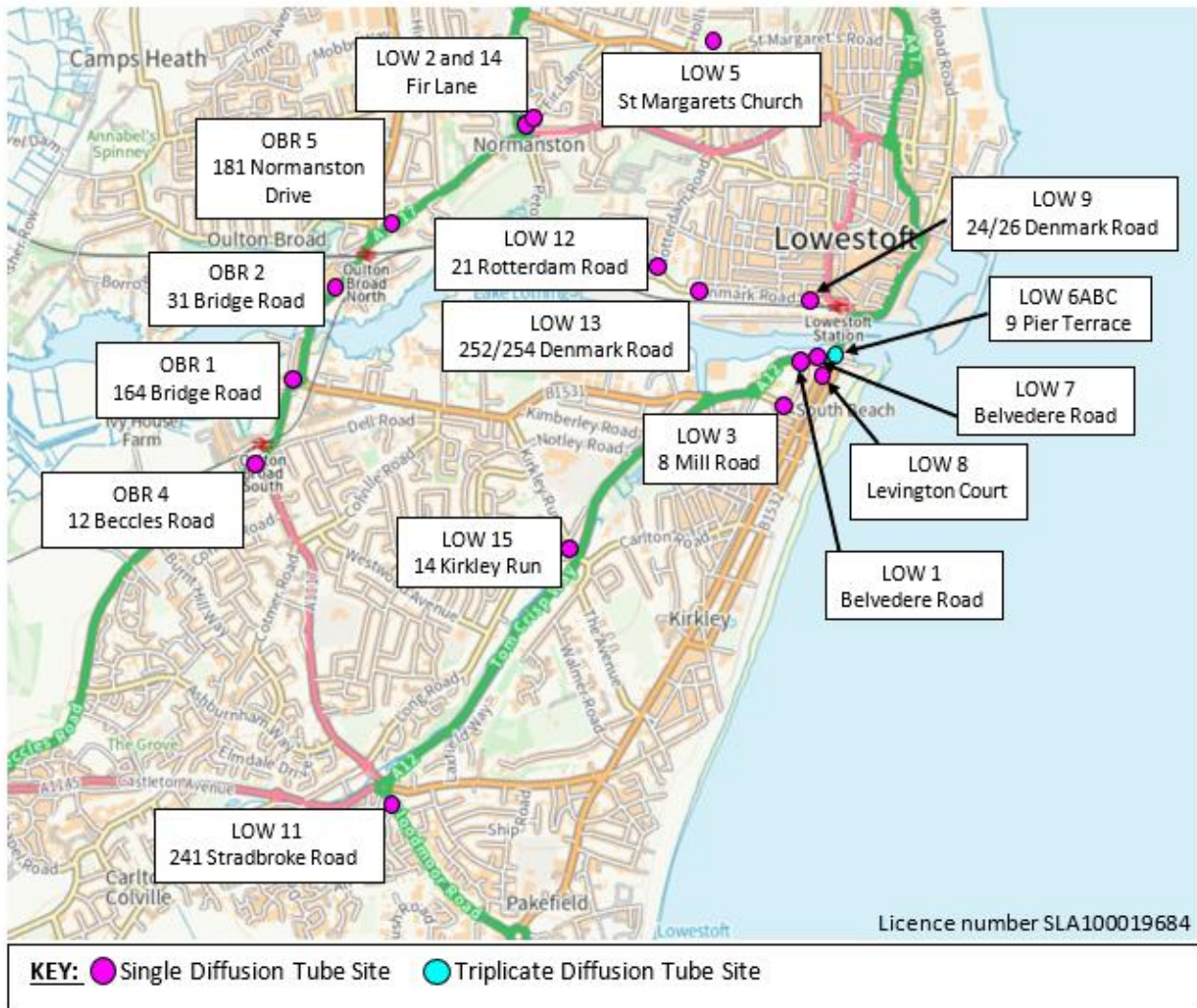


Figure D.2: Map of diffusion tubes: Lowestoft – LOW 1, LOW 2, LOW 3, LOW 5, LOW 6ABC, LOW 7, LOW 8, LOW 9, LOW 12, LOW 13, LOW 14 and LOW 15

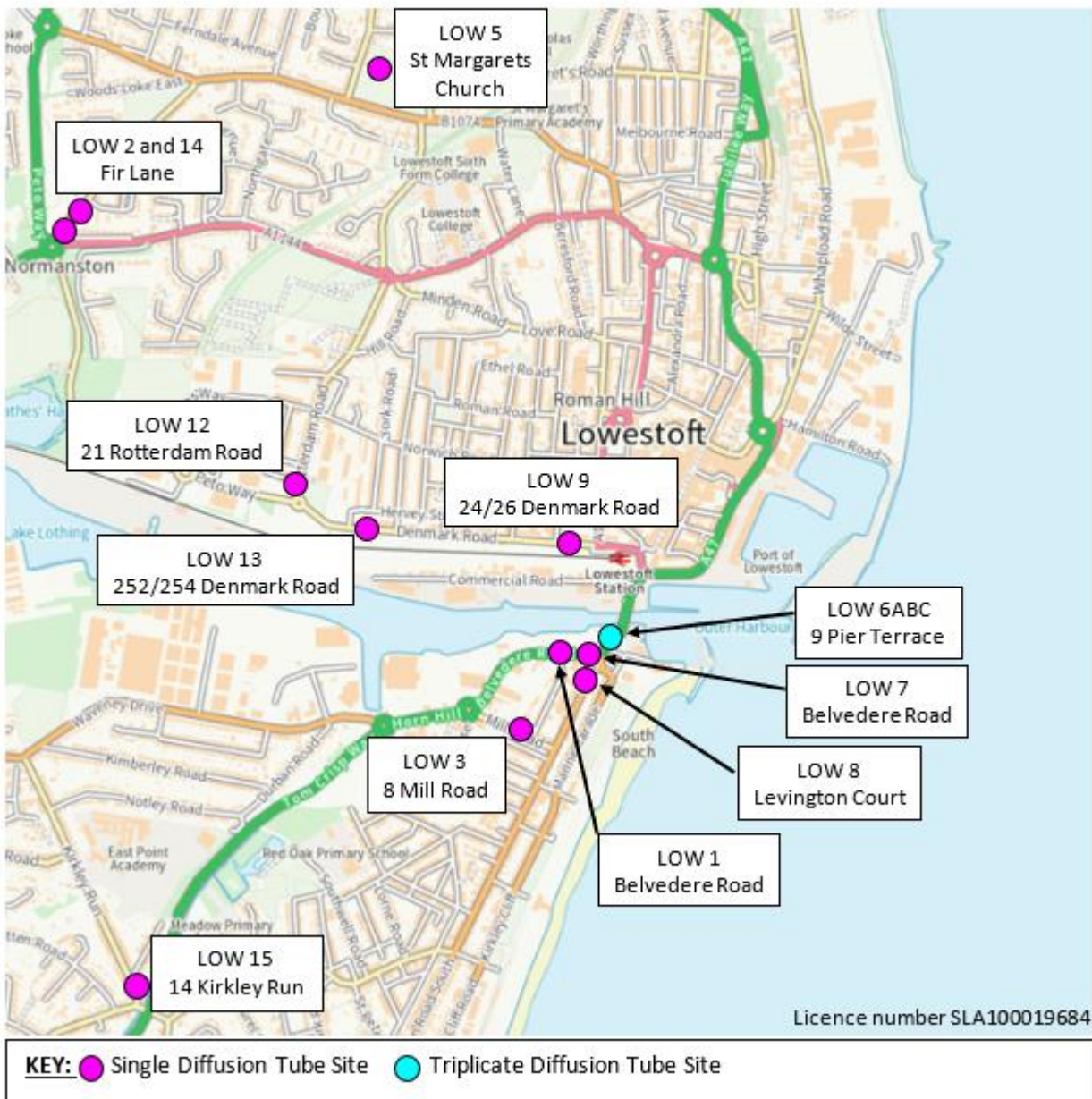


Figure D.3: Map of diffusion tubes: Lowestoft – LOW 11 and LOW 15



Figure D.4: Map of diffusion tubes: Oulton Broad – OBR 1, OBR 2, OBR4 and OBR 5

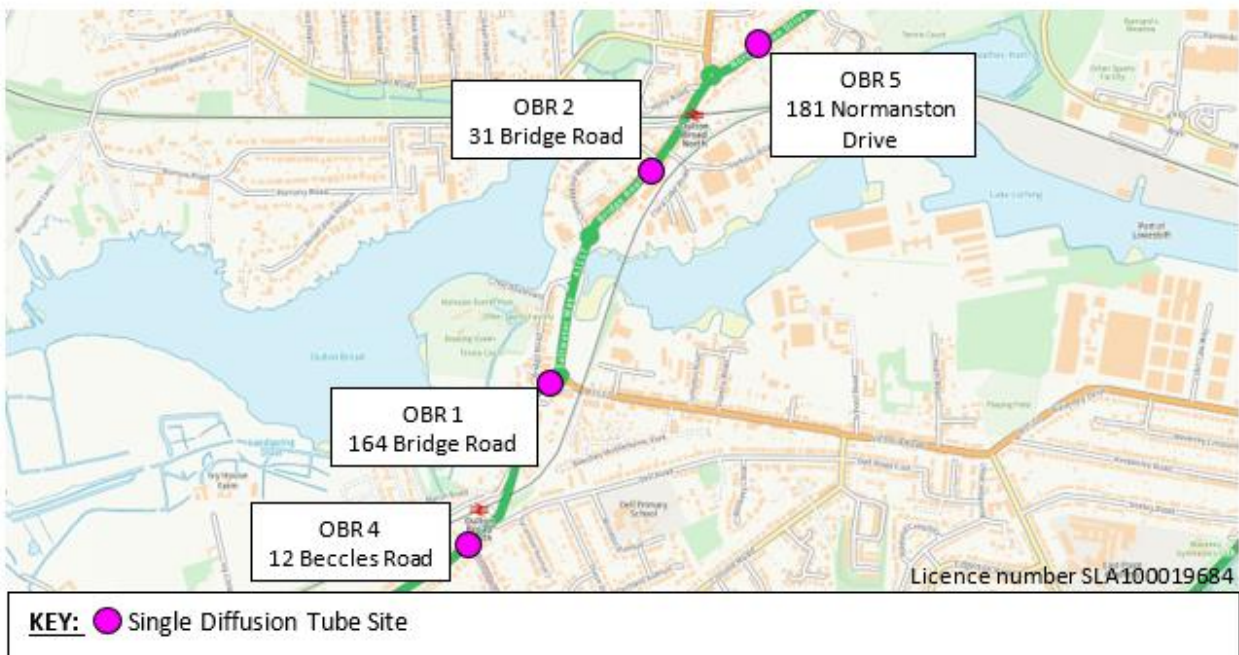
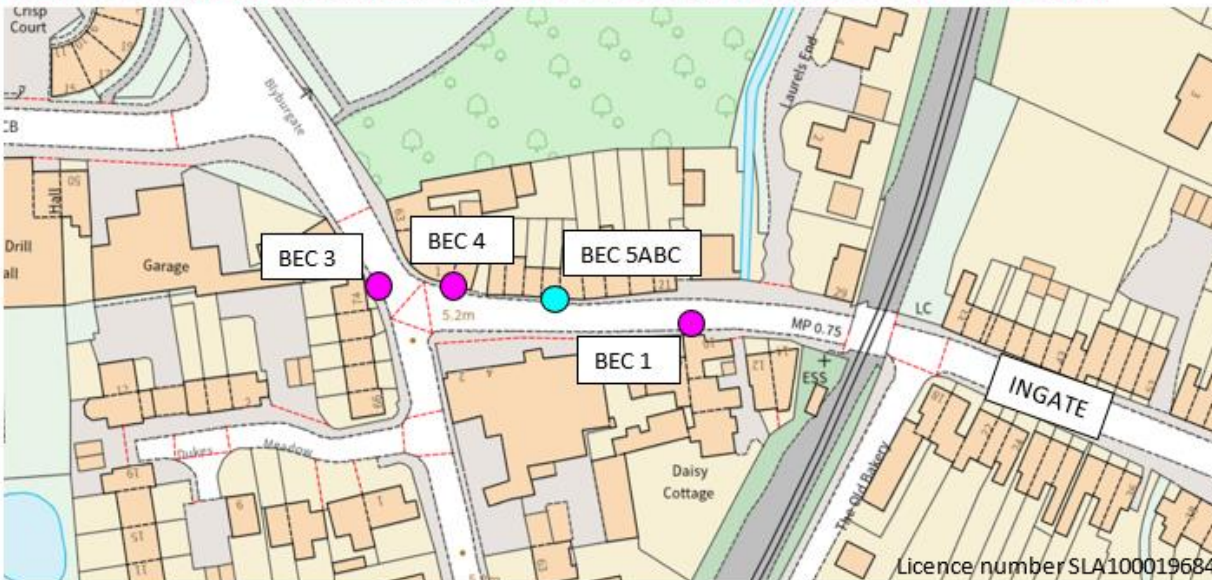


Figure D.5: Map of diffusion tubes: Beccles – BEC 1, BEC 3, BEC 4, BEC5ABC, BEC 6 AND BEC 7



KEY: ● Single Diffusion Tube Site ● Triplicate Diffusion Tube Site

Figure D.6: Map of diffusion tubes: Beccles – BEC 1, BEC 3, BEC 4 AND BEC 5ABC



KEY: ● Single Diffusion Tube Site ● Triplicate Diffusion Tube Site

Figure D.7: Map of diffusion tubes: Bungay – BUN 1 and BUN 2

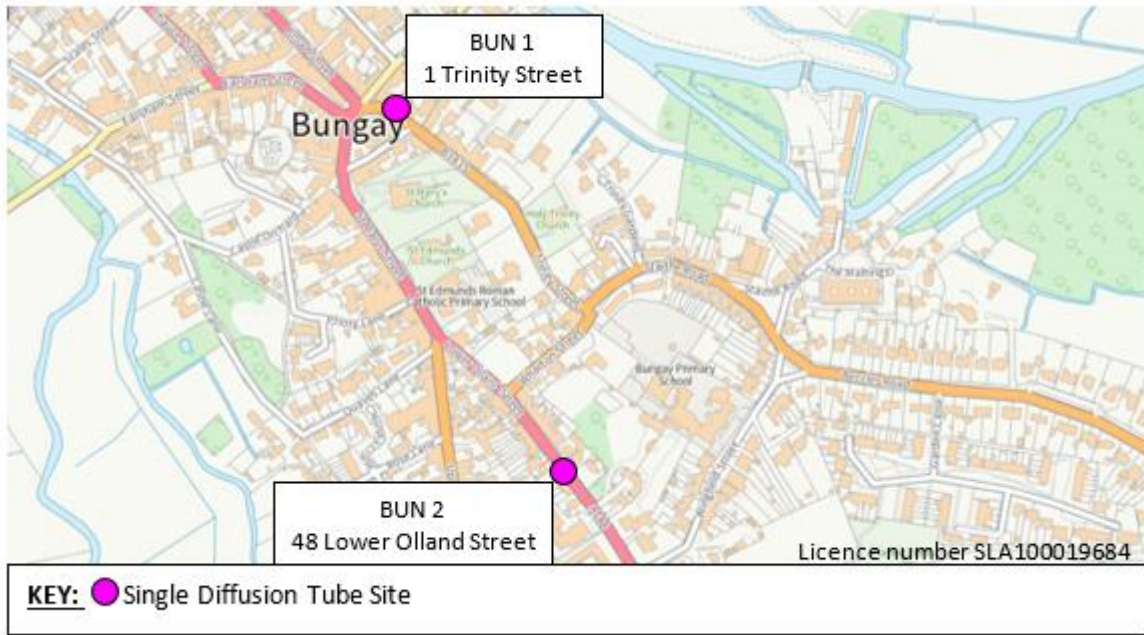


Figure D.8: Map of diffusion tubes: Blythburgh - BLY 1

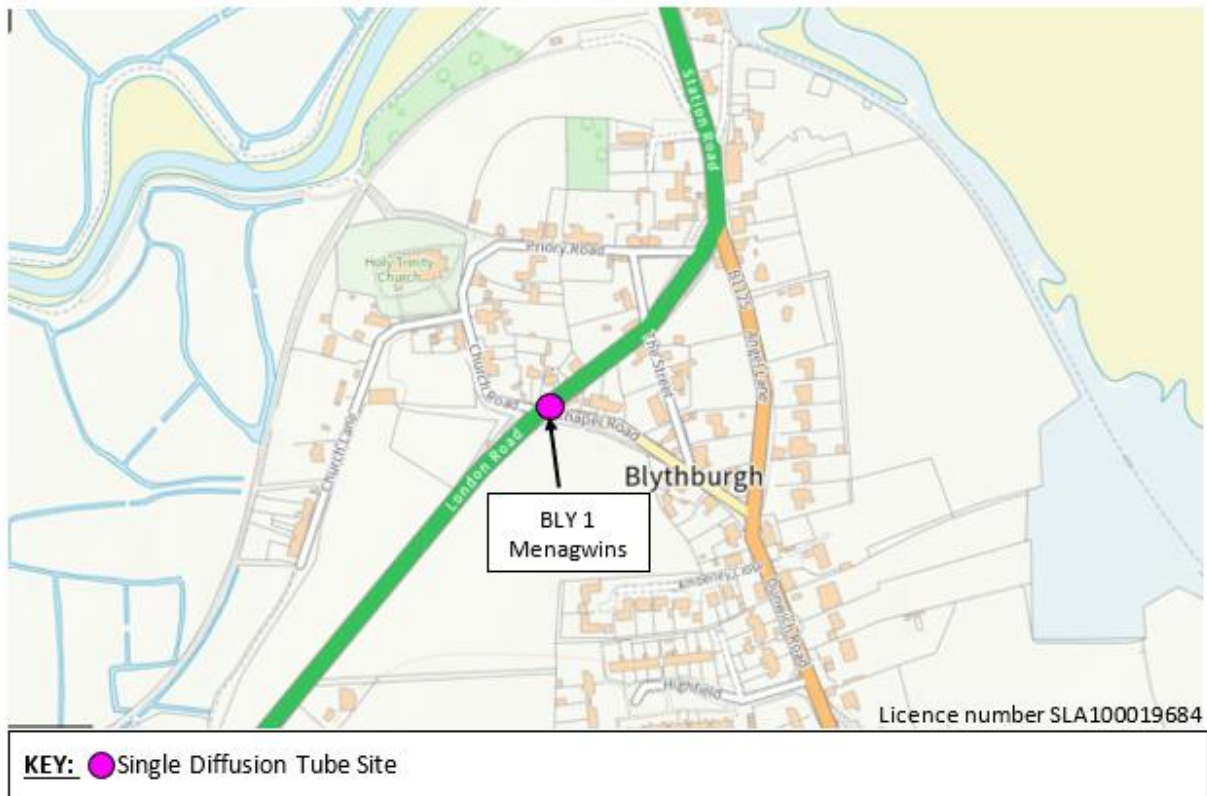


Figure D.9: Map of diffusion tubes: Felixstowe – FLX 12, FLX 14, FLX 20, FLX 21, FLX 22, FLX 24 and FLX 26ABC

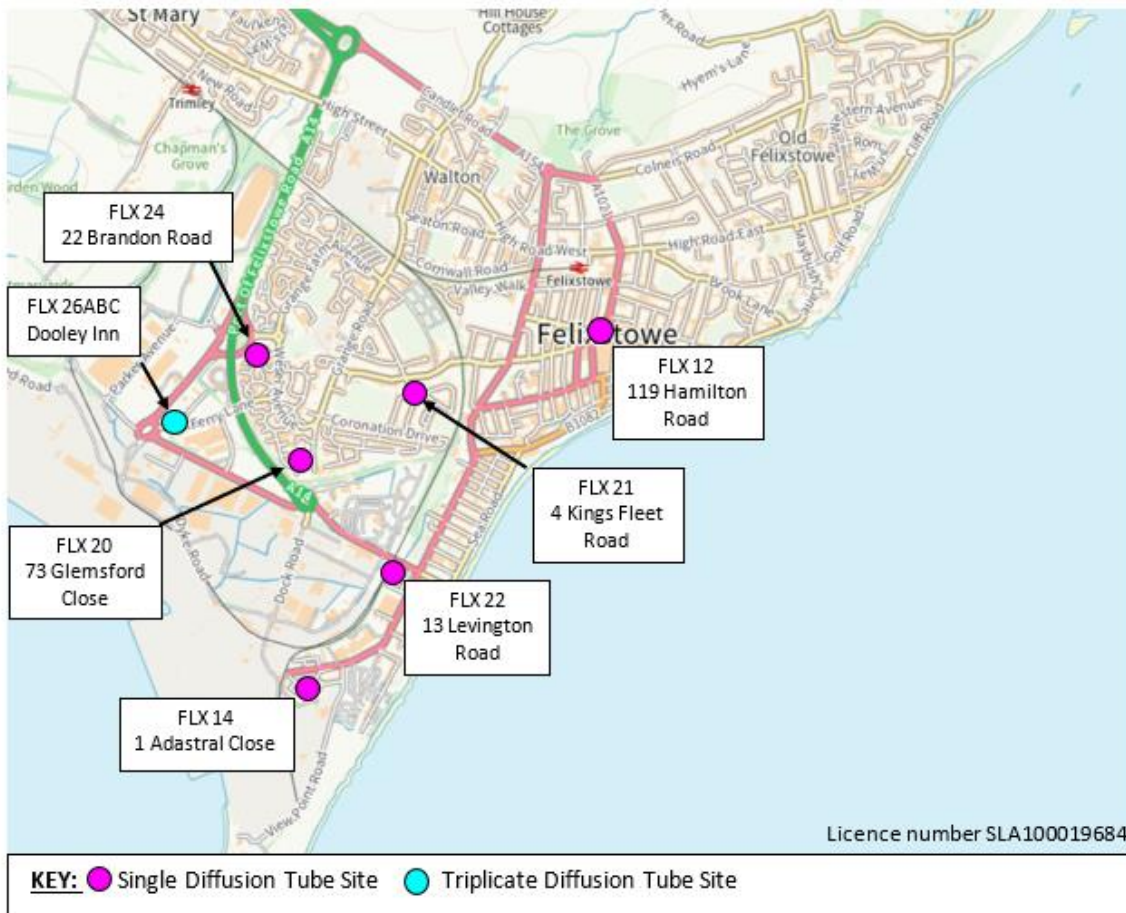


Figure D.10: Map of diffusion tubes: Felixstowe and Trimley St Mary – TRM 3, TRM 4, TRM 5, TRM 8, FLX 23 and FLX 39

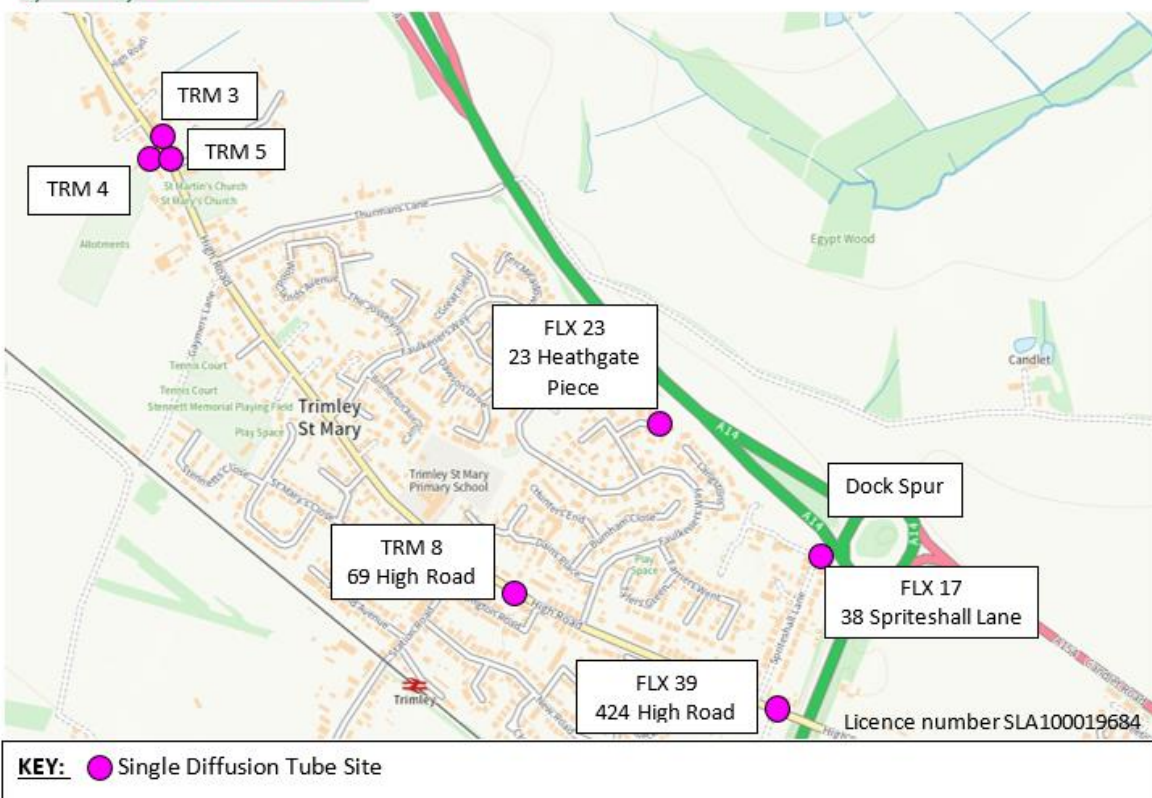


Figure D.11: Map of diffusion tubes: Trimley St Mary – TRM 3, TRM 4 and TRM 5

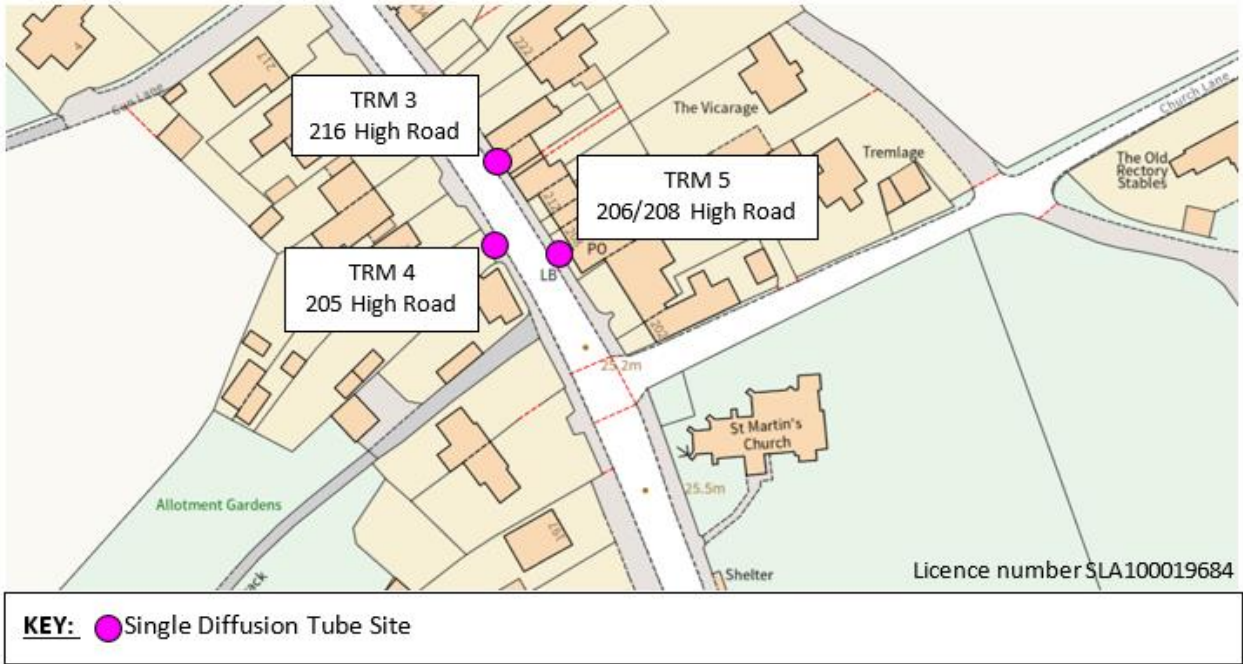


Figure D.12: Map of diffusion tubes: Felixstowe and Trimley St Mary – TRM 10, TRM 12, FLX 17 and FLX 39

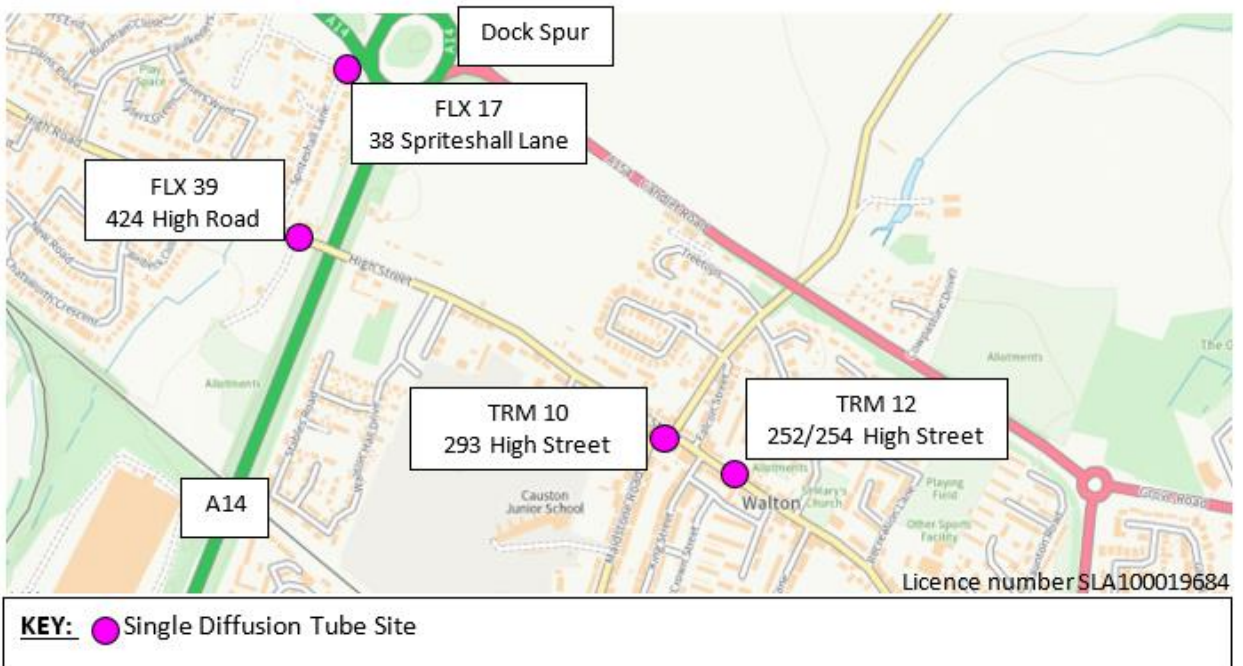


Figure D.13: Map of diffusion tubes: Kesgrave – KSG 9 and KSG 10ABC.

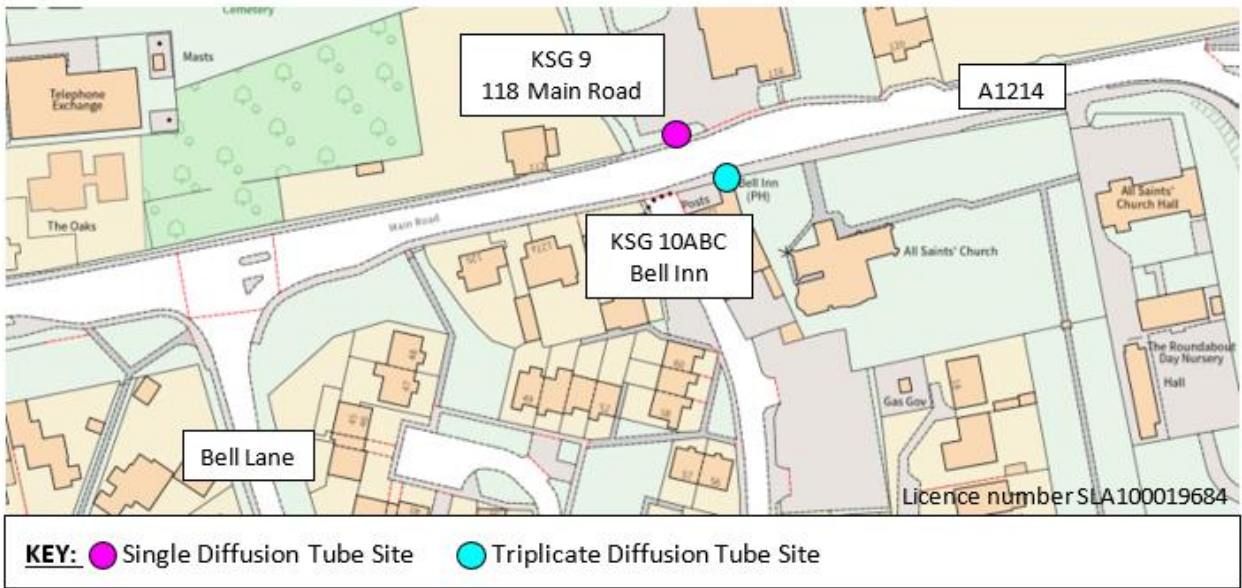


Figure D.14: Map of diffusion tubes: Melton – MEL 5 and MEL 7



Figure D.15: Map of diffusion tubes: Martlesham– MRT 1 ABC

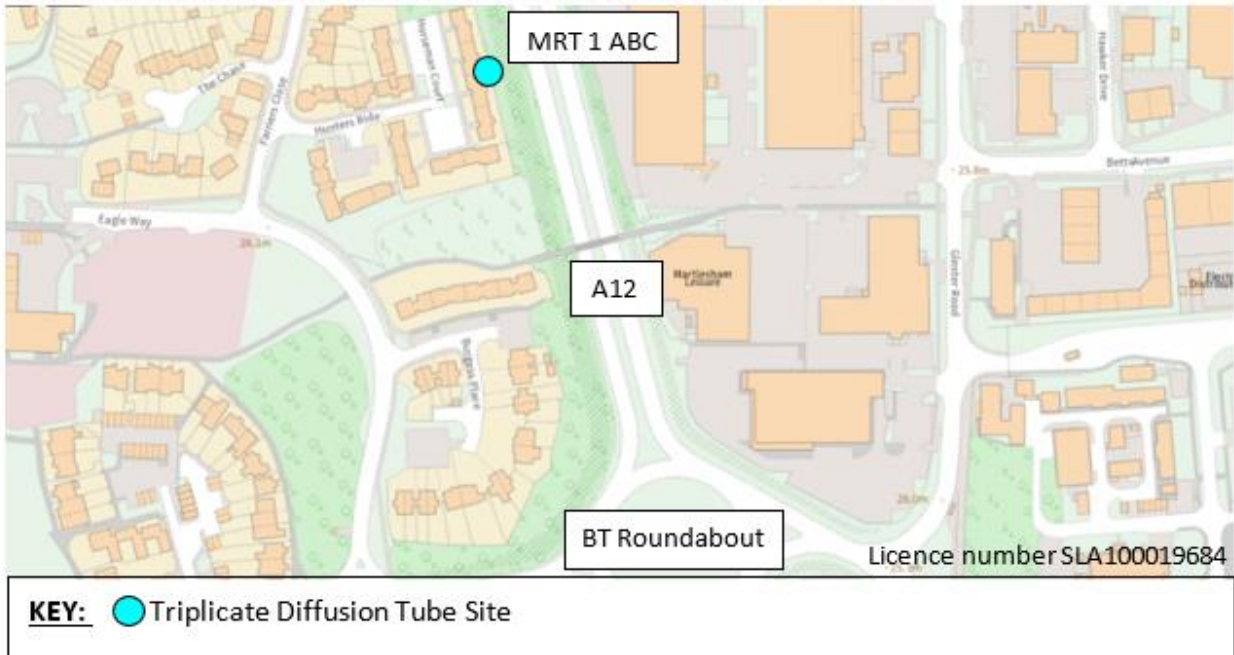


Figure D.16: Map of diffusion tubes: Farnham and Stratford and Little Glemham - FAR 1, FAR 2ABC, STA 1ABC, STA 2, STA 6, STA 7, STA 8ABC and LGM 2

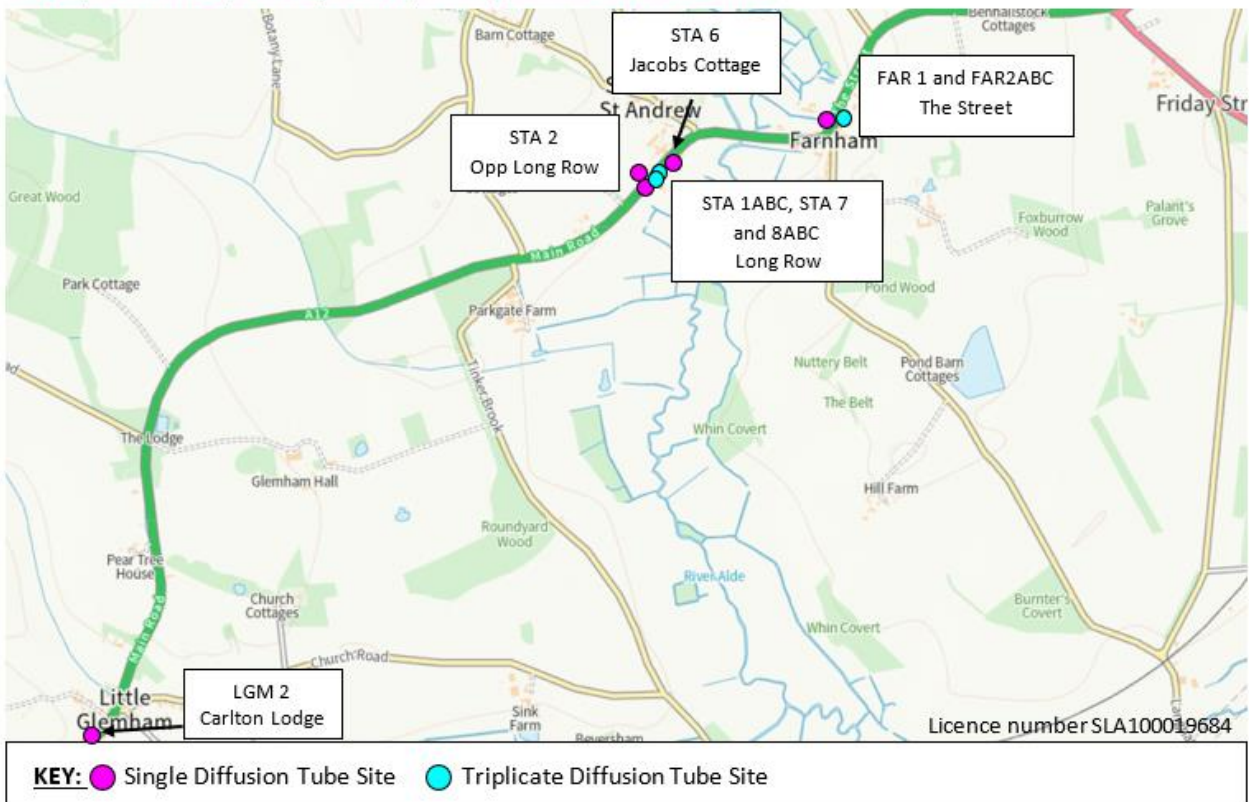
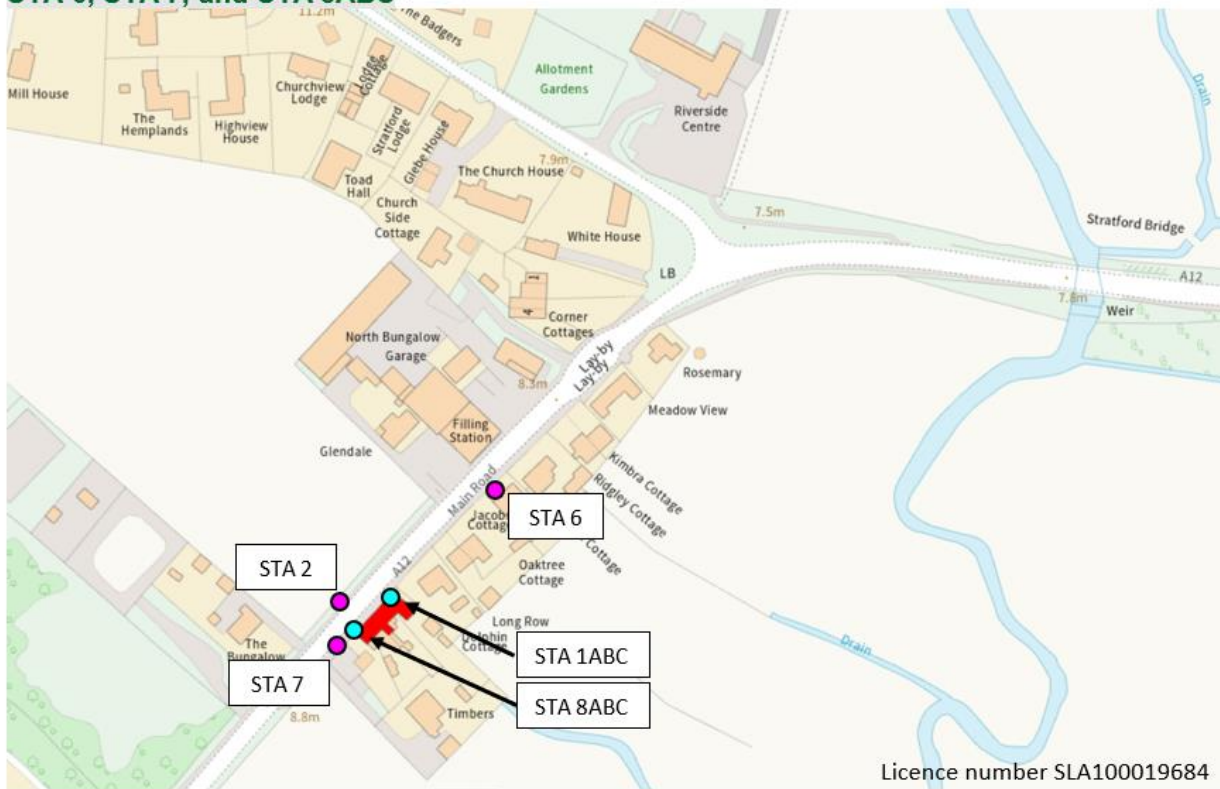


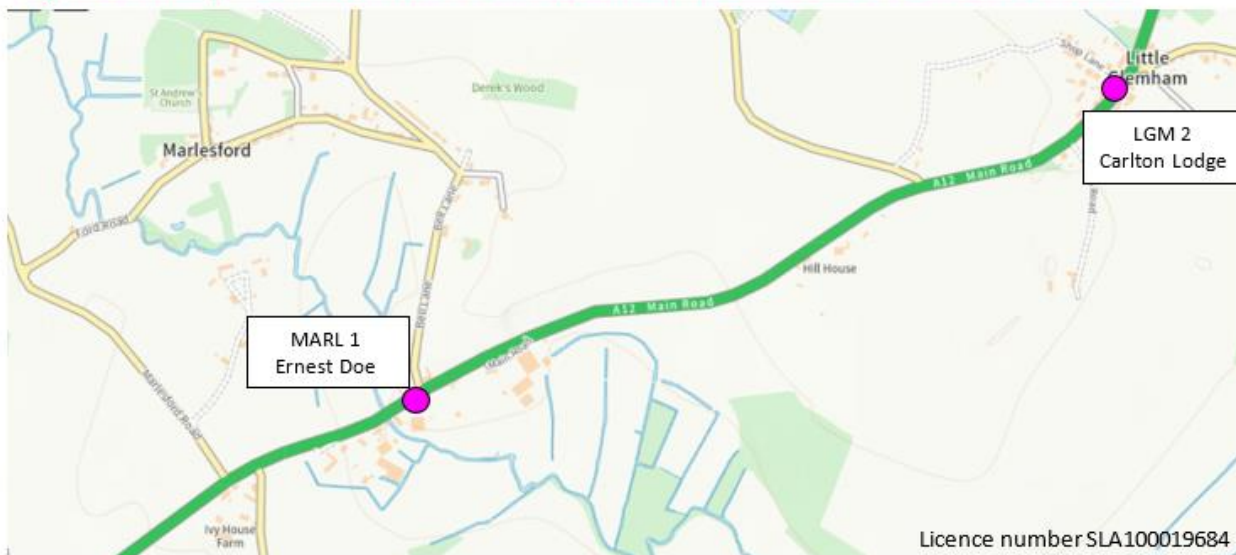
Figure D.17: Map of diffusion tubes and AQMA: Stratford St Andrew- STA 1ABC, STA 2, STA 6, STA 7, and STA 8ABC



Licence number SLA100019684

KEY: ● Single Diffusion Tube Site ● Triplicate Diffusion Tube Site ■ Active AQMA

Figure D.18: Map of diffusion tubes: Little Glemham and Marlesford - LGM 2 and MARL 1



Licence number SLA100019684

KEY: ● Single Diffusion Tube Site

Figure D.19:Map of diffusion tubes : Therberton – THEB 1



KEY: ● Single Diffusion Tube Site

Figure D.20:Map of diffusion tubes : Middleton - MID 1



KEY: ● Single Diffusion Tube Site

Figure D.21: Map of diffusion tubes : Yoxford – YOX 1 and YOX 2

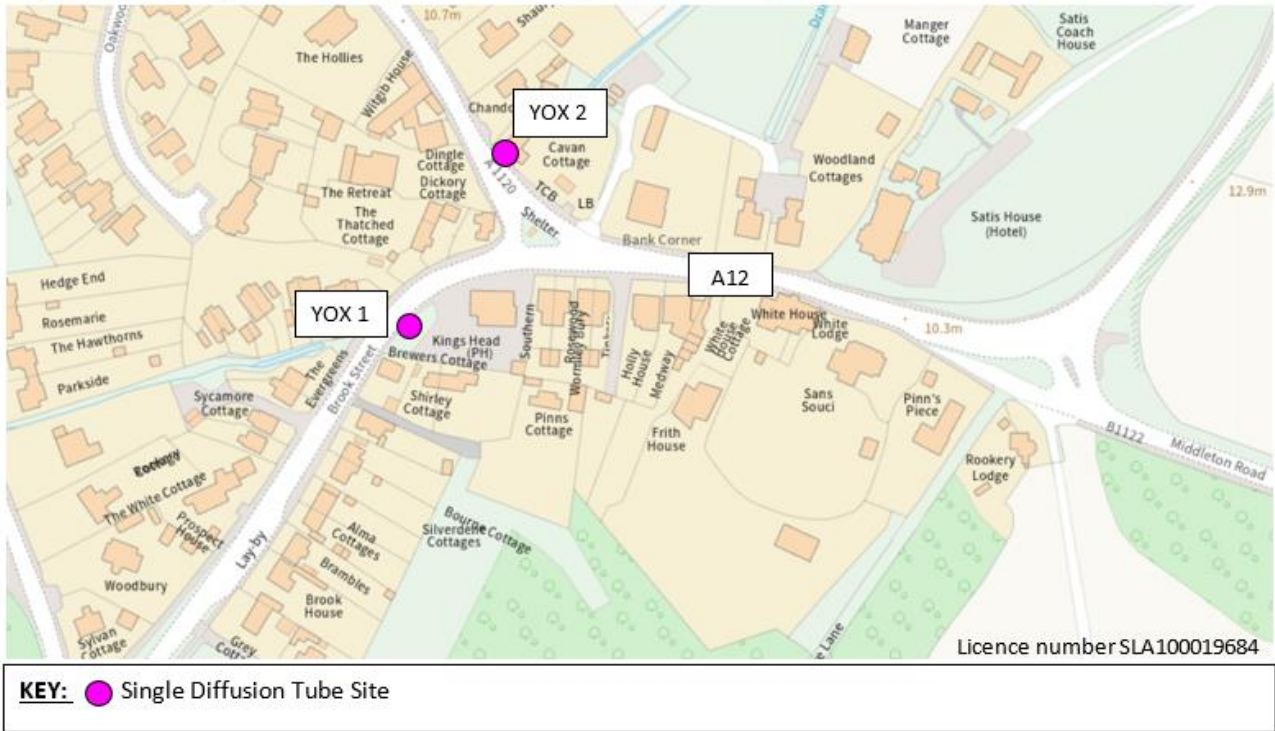


Figure D.22: Map of diffusion tubes : Saxmundham – SAX 1



Figure D.23: Map of diffusion tubes : Leiston – LEI 2, LEI 3, and LEI 4



Figure D.24: Map of diffusion tubes : Tunstall – TUN 1



Figure D.25: Map of diffusion tubes : Little Bealings – LTB1



Figure D.26: Map of diffusion tubes: Wickham Market – WKM 1 and WKM 2

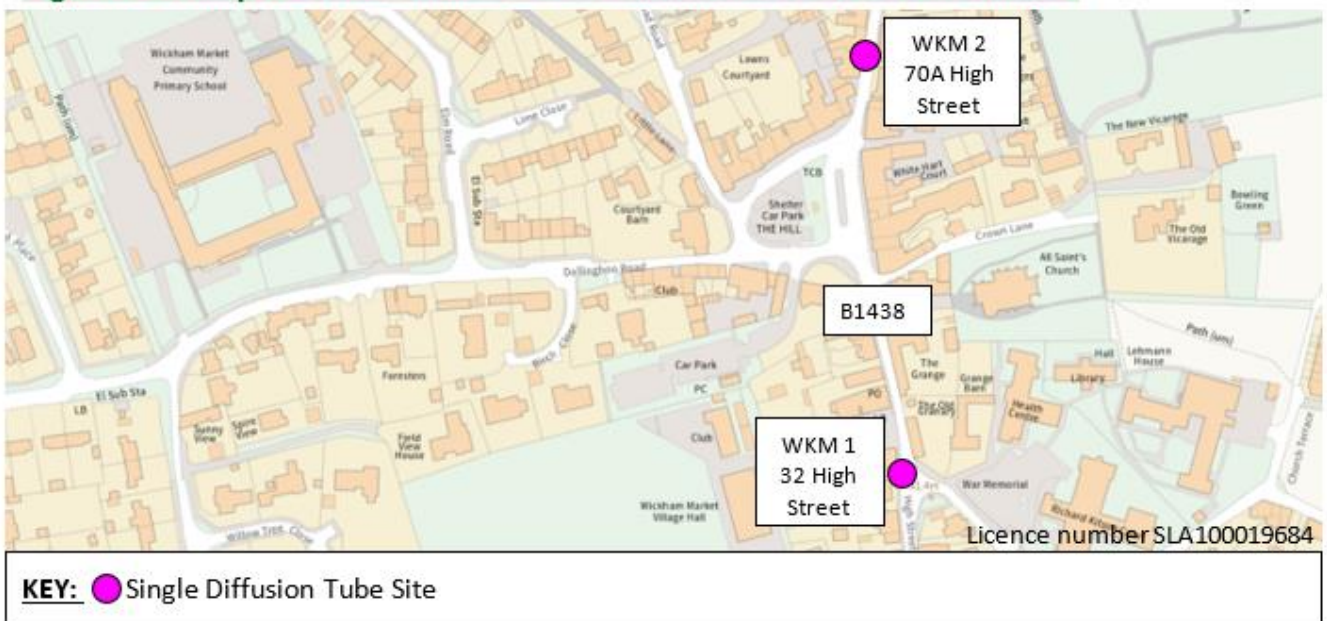


Figure D.27: Map of diffusion tubes and continuous NOx analyser: Woodbridge – WBG 1ABC, WBG 3, WBG 5, WBG 8, WBG 10, WBG 12, WBG 13, WBG 18, WBG 20, WBG 24, WBG 25 and WBG 26

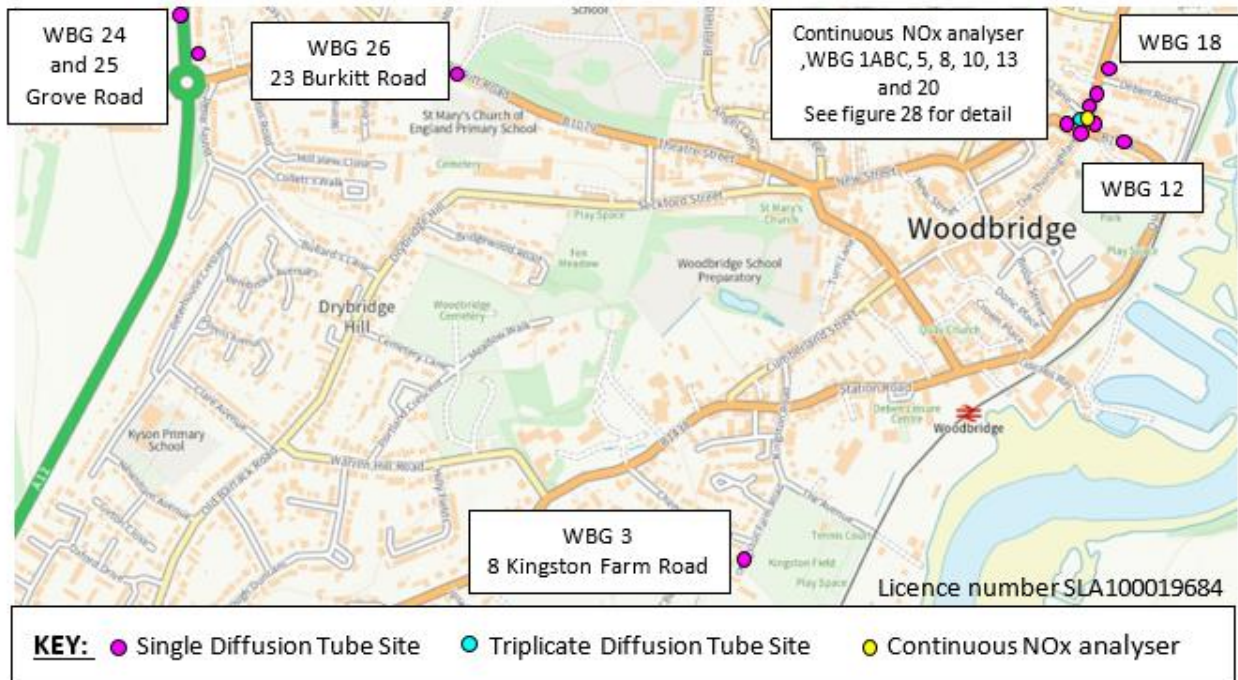
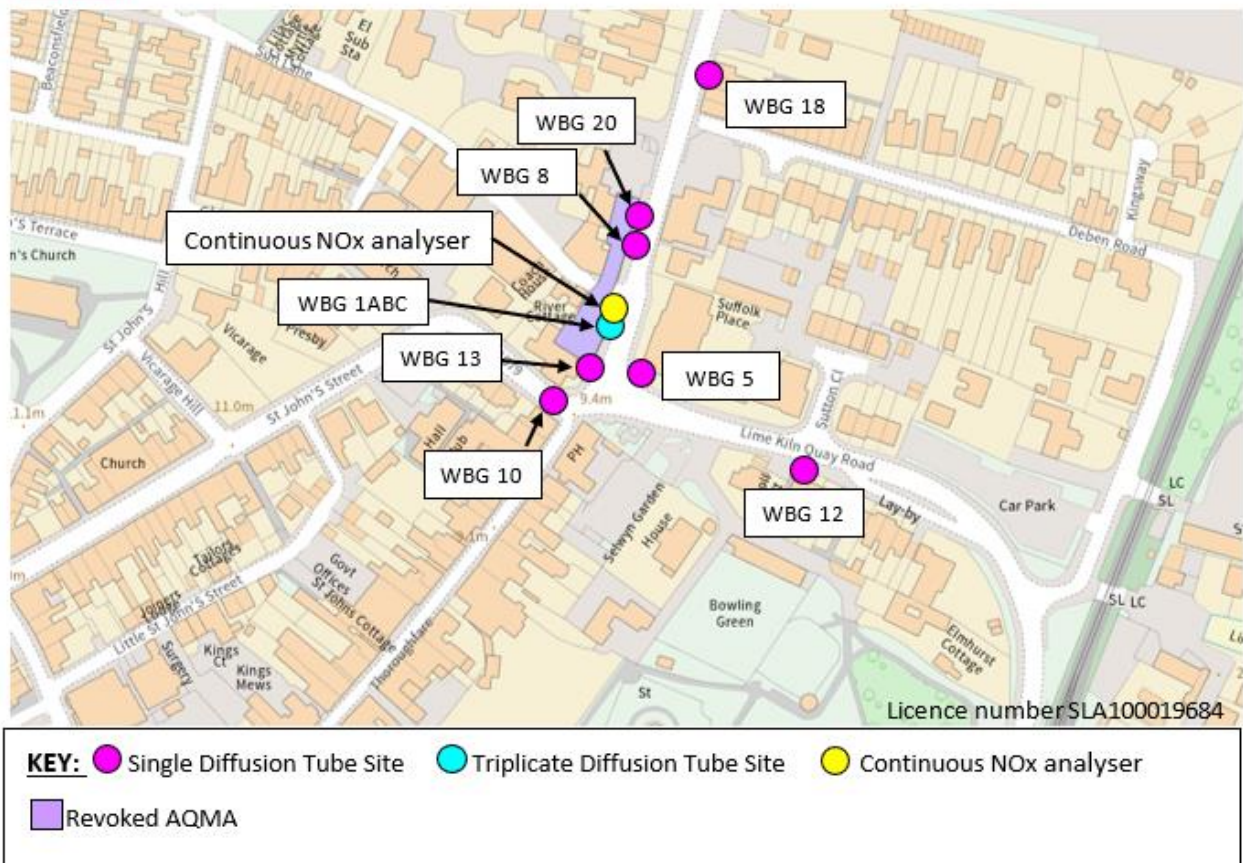


Figure D.28: Map of diffusion tubes, continuous NOx analyser and revoked AQMA : Woodbridge – WBG 1ABC, WBG 5, WBG 8, WBG 10, WBG 12, WBG 13, WBG 18, and WBG 20



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).

Appendix F: Copy of the AQMA Revocation Order for the Woodbridge AQMA


East Suffolk Council Order 2022
Environment Act 1995 Part IV Section 83(2)(b)
Order Revoking an Air Quality Management Area

East Suffolk Council, in exercise of the powers conferred on it by Section 83(2)(b) of the Environment Act 1995 HEREBY makes the following order:

1. This Order shall revoke the Order known as '**The Suffolk Coastal District Council Air Quality Management Area Order No 1, 2006**' in Woodbridge (as shown in the attached map) declared for the nitrogen dioxide (NO₂) annual mean.
2. This Order shall come into force on the date of sealing.


Dated this 20th day of September 2022

The Common Seal of East Suffolk Council was affixed in the presence of:

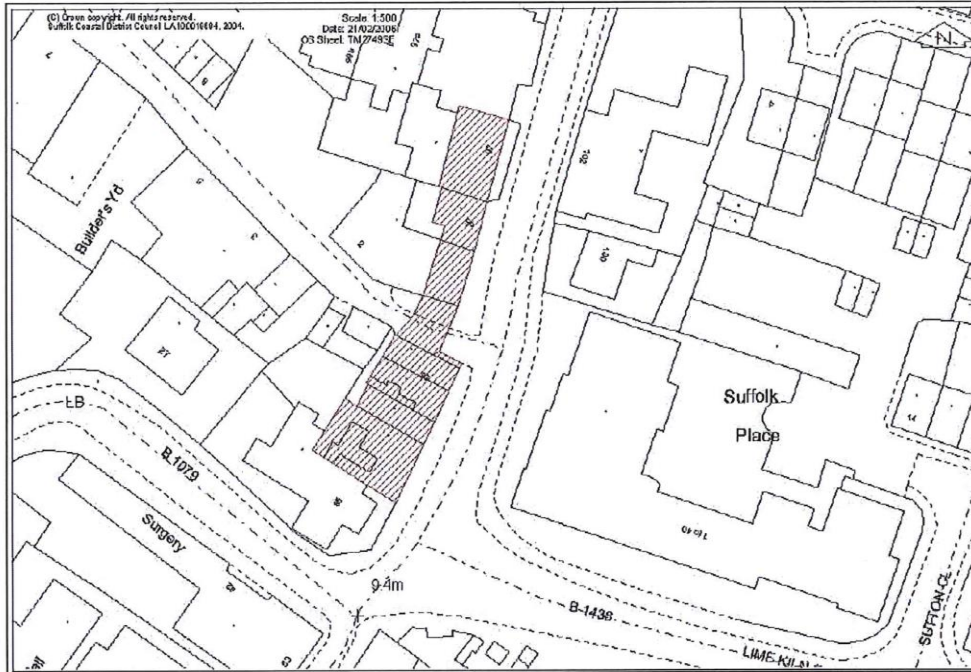
 L. STURFORD
Authorised Officer



841

 M. CLARKE
Authorised Officer

Dated: 29th September 2022



va
John

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

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- 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.
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- Defra. Clean Air Strategy, 2019
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- Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
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- 2022 Air Quality Annual Status Report (ASR) for East Suffolk Council. Produced by East Suffolk Council, December 2022.
- Defra. Local Air Quality Management 2022 NO_x NO₂ PM₁₀ PM_{2.5} CSV Format Background Maps at [Background Maps | LAQM \(defra.gov.uk\)](#)