



# **2021 Air Quality Annual Status Report (ASR)**

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

Date: October 2021

Information	East Suffolk Council Details
<b>Local Authority Officer</b>	Denise Lavender
<b>Department</b>	Environmental Protection
<b>Address</b>	East Suffolk House, Riduna Park, Station Road, Melton, Woodbridge, IP12 1RT
<b>Telephone</b>	0333 016 20000
<b>E-mail</b>	Environmental.protection@eastsoffolk.gov.uk
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## Executive Summary: Air Quality in Our Area

### Air Quality in East Suffolk Council

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

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages<sup>3</sup>, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017<sup>4</sup>.

Generally, the air quality within East Suffolk is good. There are two small localised areas where the objective for annual mean nitrogen dioxide (NO<sub>2</sub>) has been exceeded in the past, and Air Quality Management Areas (AQMAs) are currently declared;

- Several houses on the road junction of Lime Kiln Quay Road, Thoroughfare and St. John's Street in Woodbridge (Woodbridge Junction); and
- Four residential properties within Long Row, Main Road (A12) in Stratford St Andrew.

Each AQMA is discussed briefly overleaf, with more detail provided in Chapter 2.

The main source of emissions within East Suffolk is road traffic which means that the pollutants of concern are nitrogen dioxide (NO<sub>2</sub>) and particulate matter. Within the town of Felixstowe, emissions from, and associated with, the Port are also a source of these two pollutants.

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

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

<sup>3</sup> Defra. Air quality appraisal: damage cost guidance, July 2020

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

NO<sub>2</sub> is measured in the district by an automatic analyser and multiple diffusion tubes. There is an automatic analyser situated within Woodbridge, and in 2020 there were 78 diffusion tube monitoring locations covering 18 areas; Beccles, Blythburgh, Bungay, Farnham, Felixstowe, Framlingham, Kesgrave, Little Glemham, Leiston, Lowestoft, Martlesham, Melton, Oulton Broad, Saxmundham, Stratford St Andrew, the Trimleys, Woodbridge and Wrentham.

The 2020 monitoring results show no exceedances of the NO<sub>2</sub> annual mean objective at a site of relevant receptor exposure.

To improve the accuracy of data collection, a number of triplicate sets of diffusion tubes are reported. In 2020, there were 12 new monitoring locations sited to investigate concerns raised by local residents and possible changes due to future development within the district. There were 10 sites with low concentrations that were removed at the end of 2019. NO<sub>2</sub> concentrations within both declared AQMAs were within the objective in 2020, Stratford St Andrew for the fourth year running and Woodbridge for the seventh year running. There is a general trend of NO<sub>2</sub> reductions across the district over time. There was a widespread and pronounced reduction of annual mean NO<sub>2</sub> concentrations in 2020 compared to 2019. This is likely a result of the impact of COVID-19 and the associated travel restrictions.

### **Actions to Improve Air Quality**

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

The 2019 Clean Air Strategy<sup>5</sup> sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero<sup>6</sup> sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management

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<sup>5</sup> Defra. Clean Air Strategy, 2019

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

Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

There have been a number of actions undertaken by East Suffolk Council (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 Chapter 2. Key measures completed this year are:

- The East Suffolk Council - Suffolk Coastal Local Plan to cover 2018-2036 was adopted September 2020. Air quality was a key objective within the Sustainability appraisal framework against which all policies and site allocations have been assessed (ESC 8);
- Promotion of travel alternatives in the Local Plan, adopted September 2020 (ESC 9);
- Provision of electric charging points in Norse depots – 20 charge points now installed across the Ufford and Lowestoft depots supporting 8 electric vehicles (ESC 31);
- Production of a draft Air Quality Strategy for ESC at the end of 2020 which was finalised and adopted June 2021 (ESC 35);
- Production of the Port of Felixstowe Air Quality Strategy (ESC 36);
- SCC Travel Demand Management Project within Suffolk to promote the positive travel habits used more widely during the COVID-19 lockdowns (ESC 40); and
- SCC temporary trial cycling improvements in ESC – 4 trial schemes implemented in Beccles and Felixstowe during 2020 (ESC 41).

A number of air quality improvement measures were put on hold or impacted during 2020 due to challenges arising as a consequence of COVID-19. These are reported on in Table 2.2, and in Appendix F: Impact of COVID-19 upon LAQM. Examples include:

- Educational talks to schools regarding air quality and anti-idling;
- Bike-ability courses run by Suffolk County Council within schools;
- Council owned pool bikes were not able to be made available for use; and
- Katch a Lift electric taxi travelling between Framlingham, Wickham Market and Campsea Ashe train station.

## **Development Consent Orders (DCOs)**

### **Lowestoft Gull Wing Bridge**

In 2015 Suffolk County Council was given funding to identify and assess a number of ways to improving north-south connections across Lake Lothing. This scheme aimed to reduce congestion, encourage alternative modes of transport (public transport, walking and cycling), reduce accidents and regenerate Lowestoft. 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.

### **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 Examination closed on 6<sup>th</sup> July 2021. The Examining Authority issued a Recommendation Report to the Secretary of State on 6<sup>th</sup> October 2021, who now has 3 months in which to issue a decision. This DCO application is referenced in measure STA8 of Table 2.2 later in this report.

### **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 recent Public Examination closed on 14<sup>th</sup> October 2021 and we now await the Secretary of State decision. This DOC application is referenced in measures STA 7 and STA 8 of Table 2.2 later in this report.

ESC has been scrutinising the proposals and participating in the Public Examinations for the above DCO applications with regard to air quality impacts within the district, including the 2 declared AQMAs at Stratford St Andrew and Woodbridge.

## **Conclusions and Priorities**

In 2020, NO<sub>2</sub> concentrations within the Woodbridge and Stratford St. Andrew AQMAs were below the objective, as were all concentrations of NO<sub>2</sub> monitored throughout the district. Concentrations of NO<sub>2</sub> within the Woodbridge AQMA have been within the objective for the last 7 years with a trend of continued reduction. Defra confirmed, in their response to ESC's 2020 ASR, that revocation of this AQMA should be undertaken. A draft Detailed

Assessment has been produced to confirm the need for revocation which is attached as Appendix G. The draft Detailed Assessment, together with Defra's appraisal and comments will be taken to the Steering Group for sign off before being finalised. A draft Revocation Order is attached as Appendix H.

Concentrations in the Stratford St. Andrew AQMA decreased further in 2020 and were below the annual mean NO<sub>2</sub> objective for the fourth year running. The Action Plan received Defra approval in March 2018. The main priority measure, for the County Council to move the 30/50mph change of speed limit sign further south out of the village was undertaken in December 2017. ESC is continuing to monitor in this location. Taking forward any of the aspirational measures within the Action Plan has been put on hold whilst awaiting the outcome of the Sizewell C DCO application. This application, if successful, will include a bypass of this current AQMA which should drastically improve NO<sub>2</sub> concentrations within this village.

## 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 working with a number of Town and Parish Councils to look at areas of concern. We are continuously updating the air quality pages on our website, which should be easy to navigate and 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. It is a hub for 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. The Greenprint Forum is facilitated by ESC and its Steering Group includes representatives of local voluntary organisations. Membership is free and open to all. Further details can be found at [East Suffolk Greenprint Forum](#) » East Suffolk Council

The main source of air pollution in the district is traffic on our roads. 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 increase active travel and reduce the use of the motor vehicle where possible. As well as reducing emissions, this will also help local residents to increase their fitness and health by choosing to walk or cycle more regularly.

“Active Travel” is cleaner, cheaper and healthier for residents, offering a wide range of positive benefits. There is now also a Cycling Strategy for the whole of Suffolk produced by the County Council.

The [www.greensuffolk.org/travel](http://www.greensuffolk.org/travel) website has advice on all aspects of alternative greener travel options. Information is also supplied to aid businesses, developers and schools with constructing Travel Plans to suit their needs and free support and advice is available. Businesses may be eligible for up to 50% match funding towards the cost and installation of initiatives to support healthier and greener travel in the workplace.

You can obtain advice on safe cycling routes, download Suffolk cycle maps and find general supportive information on cycling at <https://www.suffolkonboard.com/cycle/>. In addition, Sustrans, a charity devoted to promoting cycling as a healthier alternative form of transport, also provides useful information which is available on their website at <https://www.sustrans.org.uk/ncn/map>. We are working to improve the electric vehicle charging network within the district which contributes to the wider charging network in Suffolk. You could consider making your next car purchase an electric one and not only enjoy the economic saving, but also reduce your emissions. Details of local electric charging points can be found at [www.zap-map.com/live/](http://www.zap-map.com/live/) and the site also gives general information about owning electric cars.

Even if you are not thinking of going electric, every driver can do their bit to help emission reduction through the practise of smarter driving. Information is available from the Energy Saving Trust Website via the link: <http://www.energysavingtrust.org.uk/travel>. By driving ‘smarter’ you can both save money and reduce harmful emissions to the atmosphere.

Open fires and wood-burning stoves have risen in popularity in recent years and may be an additional form of heating, an attractive feature, or the sole heat source. Some people are unaware that use in the home increases your own domestic exposure to air pollutants and makes a significant contribution to our national emissions of airborne particulates. While we will never be able to eliminate all airborne particulates, there are simple steps that households can take to limit emissions both indoors and out that will make a big difference. For information on the easy steps everyone can take please visit the ESC website [Wood burning in the home » East Suffolk Council](#)

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 Defra website <http://www.ukair.defra.gov.uk>.



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## 1 Local Air Quality Management

This report provides an overview of air quality in East Suffolk Council during 2020. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by 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

### Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 12 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

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

#### **NO<sub>2</sub> annual mean.**

##### **Woodbridge AQMA**

We propose to revoke AQMA Order No. 1 2006 - Woodbridge due to consistent years of annual mean NO<sub>2</sub> concentrations below the air quality objective with a trend of continued reduction (see monitoring section). NO<sub>2</sub> concentrations within the AQMA have reduced since 2014 and have now been below the objective level for seven consecutive years, with the maximum average for 2020 being 25.2 µg/m<sup>3</sup>. The concentrations at all monitoring locations within the AQMA have not been within 10% of the NO<sub>2</sub> annual mean objective of 40 µg/m<sup>3</sup> (below 36 µg/m<sup>3</sup>) for four consecutive years.

A draft Detailed Assessment presenting evidence to support the revocation of the Woodbridge AQMA has been produced and is attached as Appendix G. A draft Revocation Order is attached as Appendix H. The draft Detailed Assessment, together with Defra's appraisal and comments, will be taken to the Steering Group for sign off before being finalised. Once Defra have appraised the Detailed Assessment and confirmed revocation should be undertaken, ESC will have 4 months within which to make the Revocation Order.

The current Action Plan created in 2011 includes 20 measures to reduce NO<sub>2</sub> concentrations from both queueing and moving traffic at this junction. Studies looking at the layout of the junction and the local weather, in particular the wind speed and direction, indicate that emissions from the junction are being 'funnelled' in the direction of Melton Hill away from

the junction, and then dispersed very slowly within the canyoned area of the AQMA. In light of these findings, many of the options in the original Action Plan are unlikely to have any significant impact on NO<sub>2</sub> levels. The Action Plan was in the process of being updated and a draft version has been approved by Defra. Due to the decision to revoke this AQMA it is the Council's intention that the draft updated Action Plan will not be finalised, but will be archived for future use if needed.

### **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 NO<sub>2</sub> objective in 2016 (42.9 µg/m<sup>3</sup>). NO<sub>2</sub> concentrations have fallen each year thereafter and the AQMA has achieved compliance for four consecutive years. NO<sub>2</sub> concentrations in 2019 measured 36.2µg/m<sup>3</sup> and these have fallen below 36 µg/m<sup>3</sup> (thus not within 10% of the NO<sub>2</sub> annual mean objective of 40 µg/m<sup>3</sup>) for the first time in 2020, with a maximum annual mean of 27.1 µg/m<sup>3</sup>. The 2020 concentrations need to be viewed with caution however due to the possible impacts of the Covid-19 lockdowns on traffic flows using this route.

The Action Plan 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 the County Council to move the 30/50mph change of speed limit sign further south out of the village was undertaken in December 2017. 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 DCO application which, if successful, will include a bypass of this current AQMA which should drastically improve NO<sub>2</sub> concentrations going through the village.

**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	Name and Date of AQAP Publication	Web Link to AQAP
Air Quality Management Area Order No. 1, 2006	Declared 3 <sup>rd</sup> April 2006	NO <sub>2</sub> Annual Mean	An area encompassing a number of properties near the junction of Lime Kiln Quay Road, Thoroughfare and St. John's Street in Woodbridge	NO	48 µg/m <sup>3</sup>	25.2 µg/m <sup>3</sup>	AQAP for AQMA No. 1, February 2011	<a href="http://www.eastsuffolk.gov.uk/assets/Environment/Environmental-Protection/Air-Quality/FinalAirQualityActionPlanWoodbridgeFeb2011.pdf">http://www.eastsuffolk.gov.uk/assets/Environment/Environmental-Protection/Air-Quality/FinalAirQualityActionPlanWoodbridgeFeb2011.pdf</a>
Air Quality Management Area Order No. 3, 2014	Declared 18 <sup>th</sup> June 2014	NO <sub>2</sub> Annual Mean	The four properties situated within 1-5 Long Row, main Road (A12), in Stratford St. Andrew	NO	42 µg/m <sup>3</sup>	27.1 µg/m <sup>3</sup>	AQAP for AQMA No. 3, March 2018	<a href="http://www.eastsuffolk.gov.uk/assets/Environment/Environmental-Protection/Air-Quality/AQAP-Stratford-St.-Andrew-Final-November.pdf">http://www.eastsuffolk.gov.uk/assets/Environment/Environmental-Protection/Air-Quality/AQAP-Stratford-St.-Andrew-Final-November.pdf</a>

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

East Suffolk Council confirm that all current AQAPs have been submitted to Defra.



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

Defra's appraisal of last year's ASR concluded the report was well structured, very detailed, and provided the information specified in the Guidance. The following comments were provided, which have been addressed in this year's report:

1. A national bias adjustment factor has correctly been applied to the relevant 2019 NO<sub>2</sub> monitoring results but the incorrect revision of the national factor spreadsheet has been referenced, 03/20 and not 09/20. The factor utilised has not changed between the releases, but the Council should use the correct release of the national factors at the time of the ASRs completion. *The most up to date version has been used.*
2. Due to continual compliance with the NO<sub>2</sub> annual mean objective, the Council should proceed to revoke the Woodbridge AQMA. *A draft Detailed Assessment to confirm revocation has been produced and is attached as Appendix G.*
3. Within the ASR the coordinates of a number of monitoring sites differs between Tables A.2, A.3 and B.1. In future submissions these should be double checked to ensure that they are correct and consistent. *The report has been checked to ensure consistency.*
4. Concentration data is presented within Table B.1 to 1 decimal place. To ensure consistency all annual mean monitoring data presented within the ASR should be correct to 1dp. *Data has been reported to 1 dp.*
5. On the whole the report is very good, it provides a great deal of information and acts as a good first point of reference for members of the public. With one AQMA to be revoked and concentrations reducing in the second, the Council should continue their hard work in developing partnerships and improving local air quality. *Noted.*

East Suffolk Council has taken forward a number of direct measures during the current reporting year of 2020 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. 45 measures are included within Table 2.2, with the type of measure and the progress made during 2020 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in their respective Action Plans: Woodbridge Junction AQAP and Stratford St. Andrew AQAP. Key completed measures are:

- The East Suffolk Council - Suffolk Coastal Local Plan to cover 2018-2036 was adopted September 2020. Air quality was a key objective within the Sustainability appraisal framework against which all policies and site allocations have been assessed (ESC 8);
- Promotion of travel alternatives in the Local Plan, adopted September 2020 (ESC 9);
- Provision of electric charging points in Norse depots – 20 charge points now installed across the Ufford and Lowestoft depots supporting 8 electric vehicles (ESC 31);
- Production of a draft Air Quality Strategy for ESC at the end of 2020 which was finalised and adopted June 2021 (ESC 35);
- Production of the Port of Felixstowe Air Quality Strategy (ESC 36);
- SCC Travel Demand Management Project within Suffolk to promote the positive travel habits used more widely during the COVID-19 lockdowns (ESC 40); and
- SCC temporary trial cycling improvements in ESC – 4 trial schemes implemented in Beccles and Felixstowe during 2020 (ESC 41).

In this year's report on measure progress, we have removed a number of historic, successfully completed measures, (listed below) further details of which are available in last year's ASR:

- ESC4 – Campaign to reduce vehicle Idling on Port of Felixstowe;
- ESC5 – Electric vehicle trials at the Port of Felixstowe;
- ESC10 – Suffolk Travel Plan Guidance;
- ESC22 - Installation of Urban Traffic Management Control System (UTMC) in Lowestoft with connection to the Bascule Bridge lifts; and
- ESC28 - Anti-idling events outside primary schools within East Suffolk.

We have also removed 2 measures which are no longer being pursued;

- ESC23 – Separate cycle and pedestrian crossing Lake Lothing; and
- ESC26 – Improvement works to the cycling infrastructure in Lowestoft.

ESC anticipates that the measures stated above and in Table 2.2 will ensure concentrations remain low across the district, and compliance will continue to be achieved in future years and enable the revocation of the Woodbridge and Stratford St. Andrew AQMAs.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
<b>Woodbridge Action Plan</b>															
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	Planning	Recent air quality modelling shows max reduction of 0.1µg/m <sup>3</sup> in AQMA.	Reduction in peak queue lengths on Melton Hill.	Feasibility study undertaken. Negligible impact on AQMA NO <sub>2</sub> conc. so no further work will be undertaken by SCDC on this measure. Woodbridge Town Council wish to change the Traffic Regulation Order (TRO) for the Thoroughfare with stricter enforcement. 3 options currently being consulted on, one of which includes extension of restrictions. Measure to remain in updated Action Plan as 'aspirational' for Woodbridge Town Council.	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 new Council Offices in Melton. Offices moved Nov 2016. Original site to be used for housing. Traffic survey of Council Offices 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.	Need to investigate how to determine effectiveness of Travel Plan year on year.  Electric Pool Vehicle use - 7,373 miles in 2018.
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 to date. Measure to be retained in updated Action Plan as 'aspirational'	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.
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. Funding could be sought from CIL. SCC have produced a new Cycle Map for Woodbridge. Measure will be kept in updated Action Plan as 'aspirational'	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.

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WBG 15b	School Travel Plans	Promoting Travel Alternatives	School Travel Plans	2010	-	SCC and ESC	SCC and ESC	NO	Partially Funded	Unknown	Aborted	2% for 15a, b & c combined	Contact schools to remind them about Travel Plan. Contact Woodbridge School re adopting a Travel Plan. Woodbridge School contacted. Travel Plans superseded via SCC Modeshift Stars (see ESC 19)	All schools in Woodbridge historically adopted a Travel Plan. Exception is Woodbridge School who have been encouraged to produce one in future – they do provide significant information about sustainable travel to the school for all pupils. New footpath on Pytches Road and 30mph 'reduce your speed sign' for Woodbridge CPS users. School Travel Plans may no longer be in use at some of the schools so SCC advised postcode plots of students could be undertaken to identify any schools which may put significant traffic through AQMA. These can then be targeted. Postcode plots have not been possible to obtain from SCC to date so will need to re-assess a way forward.	Will have a positive effect to reduce cars using junction, but no real way to measure whether emission reduction target will be reached. Look to target specific schools who potentially have significant pupil vehicular traffic through the AQMA for further work. This is proving difficult to determine for Data Protection reasons. Moving forward we will look to deliver air quality information/education and anti-idling events at all primary schools in Woodbridge. See measures ESC 19 (School Travel Plans via Modeshift Stars) and ESC29 (education campaigns at schools)
WBG 8	Investigate Clean Bus Technology Fund to retrofit buses	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2016	-	ESC	ESC and Clean Bus Technology Grant/Fund	NO	Not Funded	Unknown	Not required	Marginal benefit for AQMA	Number of buses through Woodbridge fitted with new technology	This action depends on any future opportunities for funding. We approached relevant bus companies but there was no interest in a scheme such as this and bus companies must be on board	This measure will be kept within the updated Action Plan as an aspirational measure for future consideration. We would need to submit a successful bid and have local bus companies engage. To qualify for the grant the Council would need a guarantee that buses through the AQMA are upgraded and used within an AQMA for 5 years. NO <sub>2</sub> concentrations within the AQMA have been below the Objective for 5 years now which may impact success with the grant funding.
WBG 18	Raise air quality awareness	Public Information	Via the Internet	On-going	-	ESC	ESC	NO	Funded	< £10k	Implementation	n/a	Website promotion of air quality and reports. Web pages updated and promoted 2019. Social media campaigns surrounding Clean Air day in 2019 and 2020.	Articles published in local magazines and papers. ESC website air quality pages redesigned and updated in 2019. Enhanced use of Twitter (@EastSuffolk) and Facebook. Social media campaigns for 2019 and 2020 Clean Air Day.	
<b>Stratford St Andrew Action Plan Measures</b>															
STA 1	Move the location of the southern 30mph speed limit sign southwards	Traffic Management	Reduction of speed limits, 20mph zones	2017 Suffolk County Council (SCC) lead and funded	2017	SCC	SCC	NO	Funded	< £10k	Completed	Reduction in concentration by up to 2 µg/m <sup>3</sup>	Reduction in NO <sub>2</sub> concentrations in AQMA. Reduction in vehicle speed within AQMA. NO <sub>2</sub> concentrations in AQMA reducing since 2017. NO <sub>2</sub> 2019 = 36µg/m <sup>3</sup> . We cannot use 2020 data for comparison due to reduced traffic flows from COVID-19. 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.	Air quality monitoring will now determine the effectiveness of this measure to reduce NO <sub>2</sub> concentrations. NO <sub>2</sub> concentrations within AQMA reduced 3-4µg/m <sup>3</sup> in 2017 (prior to speed limit changes), 1µg/m <sup>3</sup> in 2018 after the speed limit move and 2µg/m <sup>3</sup> in 2019. Unable to use 2020 data due to reduced traffic flows related to lockdowns associated with COVID-19.
STA 2	Assessment of planning applications for impact on air quality	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	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.	The assessment process takes account of national guidance (including EPUK / IAQM) and local procedures

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STA 3	Measure 1 together with a southbound permanent vehicle activated sign	Traffic Management	Reduction of speed limits, 20mph zones	Unknown - not yet implemented	-	SCC	unknown	NO	Not Funded	£10k - 50k	-	Reduction in concentration to below the objective	Reduction in NO <sub>2</sub> 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.	Would need a site assessment and require capital funding (min £8,000) and revenue funding. Not yet approved. Concentrations in AQMA are falling year on year so measure may not be required. 2020 data cannot be used to confirm continued fall due to vastly reduced traffic flows associated with COVID-19 lockdowns.
STA 4	Measure 1 together with a northbound permanent vehicle activated sign	Traffic Management	Reduction of speed limits, 20mph zones	Unknown - not yet implemented	-	SCC	unknown	NO	Not Funded	£10k - 50k	-	Reduction in concentration to below the objective	Reduction in NO <sub>2</sub> 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.	Would need a site assessment. Would require capital funding (min £8,000) and revenue funding. Not yet approved. Concentrations in AQMA are falling year on year so measure may not be required. 2020 data cannot be used to confirm continued fall due to vastly reduced traffic flows associated with COVID-19 lockdowns.
STA 5	Southbound speed camera just prior to cottages	Traffic Management	Reduction of speed limits, 20mph zones	Unknown - not yet implemented	-	SCC	unknown	NO	Not Funded	£10k - 50k	-	Reduction in concentration to below the objective	Reduction in NO <sub>2</sub> 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.	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. Concentrations in AQMA are falling year on year so unlikely to be required.
STA 6	Average speed camera system throughout Stratford St Andrew and Farnham	Traffic Management	Reduction of speed limits, 20mph zones	Unknown - not yet implemented	-	SCC	unknown	NO	Not Funded	£100k - £500k	-	Reduction in concentration to below the objective	Reduction in NO <sub>2</sub> 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	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. Concentrations in AQMA are falling year on year so unlikely to be required. 2020 data cannot be used to confirm continued fall due to vastly reduced traffic flows associated with COVID-19 lockdowns.
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	2025	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 <sub>2</sub> concentrations in AQMA. Reduction in traffic flows within AQMA	A bid for Government funding (DfT) for a 4-village bypass (Farnham, Stratford St. Andrew, Little Glemham and Marlesford) was not successful. Alternative funding has not materialised. 4 village bypasses not currently being pursued. 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 2022. Public Examination currently underway for Sizewell C (July 2021).	Sizewell C DCO Integrated Transport Strategy includes up to 1000 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. If Sizewell C is approved current estimate is that Early Years construction works will start 2022.

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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.	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 under discussion as part of the DCO. Discussions on use of latest EURO classifications for the construction fleet for both applications. Public Examination completed June 2021 for EA1N & EA2 and underway for Sizewell C (July 2021).	DCO application for Sizewell C submitted with an integrated transport strategy which includes up to 1000 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 is being reviewed.
<b>Other measures within the East Suffolk District</b>															
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. 63 E-RTGs (electrified RTGs) as of April 2020. 38 blocks converted to electric 2020.	As of April 2020, 63 of the total 88 RTG's in use on the Port are electric capable (Ae-RTGs). The Port plan to replace the remaining 25 diesel units over the next 3 years. 17 electric capable replacement Ae-RTGs are planned to be ordered 2021 with delivery 2022. 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). 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. The Port plan to convert their Ae-RTGs to battery storage over time with initial conversions planned to start in 2021 at a rate of 2 per year.	To mitigate the increase in electricity demand, the Port has been progressing energy efficiency projects and renewable energy generation (Solar PV) and are now able to generate 0.5MW of energy from solar power. Quay crane lighting upgrade project fitting LED to 12 cranes completed - will reduce energy usage.
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 <sub>2</sub> and SO <sub>2</sub> concentrations at the Port. 135 IMV units replaced at 2020. Reduction in NO <sub>2</sub> and SO <sub>2</sub> over time. Some sites showing slight increases in 2019 and others show continued reductions which is plateauing now. No monitoring results for 2020 due to impact of COVID-19 on monitoring regime.	83 IMVs replaced 2011-2016. 52 IMVs replaced 2017/2018. 17 replaced 2019. Total of 135 of the 260 units now replaced. 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) early 2022. The current plan is that any new IMVs will be electric prior to transferring to alternative fuel usage (Hydrogen).	All new IMVs utilise Adblue as part of exhaust gas recirculation technology and currently comply to Euro VI emissions standards instead of Euro iiiia. The recently purchased 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.

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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 May 2021. 28% modal share.	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. 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.	2019 - no further increase in number of services anticipated above 33 as currently train services from the Port are at capacity. 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 has been advised that there are 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	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.
ESC8	Air quality included in the East Suffolk Council - Suffolk Coastal Local Plan (Core Strategy & Development 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. Existing documents adopted 2013 and 2017. 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	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. Large and ambitious development plans in the former Suffolk Coastal area require careful management. 9,756 homes expected to be delivered between 2018-2036. Annual monitoring information available on website <a href="http://www.eastsuffolk.gov.uk/planning/planning-policy-and-local-plans/suffolk-coastal-local-plan/monitoring-information/">www.eastsuffolk.gov.uk/planning/planning-policy-and-local-plans/suffolk-coastal-local-plan/monitoring-information/</a> 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 has been submitted to the Planning Inspectorate for examination. 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

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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	-	ESC	ESC	NO	Funded	< £10k	Implementation	Unknown	Information available on East Suffolk website - completed. Information disseminated to the Public and commercial sectors.	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.	Investigating promotion of Ready to Burn scheme to local wood suppliers as there is no-one locally. No further work undertaken on this to date
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. 2018 - 5134 visitors to Local Links developer travel plans and 1056 to SCC travel plans websites. 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 Suffolkonboard (150,000 related to school travel). There were 1,677 users of the SCC Travel Plan pages and 3,059-page views.	SCC website updated for greener travel and travel planning. Number of visitors to websites monitored. 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.thewaytosuffolk.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.	<a href="http://www.suffolkonboard.com">http://www.suffolkonboard.com</a> - 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
ESC13	Promotion of travel alternatives for staff at ESC	Promoting Travel Alternatives	Promotion of cycling	2013	-	ESC	ESC	NO	Funded	Unknown	Implementation	Unknown	Council promotes cycling and walking as a positive alternative form of travel for its staff. Tax free bike 'Cycle 2 Work scheme'. May/June 2019 - 11 bikes purchased. May 2021 - 5 bikes purchased. Pool bike used 5 times in 2019/20. Due to COVID-19 restrictions, pool bikes not used during 2020 but back in use for Summer 2021.	Staff encouraged to use cycles. Tax free bike 'Cycle 2 Work scheme' started 2013. 32 bikes purchased Nov 16 - April 19. Business mileage rate for cycling in place. Emergency Ride Home scheme in place. Travel Survey in 2017 indicates increased number of staff who cycle to work. 4 pool bikes provided for use and promoted, recording of usage just started end 2019.	Riduna Park building has covered and secure cycle parking/racks for 40 bikes, shower/changing/ drying facilities and lockers. ESC staff and member mileage claimed; 2015/16 - 827,840 2016/17 - 755,183 2017/18 - 718,107 2018/19 - 747,724 2019/20 - 772,334 2020/21 - 263,052. Increases in 2018/19 and 2019/20 are partly due to under reporting of member mileage previously. 2020/21 figured has reduced by 68.4% due to the COVID-19 pandemic and associated lockdowns.
ESC14	Fleet emissions improvements for freight haulage companies based in Felixstowe	Vehicle Fleet Efficiency	Other	2018 to draw up list. 2020 to contact hauliers	2022	ESC and Highways England	ESC and Highways England Grant funding if approved	NO	Partially Funded	£100k - £500k	Planning	Unknown	Number of haulage firms engaged in the process	Contact haulage companies around the Port to ascertain fleet make up and any emission reduction programs in place. Investigate promotion of emission improvements (driver training, fleet replacement, alternative technologies - low rolling-resistance tyres, telematics, or improved aerodynamics). List of companies drawn up with contact details. Survey of hauliers undertaken Feb 2020 which received 9 responses. Looking to establish membership of ECO Stars scheme as a result of the survey. 2020/21 - Highways England requested additional information to assess the Grant funding application.	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. Still waiting to hear back from Highways England. On hold currently until disruption from COVID-19 pandemic has eased and final response from Highways England obtained.



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														Information sent but still waiting to hear back from them.	
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 (0.34kWh per mile driven on average) 1/5/19-18/4/20 = 1,662.82 kWh used, 4,890 EV miles driven. 2020 = 3903.81 kWh used, 11,438 EV miles driven.	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 activated.	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.
ESC18	Suffolk Car share	Alternatives to private vehicle use	Car & lift sharing schemes	2001	2015	SCC and ESC	SCC	NO	Funded	Unknown	Completed	Unknown	Annual increase in users of the site over the last 5 years. 2015 - 2,189 2016 - 2,339 2017 - 2,662 2018 - 2,896 2019 - 3,139 July 2021- 3,750	Number of site users has increased from 2,189 in 2015 to 3,750 members in July 2021. Includes specific groups for Sizewell Carshare (EDF Energy employees) and SCC & Suffolk Constabulary.	Free web-based contact database. Site users are across whole of Suffolk we cannot obtain a breakdown for ESC area <a href="https://liftshare.com/uk/community/suffolk">https://liftshare.com/uk/community/suffolk</a>
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 and number who have received accreditation June 2019 - 12 schools within ESC, 0 accredited September 2020 - 14 schools signed up and 2 have Bronze accreditation. June 2021 - 16 schools signed up with 2 Bronze accreditations.	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.	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 <a href="https://www.suffolk.gov.uk/planning-waste-and-environment/planning-and-development-advice/travel-plans/school-travel-plans/">https://www.suffolk.gov.uk/planning-waste-and-environment/planning-and-development-advice/travel-plans/school-travel-plans/</a>
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. Aim is to try and implement this within the next 2 years.	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	Proposed third vehicular crossing of Lake Lothing	Transport Planning and Infrastructure	Other	2010	2023	SCC	SCC	NO	Funded	> £10 million	Implementation	Unknown	Lake Lothing Third Crossing open. Reduction in NO <sub>2</sub> concentrations in Lowestoft Town Centre (Bascule Bridge) and Oulton Broad	Examination closed 5th June 2019. On 30 April 2020, the Secretary of State for Transport decided under section 114 of the Planning Act 2008 to make an Order granting development consent for the Lake Lothing Third Crossing. The Order came in to force on 21 May 2020. Construction delayed slightly and began April 2021. Crossing now planned to open mid to late 2023, significantly affecting traffic routes through urban Lowestoft.	Lengthy timescale. Approximate costs in excess of £80million. Possible construction delays due to COVID-19. New crossing could result in a large reduction of traffic congestion in Oulton Broad and the Lowestoft Town Centre

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
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	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 <a href="http://www.eastsuffolk.gov.uk/planning/planning-policy-and-local-plans/suffolk-coastal-local-plan/monitoring-information/">www.eastsuffolk.gov.uk/planning/planning-policy-and-local-plans/suffolk-coastal-local-plan/monitoring-information/</a>
ESC27	East Suffolk Council Cycling Strategy	Promoting Travel Alternatives	Promotion of cycling	2016	2021	ESC	ESC	NO	Funded	Unknown	-	Unknown	Strategy adopted - Waveney Strategy completed. ESC Strategy draft being drawn up following public consultation. This will supersede the Waveney Strategy. Final consultation on draft due Autumn 2021	Waveney DC Cycling Strategy formally adopted 2016, final draft published 2018. Identified barriers and gaps in the cycling infrastructure. ESC intends to extend this document across the whole of the Council and possibly also include walking infrastructure. Initial public consultation October 2020 to look at where the gaps are in the district. Now assessing results and producing draft Strategy for second consultation Autumn 2021. The ESC Strategy will supersede the Waveney Cycling Strategy.	This measure originally related only to the Waveney DC Cycling Strategy, which was adopted in 2016, measure now altered to ESC Cycling Strategy - may be Cycling and Walking Strategy depending on findings. Infrastructure gaps to be identified but funding opportunities may be problematic. We have created a cycle / foot route behind Morrison's in Felixstowe, from Grange Farm Rd to Grange Rd, this was completed December 2019.
ESC 29	Air quality information / education activities for primary schools within ESC including anti-idling events	Public Information	Via other mechanisms	2019	2023	ESC	ESC	NO	Partially Funded	< £10k	Implementation	Unknown	-	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. Due to the COVID-19 restrictions we have not been back into schools after February 2020.	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 at this time due to restrictions surrounding COVID-19.
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. Public consultation undertaken, first draft being produced and will be consulted on Autumn 2021. Number of bike-ability lessons delivered in schools within ESC. SCC has delivered 106 Bike-ability courses within ESC September 2018 - July 19 training 1,272 children to Level 1 or 2 standard.	ESC webpage on cycling in the district can be found at <a href="https://www.eastsuffolk.gov.uk/leisure/cycling/">https://www.eastsuffolk.gov.uk/leisure/cycling/</a> SCC webpages on cycling; <a href="https://www.suffolkonboard.com/cycle/">https://www.suffolkonboard.com/cycle/</a> provides free cycle maps for areas in Suffolk and <a href="https://www.suffolk.gov.uk/children-families-and-learning/schools/walking-and-cycling-to-school/">https://www.suffolk.gov.uk/children-families-and-learning/schools/walking-and-cycling-to-school/</a> provides information about cycling to school including bike-ability. Park & Cycle from Martlesham Park & Ride to Ipswich Town Centre introduced - commuters can park from 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 a 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 to run bike-ability courses during COVID-19 pandemic
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. Total mileage 2020/21 = 58,238.	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.	-

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
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	-	Feasibility of project is currently being discussed and a report drawn up to take to Council Cabinet. Hydrogen technology will be investigated in the medium term (5+ years) with an interim solution to be chosen to take forward in 2021/22.	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		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 improve 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 as this should help ease congestion within the Town.
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 Low emissions Vehicles acquired	Ambition to migrate all of the existing Council fleet (including those used by our partners) to a low carbon alternative. Fleet Migration Plan being developed 2021/22 investigating use of Hydrotreated Vegetable Oil Diesel (HVO) in the medium term.	-
ESC 35	Draft Air Quality Strategy for ESC	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.	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.	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.
ESC 37	Quiet Lanes within ESC	Promoting Travel Alternatives	Other	2021	2022	Quiet Lanes Suffolk, East Suffolk Greenprint Forum, ESC, SCC, Town & Parish Councils and Village Groups	Part ESC and part Suffolk 2020 Fund	NO	Funded	£50k - £100k	Implementation	Reduced vehicle emissions	Number of quiet lanes designated in ESC. Number of parishes with designations. 13 Quiet Lanes in 2013/14 spanning 7 parishes. Additional 7 Quiet Lanes designated in 2 further parishes March 2021	13 Quiet Lanes were designated in 2013/14 spanning 7 parishes - Bromeswell, Butley, Chillesford, Eyke, Newbourne, Felixstowe and Waldringfield. March 2021 - 4 Quiet Lanes designated in Snape and 3 in Glemsford. Up to 140 new designations applied for in ESC for 'Phase 2' later in 2021.	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 - demand responsive Electric taxi service between Framlingham, Wickham Market and Campsea	Alternatives to private vehicle use	Other	2020	2021	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	Number of passengers transported / Number of journeys undertaken / Number of miles driven	Katch a Lift' is a 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.	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.

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	Ashe train station														
ESC 39	Installation of public electric vehicle charge points by ESC	Promoting Low Emission Transport	Other	2019	2021	ESC	ESC	NO	Funded	£50k - £100k	Implementation	Reduced vehicle emissions	Number of sessions used, kWh of charge & number of EV miles driven. Woodbridge 2020 - 173 sessions using 1,304 kWh covering 3,822 EV miles.	1 electric charge point installed at Woodbridge leisure centre and 2 planned at Bungay leisure centre in 2021.	-
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	Adverts on Heart FM Bus sides on First and Eastern Counties buses Lamp post sleeves at 136 primary schools in Suffolk EADT article from Cllr Reid Boosted social media posts using SCC twitter/Facebook	Aim to maintain and promote the positive travel habits used more widely during the COVID-19 lockdowns
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	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.	£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.

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

As detailed in Policy Guidance LAQM.PG(16) (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM<sub>2.5</sub> (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM<sub>2.5</sub> has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

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<sub>2.5</sub>. 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 early 2020 ESC, together with the other Suffolk Local Authorities, worked with Suffolk County Council's Transport and Public Health teams to prepare a draft 'Air Quality Profile' report for Suffolk which now forms part of the JSNA documents. The report maps, at a district and borough level, local air pollution levels and supports efforts to increase understanding of the public health impact of poor air quality on health in Suffolk. It sets a number of actions to strengthen the system and the County Council's response to poor air quality:

1. Providing training and resource to increase the technical knowledge of officers such as transport, spatial planners, elected members and wider partners on impact of air quality on health and the actions which can be taken to mitigate;
2. Strengthening wider communication to the public on health impacts of air quality;
3. Undertaking further research at local level on links between air quality and health in Suffolk;
4. Mapping and sharing current interventions and good practice; and
5. Developing a County Council strategy to describe the levers Suffolk County have to positively impact on AQ and consider how to optimise.

Following on from the Air Quality Profile, a draft Action Plan is being produced for Suffolk setting out interventions that could be undertaken to achieve the above actions.

The Council, working in partnership with Suffolk County Council and other potential partners, is committed to promoting alternative forms of transport and modes of travel such as cycling, walking, car sharing and public transport with the aim of reducing the reliance on private

cars. Both the Waveney and Suffolk County Council Cycling Strategies (and the ESC Cycling Strategy currently being produced - ESC 27) recognise the need for continued promotion of cycling and for greater improvements to the cycling infrastructure. Suffolk County Council has spent £1 million to date on cycle improvements within Lowestoft, and the Lowestoft Town Centre Masterplan (ESC 33) aims to improve cycling and walking across the Town.

A number of measures listed in Table 2.2 (ESC 9, 12, 13, 19, 27, 30, 40) should impact positively in reducing emissions by promoting a change in travel culture and providing advice, support and the necessary infrastructure to encourage the use of other means of transport rather than the car. 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 in terms of improving the health and wellbeing of the population, as well as improving the local air quality.

The Public Health Outcomes Framework (PHOF) indicator DO1 – Fraction of mortality attributable to particulate (PM<sub>2.5</sub>) air pollution for 2019 gives a value of 5.2% for ESC which is slightly below the value of 5.3% for Suffolk and 5.5% for the East of England region. For comparison, the PHOF indicator for whole of England is 5.1%.

Reductions in PM<sub>2.5</sub> emissions are also targeted by the following measures related to Planning:

- Assessments of planning applications to consider their impact on air quality (ESC7);
- Air quality is included in the new ESC Local Plan documents (ESC8); and
- The Local Plan promotes travel alternatives for the district which aims to reduce emissions from motor vehicle use (ESC9).

Suffolk County Council has a number of measures that aim to increase the number of people walking, cycling and using greener travel methods within the district, with the aim of reducing the reliance on private cars. This has strong links with the Public Health Outcomes Framework in terms of improving the health and wellbeing of the population as well as improving local air quality through reduced congestion and vehicle emissions:

- Provision of Greener Travel Information (ESC 12);
- Suffolk car and lift sharing scheme (ESC 18);
- Adoption of a national award scheme (Modeshift Stars) 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);
- 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); and
- Provision of 4 temporary trial cycling schemes in ESC using the COVID-19 Government funding (ESC 41)

There are a number of measures which will reduce PM<sub>2.5</sub> emissions locally to the Council Offices, within the two AQMAs, and more widely across the district:

- Emission reduction measures being undertaken by the Port of Felixstowe will aid to reduce emissions of PM<sub>2.5</sub>. Efficient power technologies fitted to Rubber-Tyred Gantry cranes (RTGs) – ECO-RTGs and electric RTGs replacement program in place (ESC 1) and abatement technologies fitted to Internal Movement Vehicles and replacement program in place (ESC 2). Increased use of rail to move freight (ESC 3);
- Provision of information to the Public and commerce on reducing emissions from solid fuel and wood burning (ESC11);
- Promotion of travel alternatives for ESC staff (ESC 13);
- Third vehicular crossing of Lake Lothing in Lowestoft. This will significantly reduce congestion and therefore PM emissions within Lowestoft (ESC 21);
- School Travel - deliver air quality information/education and anti-idling events at all primary schools (ESC 29);
- A number of measures will increase uptake and use of low or zero emission vehicles (ESC 31, 32, 34, 38 and 39);
- Future traffic restrictions and improved enforcement to the Thoroughfare close to the Woodbridge AQMA will reduce congestion at this junction by freeing up the left filter lane at the lights (WBG3);
- Travel Plan for the District Council offices (measure WBG15c);
- Promotion of walking and cycling in Woodbridge (measure WBG16);
- Raising air quality awareness through better website, press releases, publicity (measure WBG18);

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- Possible A12 Stratford St. Andrew bypass would smooth the traffic flow thereby reducing PM2.5 emissions (measure STA7); and
- Mitigation of emissions from Sizewell C construction traffic through use of low emission Heavy Goods Vehicles (measure STA8).



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

This section sets out the monitoring undertaken within 2020 by East Suffolk Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2016 and 2020 to allow monitoring trends to be identified and discussed.

### Summary of Monitoring Undertaken

#### 3.1.1 Automatic Monitoring Sites

East Suffolk Council undertook automatic (continuous) monitoring at one site during 2020. Table A.1 in Appendix A shows the details of the automatic monitoring sites. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem. The Air Quality England page (available at: <https://www.airqualityengland.co.uk/>) presents automatic monitoring results for East Suffolk Council, with automatic monitoring results also available through the UK-Air website .

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

#### 3.1.2 Non-Automatic Monitoring Sites

East Suffolk Council undertook non- automatic (i.e. passive) monitoring of NO<sub>2</sub> at 78 sites during 2020. 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: Map(s) of Monitoring Locations and AQMAs. 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. 12

new sites were added to NO<sub>2</sub> monitoring network in 2020 across the district, within the following towns/parishes:

- Lowestoft – sites added to in Denmark Road and Rotterdam Road monitoring concentrations before and after the construction of the Gull Wing Crossing, and a site added to Fir Lane following increased concentrations in 2019;
- Woodbridge – residential properties on the A12 to confirm current levels and any future increases due to a number of Nationally Significant Infrastructure Projects currently in the process of applying for Development Consent Orders;
- Martlesham – sites added following local concerns by residents and the Parish Council;
- Bramfield – one site in the village following local concern;
- Halesworth – one site in the Town following local concern; and
- Theberton, Middleton, Yoxford A12, Tunstall – new site in each of these locations on the designated route for the proposed Sizewell C construction traffic.

The following monitoring sites were removed at the end of 2019, to ensure that resources were allocated appropriately with reference to LAQM guidelines:

- WRE 1, FLX 43, MRT 4 & 5, FRAM 1, 2 & 3 – these were all in place following concerns raised by the public. However, 12-month monitoring survey confirmed annual mean concentrations at these sites were all low (maximum of 21.4 µg/m<sup>3</sup>); and
- WBG 6, 15 & 17 – removed following a change in ownership of the properties they were situated on.

## Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

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

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>. Note that the concentration data presented represents the concentration at the location of

the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in Appendix B. Distance correction was not required at any of the locations, since they were all below  $36 \mu\text{g}/\text{m}^3$ , and therefore not at risk of exceeding the  $\text{NO}_2$  annual mean objective.

Table A.5 in Appendix A compares the ratified continuous monitored  $\text{NO}_2$  hourly mean concentrations for the past five years with the air quality objective of  $200 \mu\text{g}/\text{m}^3$ , not to be exceeded more than 18 times per year.

During 2020 the continuous analyser, located at a relevant receptor within the Woodbridge AQMA recorded good data capture of 99%. The monitor measured an annual mean  $\text{NO}_2$  concentration of  $25 \mu\text{g}/\text{m}^3$  in 2020. This is within the air quality objective for the seventh year running. The annual mean concentration also showed a significant reduction from  $31 \mu\text{g}/\text{m}^3$  in 2019.

The 1-hour objective is set at  $200 \mu\text{g}/\text{m}^3$  not to be exceeded more than 18 times per year. The automatic analyser in Woodbridge did not record any 1-hour concentration in excess of  $200 \mu\text{g}/\text{m}^3$ , thus achieving compliance with the 1-hour mean  $\text{NO}_2$  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  $40 \mu\text{g}/\text{m}^3$  in 2020. There are no instances of the annual mean exceeding  $60 \mu\text{g}/\text{m}^3$  in 2020 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 within 10% of the air quality objective (i.e. any site above  $36 \mu\text{g}/\text{m}^3$  and therefore close to, but not above, the objective level of  $40 \mu\text{g}/\text{m}^3$ ). The maximum annual mean concentration was  $28.9 \mu\text{g}/\text{m}^3$ , recorded at triplicate site LOW 6.

Trend graphs showing annual mean  $\text{NO}_2$  concentrations at all diffusion tube sites within the district with 5 or more years of data are presented in Appendix A: Monitoring Results, Figures A.1 to A.7.

Monitoring locations across the Council have seen a tendency for decreasing annual mean  $\text{NO}_2$  concentrations. This trend is particularly evident in diffusion tubes in the following areas:

- Woodbridge;
- Little Glemham;
- Farnham;

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- Saxmundham;
- Stratford; and
- Felixstowe.

In the following areas, trends in annual mean NO<sub>2</sub> concentration over the past 5 years have a less discernible trend, with either relatively stable or fluctuating concentrations:

- Martlesham;
- Melton;
- Kesgrave;
- Lowestoft;
- Oulton Broad;
- Bungay; and
- Beccles.

There are no areas within East Suffolk which are showing an increasing pattern.

All monitoring locations, both at the continuous analyser and across the diffusion tube network, have shown a significant reduction in annual mean NO<sub>2</sub> concentrations in 2020 compared to 2019 (20% reduction on average). This is likely due to the impact of COVID-19 and associated travel restrictions. Further details can be found in Appendix F: Impact of COVID-19 upon LAQM.

## Appendix A: Monitoring Results

**Table A.1 – Details of Automatic Monitoring Sites**

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
WBG	Woodbridge	Roadside	627596	249261	NO <sub>2</sub>	Yes	Chemiluminescent	0	1	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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
LOW 1	Belvedere Road 1	Roadside	654606	292625	NO <sub>2</sub>	No	-	2.5	No	1.9
LOW 2	1 Fir Lane (lamppost)	Roadside	653209	293785	NO <sub>2</sub>	No	6.0	0.5	No	1.8
LOW 3	8 Mill Road	Roadside	654477	292395	NO <sub>2</sub>	No	6.8	1.2	No	1.9
LOW 5	St Margaret's Church	Urban Background	654065	294200	NO <sub>2</sub>	No	-	-	No	1.7
LOW 6a, LOW 6b, LOW 6c	9 Pier Terrace	Roadside	654690	292625	NO <sub>2</sub>	No	0.0	2.5	No	1.8
LOW 7	Belvedere Rd / London Rd South	Roadside	654671	292601	NO <sub>2</sub>	No	7.0	2.5	No	1.7
LOW 8	Levington Court, London Rd South	Roadside	654660	292571	NO <sub>2</sub>	No	0.0	5.7	No	1.7
LOW 9	Lamppost at 24/26 Denmark Road	Roadside	654723	292914	NO <sub>2</sub>	No	9.4	2.3	No	1.8
LOW 10	42 Waveney Drive	Roadside	653917	292414	NO <sub>2</sub>	No	4.5	0.8	No	1.9
LOW 11	Stradbroke Road / Bloodmoor Road	Roadside	652552	290427	NO <sub>2</sub>	No	0.0	8.3	No	1.8
LOW 12	21 Rotterdam Road	Roadside	654200	294039	NO <sub>2</sub>	No	0.0	16.8	No	1.9
LOW 13	Lamppost at 252/254 Denmark Road	Kerbside	654049	292963	NO <sub>2</sub>	No	0.5	0.9	No	1.7

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
LOW 14	1 Fir Lane (house)	Roadside	653228	293811	NO <sub>2</sub>	No	0.0	9.1	No	2.0
OBR 1	Saltwater Way / Bridge Road	Roadside	652046	292503	NO <sub>2</sub>	No	6.0	3.2	No	1.9
OBR 2	31 Bridge Road (opp. Golden Court)	Roadside	652304	293021	NO <sub>2</sub>	No	0.0	4.3	No	2.0
OBR 4	12 Beccles Rd/Cotmer Road	Roadside	651869	292127	NO <sub>2</sub>	No	0.0	5.2	No	0.9
OBR 5	181 Normanston Drive	Roadside	652554	293282	NO <sub>2</sub>	No	0.0	6.4	No	1.7
BEC 1	10 Ingate (by crossing)	Roadside	642615	289909	NO <sub>2</sub>	No	0.0	1.3	No	1.8
BEC 3	Fredricks Road cycle sign	Roadside	642553	289922	NO <sub>2</sub>	No	0.0	1.5	No	1.8
BEC 4	1 Ingate	Roadside	642564	289922	NO <sub>2</sub>	No	0.0	1.3	No	1.7
BEC 5a, BEC 5b, BEC 5c	11 Ingate	Kerbside	642592	289916	NO <sub>2</sub>	No	0.0	0.9	No	1.8
BEC 6	Old Market (near bus station)	Roadside	642158	290574	NO <sub>2</sub>	No	0.0	3.0	No	1.9
BUN 1	1 Trinity Street	Roadside	633670	289817	NO <sub>2</sub>	No	0.0	1.6	No	2.0
BLY 1	A12 / Chapel Road	Roadside	645183	275218	NO <sub>2</sub>	No	0.0	1.3	No	1.8
BRAM 1	16 The Street	Roadside	639967	273904	NO <sub>2</sub>	No	0.0	1.3	No	1.8

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
HLW 1	23 Andrew Johnston Way	Roadside	638587	277112	NO <sub>2</sub>	No	0.0	7.6	No	1.7
FLX 12	119 Hamilton Road	Roadside	630363	234890	NO <sub>2</sub>	No	0.0	5.0	No	1.8
FLX 14	1 Adastral Close	Industrial	628604	232847	NO <sub>2</sub>	No	0.0	5.8	No	2.0
FLX 17	38 Spriteshall Lane, Trimley St Mary	Roadside	628817	236323	NO <sub>2</sub>	No	0.0	31.0	No	2.0
FLX 20	73 Glemsford Close	Industrial	628669	233979	NO <sub>2</sub>	No	10.0	54.0	No	2.0
FLX 21	4 Kings Fleet Road	Suburban	629253	234431	NO <sub>2</sub>	No	n/a	1.5	No	2.3
FLX 22	13 Levington Road	Industrial	629172	233446	NO <sub>2</sub>	No	0.0	9.0	No	1.8
FLX 23	23 Heathgate Piece, Trimley St Mary	Roadside	628542	236592	NO <sub>2</sub>	No	0.0	25.0	No	2.0
FLX 24	22 Brandon Road	Roadside	628358	234634	NO <sub>2</sub>	No	0.0	32.0	No	2.5
FLX 26a, FLX 26b, FLX 26c	Dooley Inn, Ferry Lane front	Roadside	627959	234246	NO <sub>2</sub>	No	0.0	13.0	No	3.4
FLX 27a, FLX 27b, FLX 27c	Dooley Inn, Ferry Lane side	Roadside	627960	234238	NO <sub>2</sub>	No	0.0	23.0	No	2.8
FLX 39	424 High Rd, Trimley St Mary	Roadside	628760	236071	NO <sub>2</sub>	No	0.0	11.0	No	1.6
TRM 3	216 High Road, Trimley St Martin	Roadside	627618	237092	NO <sub>2</sub>	No	0.0	1.8	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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
TRM 4	203 High Road, Trimley St Martin	Roadside	627613	237080	NO <sub>2</sub>	No	0.0	1.6	No	1.9
TRM 5	McColls, High Rd, Trimley St Martin	Roadside	627629	237078	NO <sub>2</sub>	No	0.0	4.2	No	1.7
TRM 8	68 High Road, Trimley St Mary	Roadside	628270	236266	NO <sub>2</sub>	No	1.8	1.4	No	1.9
TRM 10	293 High Street, Walton	Roadside	629340	235737	NO <sub>2</sub>	No	0.0	2.9	No	2.0
TRM 12	193 High Street, Walton	Roadside	629641	235529	NO <sub>2</sub>	No	0.0	2.3	No	2.0
KSG 9	118 Main Road	Roadside	621680	245796	NO <sub>2</sub>	No	-	2.6	No	1.8
KSG 10a, KSG 10b, KSG 10c	The Bell Inn, Main Road (front window)	Roadside	621815	245785	NO <sub>2</sub>	No	0.0	2.7	No	1.6
KSG 13	The Bell Inn, Main Road (downpipe set back)	Roadside	621809	245778	NO <sub>2</sub>	No	0.0	9.0	No	1.8
MEL 5	6 The Street	Roadside	628145	250417	NO <sub>2</sub>	No	0.5	3.6	No	1.9
MEL 7	28 The Street	Kerbside	628177	250478	NO <sub>2</sub>	No	0.0	0.3	No	1.7
MRT 1a, MRT 1b, MRT 1c	Horseman Court	Roadside	624633	245447	NO <sub>2</sub>	No	0.0	21.0	No	1.7
MRT 6	Main Road / School Lane	Roadside	625200	247100	NO <sub>2</sub>	No	0.3	2.0	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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
MRT 7	9 Felixstowe Road	Roadside	625009	246730	NO <sub>2</sub>	No	0.0	20.0	No	1.9
MRT 8	3 Post Office Cottages, The Street	Roadside	625290	247385	NO <sub>2</sub>	No	3.7	1.5	No	2.2
LGM 2	Carlton Lodge, Main Road	Roadside	634051	258315	NO <sub>2</sub>	No	0.0	6.3	No	1.7
FAR 1	Turret House, The Street	Roadside	636273	260134	NO <sub>2</sub>	No	0.0	1.9	No	1.8
FAR 2a, FAR 2b, FAR 2c	Post Office Stores, The Street	Roadside	636274	260120	NO <sub>2</sub>	No	0.0	1.4	No	1.9
STA 1a, STA 1b, STA 1c	1 Long Row, Main Road	Roadside	635753	260002	NO <sub>2</sub>	Yes, AQMA No. 3 - Stratford St. Andrew	0.0	2.0	No	1.6
STA 2	Road sign opposite Long Row	Roadside	635732	259995	NO <sub>2</sub>	No	-	1.7	No	1.8
STA 6	Jacobs Cottage, Main Road	Roadside	635794	260042	NO <sub>2</sub>	No	0.0	7.0	No	1.3
STA 7	30mph sign, Long Row	Roadside	635736	259984	NO <sub>2</sub>	No	-	1.9	No	1.7
STA 8a, STA 8b, STA 8c	5 Long Row, Main Road	Roadside	635743	259992	NO <sub>2</sub>	Yes, AQMA No. 3 - Stratford St. Andrew	0.0	2.0	No	1.6
THEB 1	Leiston Road (opp. Lion Inn PH)	Kerbside	643797	265815	NO <sub>2</sub>	No	1.0	0.9	No	2.0
MID 1	2 The Moor	Roadside	641611	267791	NO <sub>2</sub>	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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
YOX 1	Brook Street (outside Kings Head PH)	Roadside	639647	268740	NO <sub>2</sub>	No	0.0	1.4	No	2.0
SAX 1	30 Church Street	Roadside	638683	263014	NO <sub>2</sub>	No	0.0	1.0	No	1.8
LEI 2	Lamppost 4 Sizewell Road	Roadside	644557	262464	NO <sub>2</sub>	No	0.5	1.4	No	2.2
LEI 3	White Horse Hotel, Station Rd	Roadside	644325	262634	NO <sub>2</sub>	No	0.0	2.3	No	1.9
TUN 1	The Old Bakery, Snape Road	Kerbside	636110	255114	NO <sub>2</sub>	No	0.0	0.5	No	1.9
WBG 1a, WBG 1b, WBG 1c	93 Thoroughfare	Roadside	627596	249261	NO <sub>2</sub>	Yes, AQMA No. 1 - Woodbridge	0.0	1.3	Yes	2.4
WBG 3	8 Kingston Farm Road	Suburban	626997	248488	NO <sub>2</sub>	No	-	1.0	No	1.9
WBG 5	Suffolk Place corner	Roadside	627604	249243	NO <sub>2</sub>	No	0.0	2.5	No	2.3
WBG 8	95 Thoroughfare	Roadside	627601	249283	NO <sub>2</sub>	Yes, AQMA No. 1 - Woodbridge	1.0	1.6	No	2.4
WBG 10	St John's Street signpost	Roadside	627570	249240	NO <sub>2</sub>	No	0.5	1.2	No	2.1
WBG 12	8 Lime Kiln Quay Road	Roadside	627664	249203	NO <sub>2</sub>	No	0.5	5.0	No	1.8
WBG 13	Traffic lights at 85 Thoroughfare	Roadside	627585	249239	NO <sub>2</sub>	No	2.5	1.8	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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
WBG 18	106/108 Thoroughfare	Roadside	627627	249339	NO <sub>2</sub>	Yes, AQMA No. 1 - Woodbridge	0.0	1.1	No	2.2
WBG 20	97 Thoroughfare	Roadside	627604	249295	NO <sub>2</sub>	Yes, AQMA No. 1 - Woodbridge	0.0	2.6	No	1.9
WBG 24	29 Grove Road (Southbound)	Roadside	626026	249631	NO <sub>2</sub>	No	0.0	9.7	No	1.7
WBG 25	6 Grove Road (Northbound)	Roadside	626038	249389	NO <sub>2</sub>	No	0.0	7.8	No	2.0

**Notes:**

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

(2) N/A if not applicable.

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

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2020 (%) <sup>(2)</sup>	2016	2017	2018	2019	2020
WBG	627596	249261	Roadside	99	99	37	37	32	31	25

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

**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/m<sup>3</sup>.

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

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

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

**Table A.4 – Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>)**

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2020 (%) <sup>(2)</sup>	2016	2017	2018	2019	2020
LOW 1	654606	292625	Roadside	100	100.0	28.5	33.8	27.2	28.0	22.1
LOW 2	653209	293785	Roadside	100	100.0	23.3	20.4	25.4	29.5	23.9
LOW 3	654477	292395	Roadside	100	100.0	20.7	24.4	23.3	20.3	15.8
LOW 5	654065	294200	Urban Background	100	100.0	15.0	14.7	13.5	13.7	10.6
LOW 6a, LOW 6b, LOW 6c	654690	292625	Roadside	100	100.0	37.5	36.3	34.7	33.2	28.9
LOW 7	654671	292601	Roadside	100	100.0	31.0	29.8	29.2	30.3	24.5
LOW 8	654660	292571	Roadside	100	100.0				20.7	17.3
LOW 9	654723	292914	Roadside	92.3	92.3				27.9	24.3
LOW 10	653917	292414	Roadside	100	100.0				22.6	18.3
LOW 11	652552	290427	Roadside	100	100.0				25.7	20.6
LOW 12	654200	294039	Roadside	100	100.0					12.1
LOW 13	654049	292963	Kerbside	100	84.6					16.5
LOW 14	653228	293811	Roadside	85.7	50.0					15.7
OBR 1	652046	292503	Roadside	100	100.0	26.7	25.6	26.2	27.5	20.8
OBR 2	652304	293021	Roadside	100	100.0	27.9	23.6	26.0	22.1	18.2
OBR 4	651869	292127	Roadside	100	100.0			22.0	21.8	18.1
OBR 5	652554	293282	Roadside	100	100.0				19.4	15.4
BEC 1	642615	289909	Roadside	100	100.0	27.2	27.6	24.9	23.3	17.8
BEC 3	642553	289922	Roadside	100	100.0			34.7	33.6	25.0
BEC 4	642564	289922	Roadside	100	100.0			24.2	20.8	16.7
BEC 5a, BEC 5b, BEC 5c	642592	289916	Kerbside	100	100.0			33.2	29.3	22.4
BEC 6	642158	290574	Roadside	100	100.0				21.8	13.8
BUN 1	633670	289817	Roadside	100	100.0	28.9	26.4	25.7	26.1	20.9
BLY 1	645183	275218	Roadside	100	100.0				28.2	20.8
BRAM 1	639967	273904	Roadside	100	100.0					11.7
HLW 1	638587	277112	Roadside	100	100.0					10.7
FLX 12	630363	234890	Roadside	100	100.0	23.7	25.7	24.1	23.3	19.5
FLX 14	628604	232847	Industrial	100	100.0	22.8	25.4	25.0	24.1	21.6
FLX 17	628817	236323	Roadside	100	100.0	22.0	20.8	21.2	20.4	17.1
FLX 20	628669	233979	Industrial	100	100.0	20.7	31.3	26.2	27.5	24.8
FLX 21	629253	234431	Suburban	100	100.0	19.6	21.9	19.8	20.0	17.5

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2020 (%) <sup>(2)</sup>	2016	2017	2018	2019	2020
FLX 22	629172	233446	Industrial	100	100.0	20.1	22.1	19.9	20.1	17.9
FLX 23	628542	236592	Roadside	100	100.0	26.0	21.6	27.1	24.7	20.0
FLX 24	628358	234634	Roadside	92.3	92.3	24.7	25.6	24.2	22.6	20.7
FLX 26a, FLX 26b, FLX 26c	627959	234246	Roadside	100	100.0	34.0	37.4	34.8	32.3	28.5
FLX 27a, FLX 27b, FLX 27c	627960	234238	Roadside	100	100.0	29.6	33.0	29.9	28.2	24.3
FLX 39	628760	236071	Roadside	100	100.0	22.2	23.1	22.4	22.6	18.5
TRM 3	627618	237092	Roadside	100	100.0		<b>41.1</b>	24.5	23.0	18.8
TRM 4	627613	237080	Roadside	100	100.0			26.0	25.1	21.2
TRM 5	627629	237078	Roadside	92.3	92.3			23.6	21.9	18.3
TRM 8	628270	236266	Roadside	100	100.0			27.7	27.0	22.9
TRM 10	629340	235737	Roadside	100	100.0			25.8	26.6	21.9
TRM 12	629641	235529	Roadside	100	100.0			24.7	23.7	20.2
KSG 9	621680	245796	Roadside	100	100.0	27.9	31.7	29.7	29.1	22.4
KSG 10a, KSG 10b, KSG 10c	621815	245785	Roadside	100	100.0		34.5	34.7	32.3	24.6
KSG 13	621809	245778	Roadside	100	100.0				23.8	17.9
MEL 5	628145	250417	Roadside	100	100.0	25.0	26.4	23.0	24.2	20.1
MEL 7	628177	250478	Kerbside	100	100.0	25.3	26.0	24.4	23.7	17.0
MRT 1a, MRT 1b, MRT 1c	624633	245447	Roadside	100	100.0	23.6	24.0	23.2	22.3	18.2
MRT 6	625200	247100	Roadside	100	100.0					14.2
MRT 7	625009	246730	Roadside	100	100.0					11.8
MRT 8	625290	247385	Roadside	100	100.0					13.5
LGM 2	634051	258315	Roadside	100	100.0		18.6	18.9	17.1	14.5
FAR 1	636273	260134	Roadside	100	100.0	24.9	23.7	23.5	21.2	16.7
FAR 2a, FAR 2b, FAR 2c	636274	260120	Roadside	100	100.0	28.9	27.7	27.4	24.4	18.8
STA 1a, STA 1b, STA 1c	635753	260002	Roadside	100	100.0	37.5	35.1	34.0	32.3	23.5

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2020 (%) <sup>(2)</sup>	2016	2017	2018	2019	2020
STA 2	635732	259995	Roadside	57.7	57.7	24.8	25.5	24.1	24.6	14.7
STA 6	635794	260042	Roadside	100	100.0	22.8	21.5	21.3	20.2	15.6
STA 7	635736	259984	Roadside	100	100.0	33.7	30.7	30.2	28.0	20.1
STA 8a, STA 8b, STA 8c	635743	259992	Roadside	100	100.0	<b>42.9</b>	38.8	37.7	36.2	27.1
THEB 1	643797	265815	Kerbside	100	100.0					14.7
MID 1	641611	267791	Roadside	100	100.0					8.6
YOX 1	639647	268740	Roadside	100	100.0					13.6
SAX 1	638683	263014	Roadside	100	100.0	31.5	29.9	28.7	27.8	20.4
LEI 2	644557	262464	Roadside	100	100.0	18.8	25.7	25.9	22.7	18.4
LEI 3	644325	262634	Roadside	100	100.0	20.0	21.3	22.7	21.8	17.6
TUN 1	636110	255114	Kerbside	100	100.0					12.9
WBG 1a, WBG 1b, WBG 1c	627596	249261	Roadside	100	100.0	36.9	36.7	32.8	33.7	25.2
WBG 3	626997	248488	Suburban	100	100.0	13.8	13.7	12.4	13.1	10.3
WBG 5	627604	249243	Roadside	100	100.0	22.7	21.0	20.6	20.9	16.0
WBG 8	627601	249283	Roadside	100	100.0	34.9	34.3	32.5	32.5	24.5
WBG 10	627570	249240	Roadside	100	100.0	25.3	25.1	25.7	24.3	16.9
WBG 12	627664	249203	Roadside	100	100.0	22.0	22.4	19.9	21.5	16.3
WBG 13	627585	249239	Roadside	100	100.0	31.6	28.1	27.6	27.1	20.5
WBG 18	627627	249339	Roadside	100	100.0	32.1	28.9	29.7	29.9	22.5
WBG 20	627604	249295	Roadside	100	100.0	31.8	34.0	31.0	30.3	23.5
WBG 24	626026	249631	Roadside	100	100.0					23.1
WBG 25	626038	249389	Roadside	100	100.0					18.7

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

Diffusion tube data has been bias adjusted.

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

**Notes:**

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



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

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

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

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

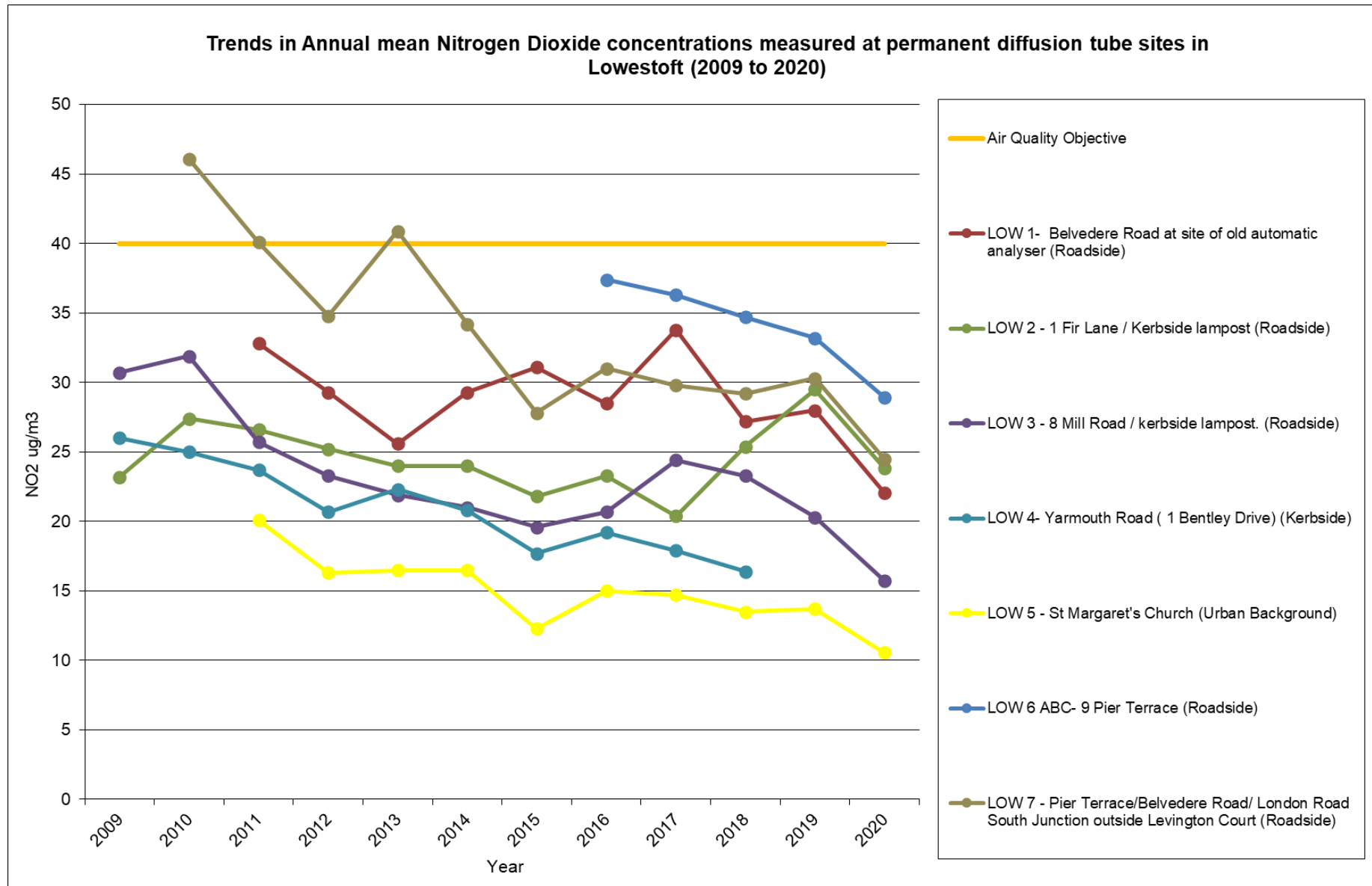


Figure A.2 – Trends in Annual Mean NO<sub>2</sub> Concentrations in Carlton Colville and Oulton Broad

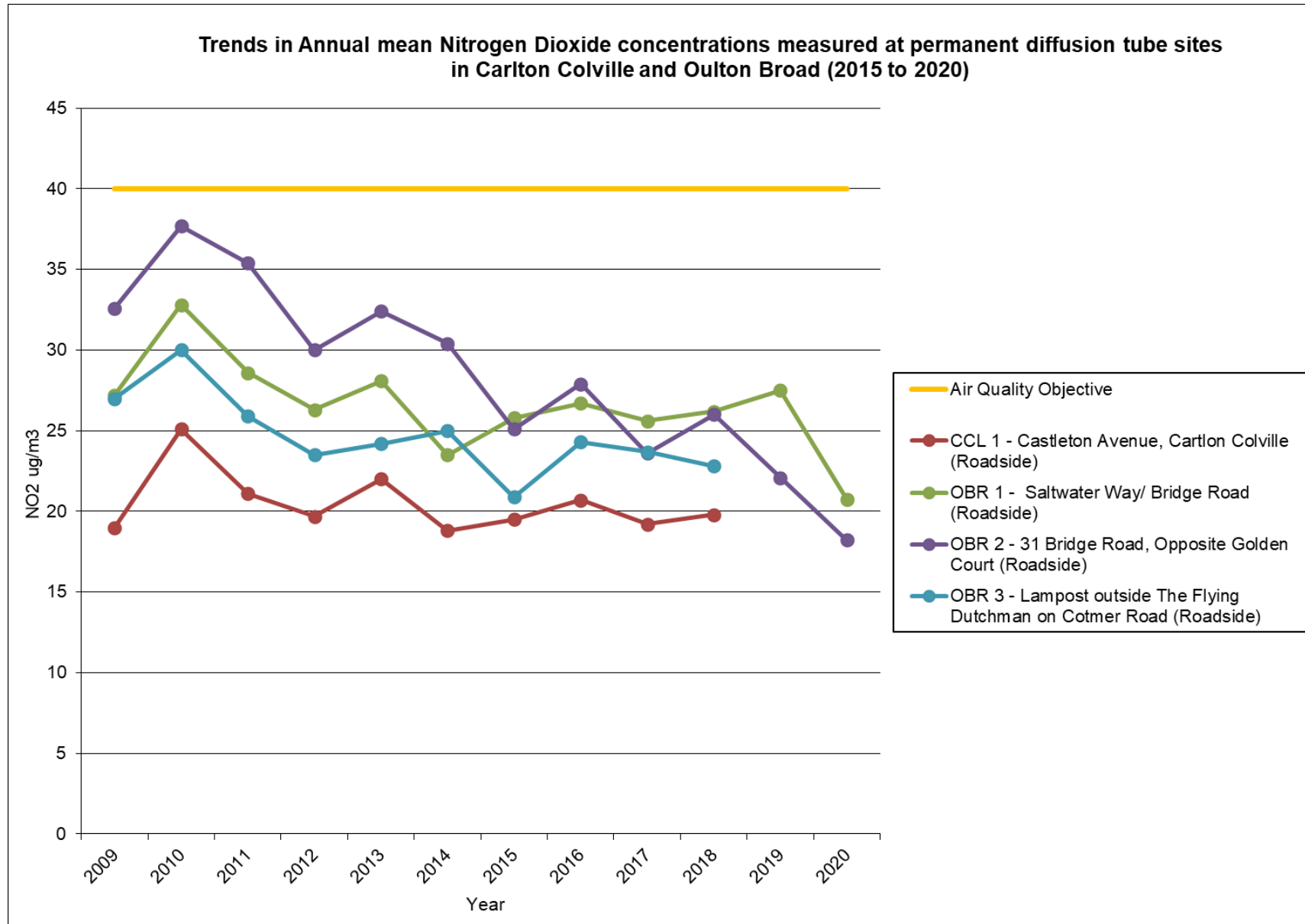


Figure A.3 – Trends in Annual Mean NO<sub>2</sub> Concentrations in Bungay and Beccles

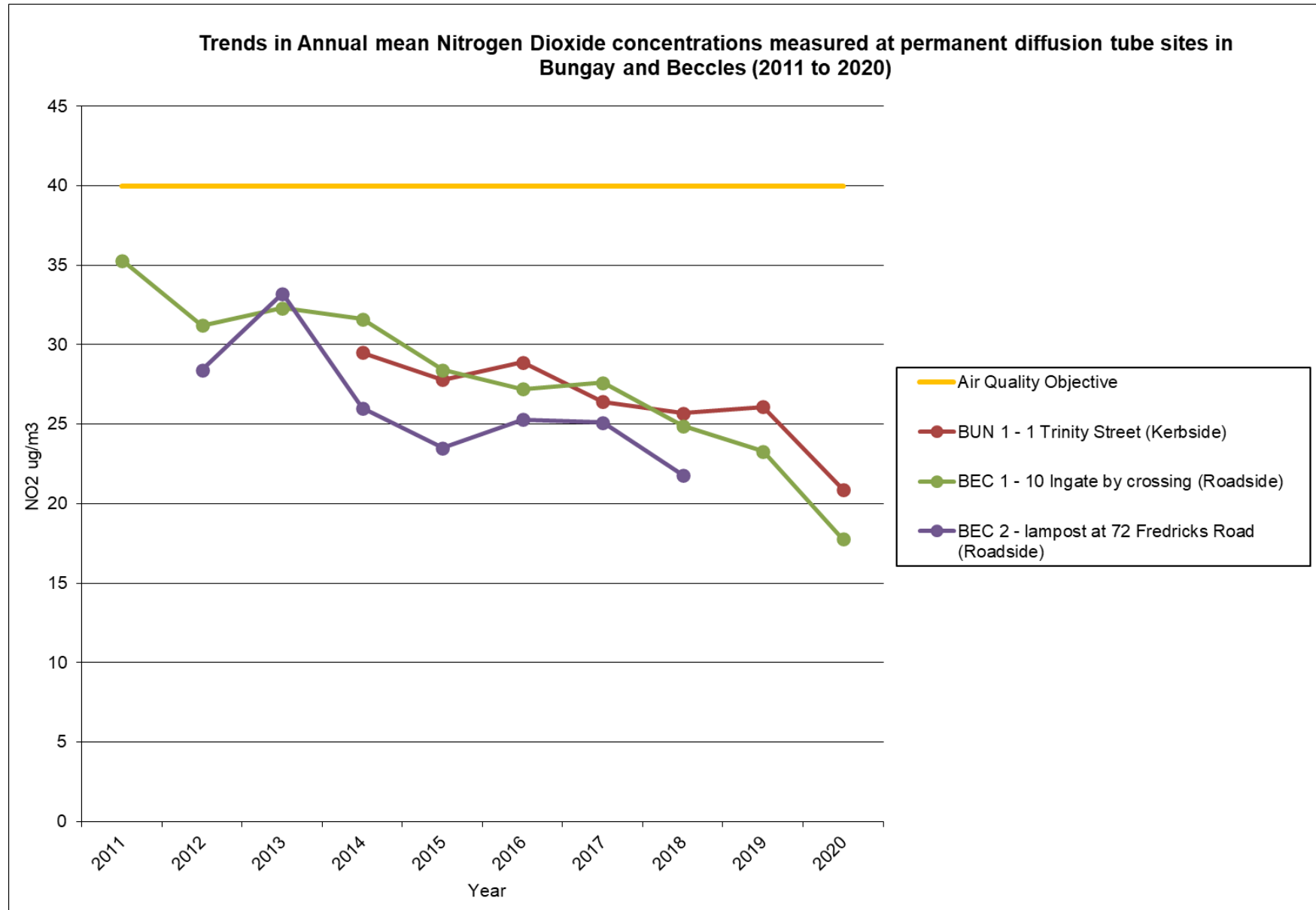


Figure A.4 – Trends in Annual Mean NO<sub>2</sub> Concentrations in Felixstowe

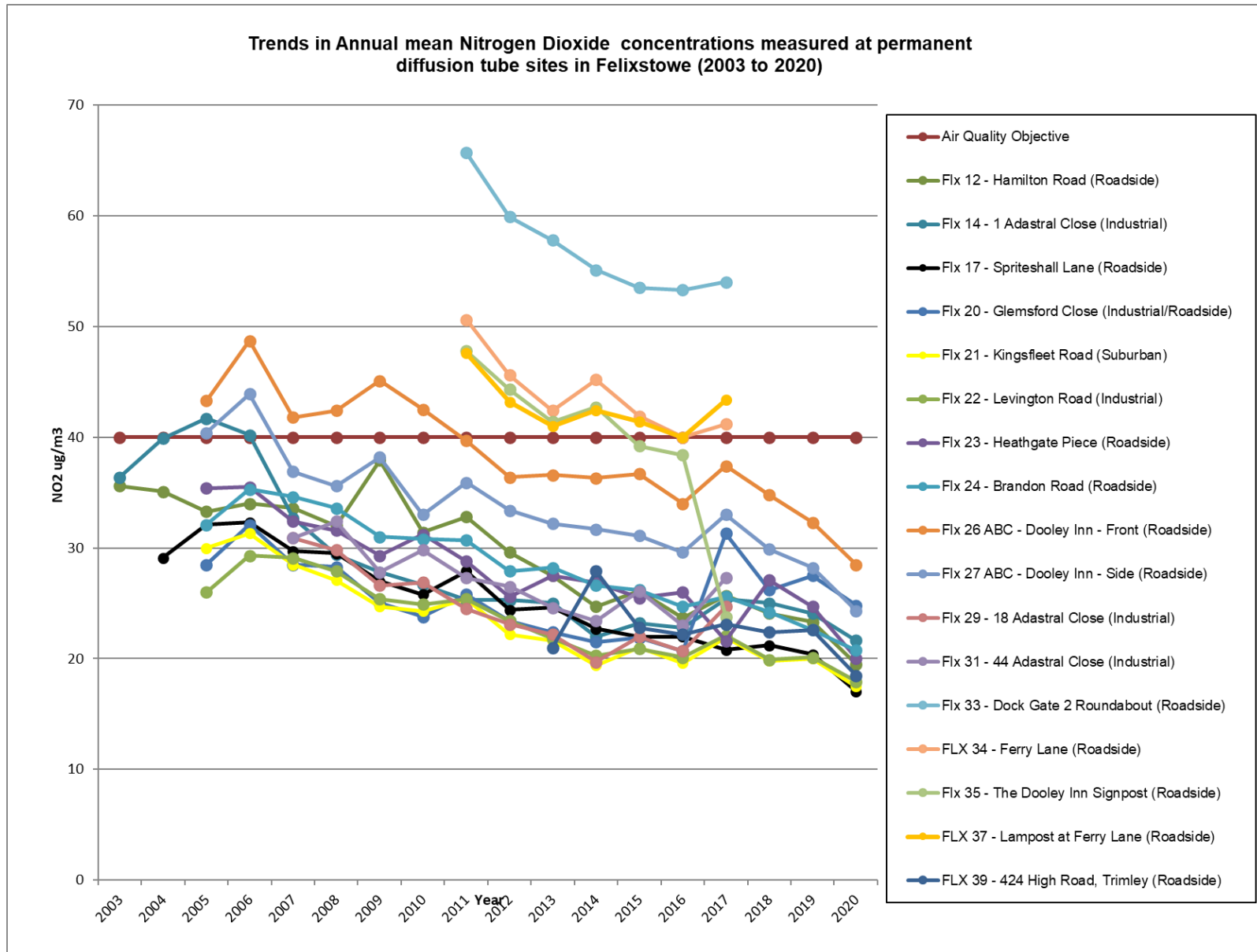


Figure A.5 – Trends in Annual Mean NO<sub>2</sub> Concentrations in Martlesham, Melton and Kesgrave

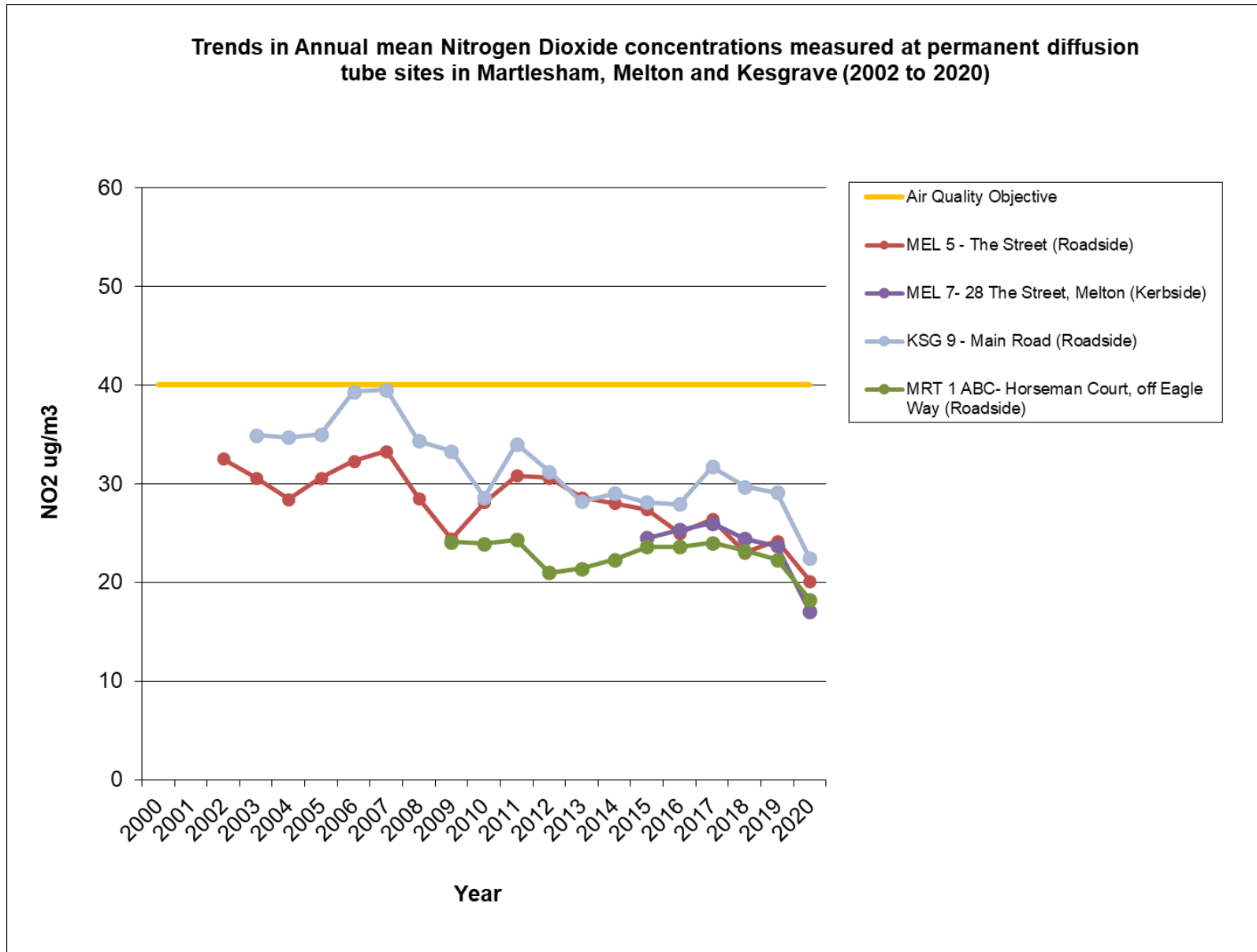


Figure A.6 – Trends in Annual Mean NO<sub>2</sub> Concentrations in Little Glemham, Farnham, Sxmundham and Stratford

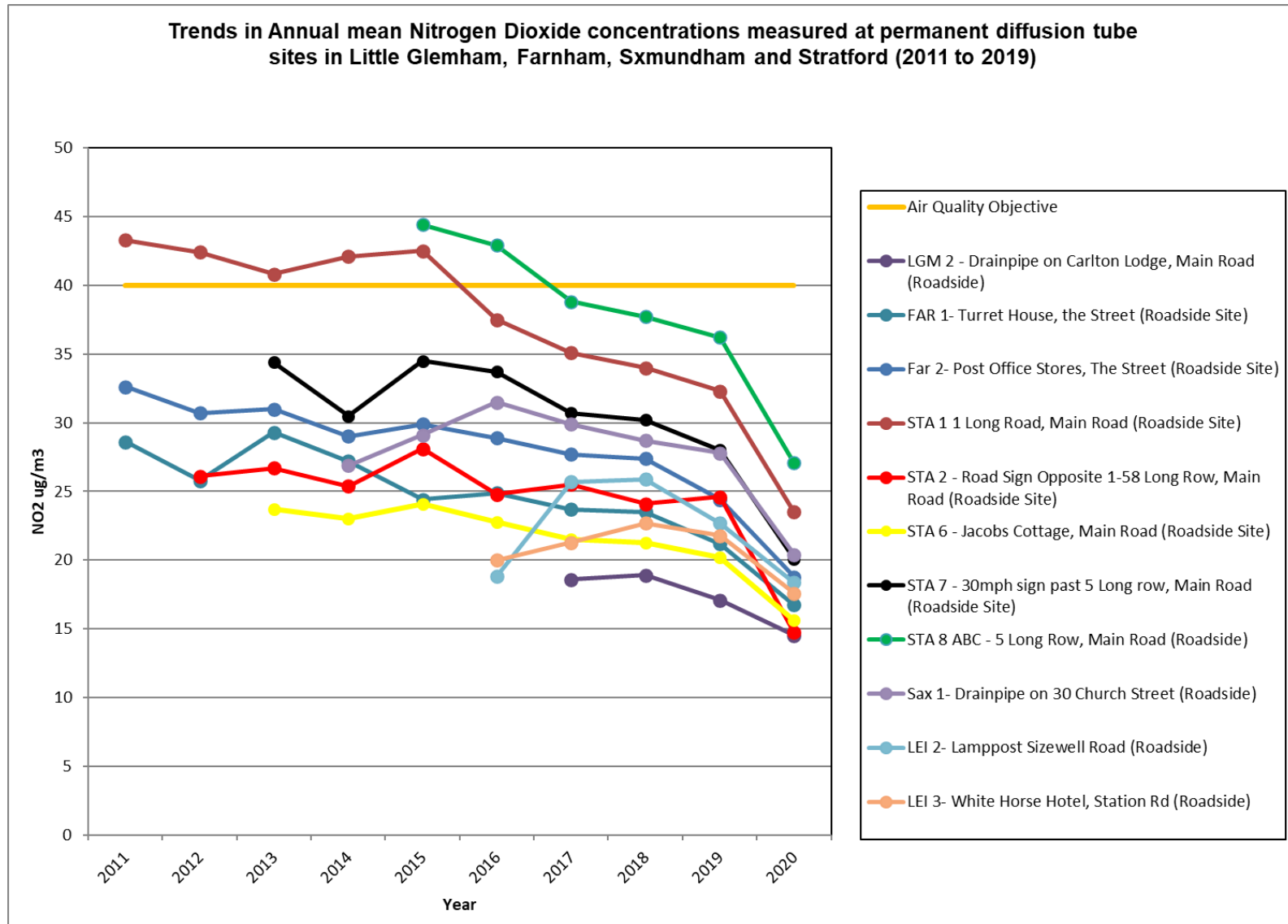
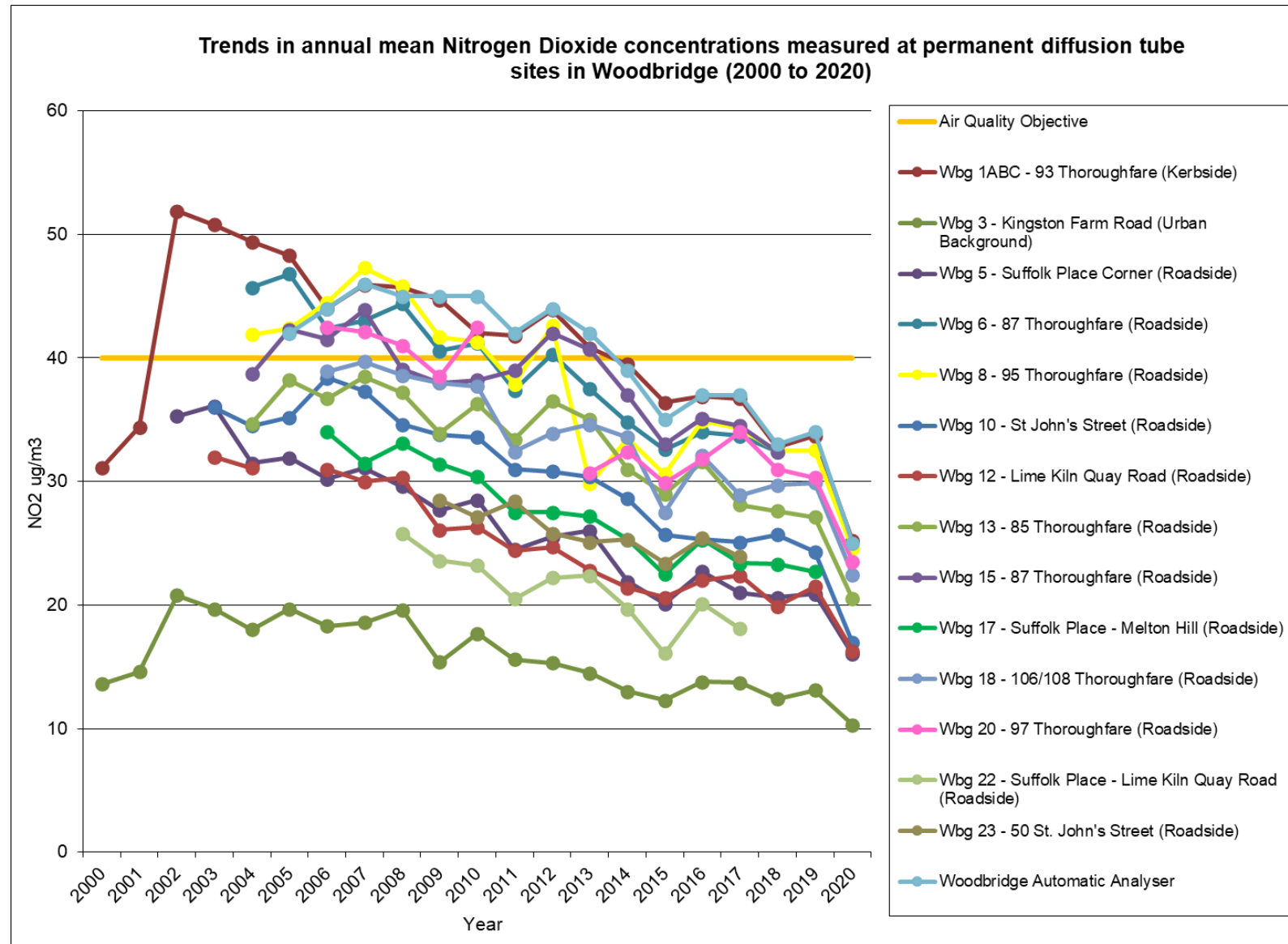


Figure A.7 – Trends in Annual Mean NO<sub>2</sub> Concentrations in Woodbridge





**Table A.5 – 1-Hour Mean NO<sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m<sup>3</sup>**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2020 (%) <sup>(2)</sup>	2016	2017	2018	2019	2020
WBG	627596	249261	Roadside	99	99	0	1	0	<b>0 (122)</b>	0

**Notes:**

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

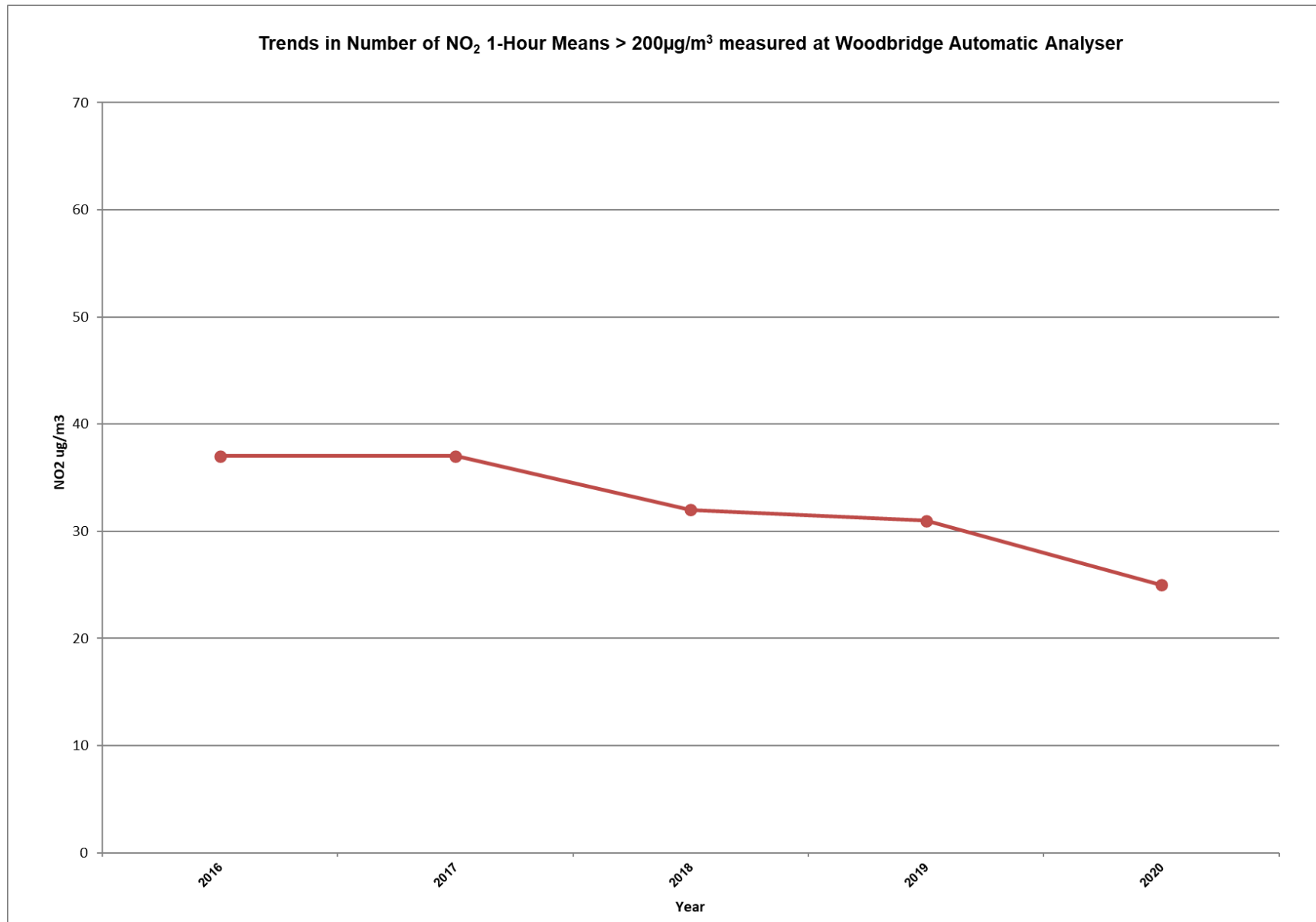
Exceedances of the NO<sub>2</sub> 1-hour mean objective (200µg/m<sup>3</sup> not to be exceeded more than 18 times/year) are shown in **bold**.

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%).

Figure A.8 – Trends in Number of NO<sub>2</sub> 1-Hour Means > 200µg/m<sup>3</sup>



## Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO<sub>2</sub> 2020 Diffusion Tube Results (µg/m<sup>3</sup>)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <sup>(1)</sup>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
LOW 1	654606	292625	43.6	32.1	22.3	24.3	22.2	28.7	20.2	28.0	27.1	29.8	40.6	29.6	29.0	22.1	-	
LOW 2	653209	293785	44.0	39.9	27.7	20.0	20.8	32.7	24.5	26.6	29.1	32.3	44.3	34.7	31.4	23.9	-	
LOW 3	654477	292395	27.4	18.3	17.6	21.0	18.1	22.2	14.3	14.6	23.2	20.4	27.9	23.7	20.7	15.8	-	
LOW 5	654065	294200	21.2	14.6	10.0	13.4	11.2	13.3	9.1	11.5	12.7	13.5	19.2	17.2	13.9	10.6	-	
LOW 6a	654690	292625	40.6	29.8	29.0	40.3	37.3	41.9	30.7	44.6	45.1	34.4	37.2	36.0	-	-	-	Triplicate Site with LOW 6a, LOW 6b and LOW 6c - Annual data provided for LOW 6c only
LOW 6b	654690	292625	46.3	35.5	33.7	40.6	39.9	38.7	31.2	44.6	41.2	37.2	43.2	41.0	-	-	-	Triplicate Site with LOW 6a, LOW 6b and LOW 6c - Annual data provided for LOW 6c only
LOW 6c	654690	292625	46.1	32.8	34.2	37.3	37.2	38.1	30.4	41.9	42.8	33.0	40.0	37.4	38.1	28.9	-	Triplicate Site with LOW 6a, LOW 6b and LOW 6c - Annual data provided for LOW 6c only
LOW 7	654671	292601	40.4	34.2	30.5	31.6	27.0	32.8	28.0	36.4	34.2	34.5	39.6	17.8	32.3	24.5	-	
LOW 8	654660	292571	31.8	24.7	18.9	20.7	19.0	22.4	13.8	23.0	22.2	23.5	28.3	25.4	22.8	17.3	-	
LOW 9	654723	292914	45.5	37.4	24.5	23.6	25.0		24.0	33.6	33.6	33.6	41.9	29.0	32.0	24.3	-	
LOW 10	653917	292414	30.9	16.8	23.3	26.3	22.5	23.8	16.1	22.8	25.9	24.7	28.2	27.1	24.0	18.3	-	
LOW 11	652552	290427	30.6	25.2	21.2	25.2	23.7	33.3	21.8	31.9	26.5	24.6	33.8	28.0	27.2	20.6	-	
LOW 12	654200	294039	12.0	17.9	13.4	18.1	16.2	18.5	10.4	12.8	15.2	17.6	23.3	15.3	15.9	12.1	-	
LOW 13	654049	292963			16.7	23.0	21.0	24.3	13.5	18.9	21.3	20.8	30.0	27.6	21.7	16.5	-	
LOW 14	653228	293811						18.6	10.4		18.5	22.0	30.6	24.7	20.8	15.7	-	
OBR 1	652046	292503	34.6	26.2	22.6	19.4	21.5	30.7	18.3	28.2	21.8	29.6	40.4	34.6	27.3	20.8	-	
OBR 2	652304	293021	27.9	20.3	20.8	26.1	21.1	25.7	17.8	25.2	24.0	23.6	30.6	24.4	24.0	18.2	-	
OBR 4	651869	292127	28.3	21.6	22.8	20.9	19.7	27.7	16.2	26.7	22.3	21.8	29.1	28.4	23.8	18.1	-	
OBR 5	652554	293282	28.7	22.1	16.7	17.7	14.9	19.7	15.2	18.6	20.7	21.8	28.2	19.4	20.3	15.4	-	
BEC 1	642615	289909	31.2	24.2	21.4	18.2	16.4	23.6	17.5	23.2	23.0	25.1	30.6	26.0	23.4	17.8	-	
BEC 3	642553	289922	47.5	37.5	27.4	21.4	23.2	29.7	30.3	28.8	40.4	35.8	38.3	34.4	32.9	25.0	-	
BEC 4	642564	289922	23.7	19.2	19.4	20.0	18.5	23.0	15.9	24.6	26.7	21.4	26.7	24.4	22.0	16.7	-	
BEC 5a	642592	289916	33.8	26.0	29.0	29.5	27.8	30.3	24.3	35.1	36.5	27.9	31.6	30.4	-	-	-	Triplicate Site with BEC 5a, BEC 5b and BEC 5c - Annual data provided for BEC 5c only
BEC 5b	642592	289916	31.6	22.0	28.9	28.2	28.3	32.8	20.5	36.4	35.4	26.8	30.2	27.1	-	-	-	Triplicate Site with BEC 5a, BEC 5b and BEC 5c - Annual data provided for BEC 5c only
BEC 5c	642592	289916	32.4	25.1	30.8	27.8	28.1	31.0	23.9	28.1	30.7	28.6	33.1	30.7	29.5	22.4	-	Triplicate Site with BEC 5a, BEC 5b and BEC 5c - Annual data provided for BEC 5c only
BEC 6	642158	290574	27.1	23.4	10.1	15.6	12.1	16.7	12.3	16.4	16.3	20.9	25.0	21.6	18.1	13.8	-	
BUN 1	633670	289817	38.6	23.7	25.2	25.5	24.0	26.8	20.4	27.9	27.9	27.2	33.4	29.3	27.5	20.9	-	
BLY 1	645183	275218	30.1	22.3	20.6	23.9	23.1	31.1	23.3	37.6	31.9	27.6	33.7	23.3	27.4	20.8	-	
BRAM 1	639967	273904	16.9	14.8	14.2	13.9	11.9	17.0	10.4	14.5	16.7	16.5	19.4	18.1	15.4	11.7	-	
HLW 1	638587	277112	17.5	12.1	14.1	13.9	11.0	14.7	9.6	13.8	14.3	14.9	19.7	14.0	14.1	10.7	-	
FLX 12	630363	234890	39.2	30.5	21.8	19.6	17.5	22.5	20.8	20.9	29.0	25.1	35.8	25.4	25.7	19.5	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <sup>(1)</sup>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
FLX 14	628604	232847	43.7	32.9	23.7	25.3	22.7	22.6	24.5	22.2	31.8	29.0	36.0	27.2	28.5	21.6	-	
FLX 17	628817	236323	29.7	20.8	18.8	24.3	19.8	21.0	15.5	22.4	20.6	21.1	32.1	23.2	22.4	17.1	-	
FLX 20	628669	233979	60.8	38.5	27.4	20.6	18.8	27.2	29.0	26.9	29.5	39.6	38.2	35.1	32.6	24.8	-	
FLX 21	629253	234431	38.5	26.8	20.5	19.0	14.9	19.0	17.0	17.9	22.8	21.7	35.1	22.9	23.0	17.5	-	
FLX 22	629172	233446	35.6	27.8	21.5	19.6	17.9	21.1	20.2	17.2	25.4	21.4	31.6	23.9	23.6	17.9	-	
FLX 23	628542	236592	29.1	20.0	23.1	32.1	30.9	29.9	18.0	32.4	25.4	22.8	32.0	20.8	26.4	20.0	-	
FLX 24	628358	234634	43.2	31.7		22.0	18.5	21.1	21.3	18.8	27.0	29.8	36.9	30.0	27.3	20.7	-	
FLX 26a	627959	234246	50.9	31.9	33.8	31.0	26.7	30.0	29.0	35.7	40.4	41.2	41.8	38.9	-	-	-	Triplicate Site with FLX 26a, FLX 26b and FLX 26c - Annual data provided for FLX 26c only
FLX 26b	627959	234246	52.8	41.1	37.2	34.4	30.3	32.7	30.4	37.6	42.3	45.0	48.1	42.3	-	-	-	Triplicate Site with FLX 26a, FLX 26b and FLX 26c - Annual data provided for FLX 26c only
FLX 26c	627959	234246	48.9	40.6	37.1	36.6	33.6	31.2	28.1	33.4	44.8	32.9	48.8	28.6	37.5	28.5	-	Triplicate Site with FLX 26a, FLX 26b and FLX 26c - Annual data provided for FLX 26c only
FLX 27a	627960	234238	47.3	37.0	30.9	26.7	24.1	25.2	25.4	28.6	32.7	33.5	38.5	31.5	-	-	-	Triplicate Site with FLX 27a, FLX 27b and FLX 27c - Annual data provided for FLX 27c only
FLX 27b	627960	234238	49.7	37.3	20.2	26.5	24.7	27.6	26.0	30.1	35.7	37.7	28.6	36.1	-	-	-	Triplicate Site with FLX 27a, FLX 27b and FLX 27c - Annual data provided for FLX 27c only
FLX 27c	627960	234238	51.1	31.5	29.4	30.2	24.2	27.6	27.1	30.5	38.3	29.6	40.4	31.3	32.0	24.3	-	Triplicate Site with FLX 27a, FLX 27b and FLX 27c - Annual data provided for FLX 27c only
FLX 39	628760	236071	30.9	21.3	22.3	24.0	19.3	21.8	17.4	23.4	26.5	25.0	34.1	25.9	24.3	18.5	-	
TRM 3	627618	237092	30.6	21.4	20.8	21.3	17.3	21.5	18.1	27.8	26.3	24.9	37.6	29.7	24.8	18.8	-	
TRM 4	627613	237080	41.2	26.0	24.6	22.9	18.5	24.5	21.8	26.0	26.3	30.5	41.0	30.8	27.8	21.2	-	
TRM 5	627629	237078	31.1	20.7	18.5		20.0	22.5	17.5	25.4	24.8	24.1	31.7	27.9	24.0	18.3	-	
TRM 8	628270	236266	39.5	31.9	23.7	23.2	20.8	24.9	23.4	27.9	29.7	35.7	44.9	35.9	30.1	22.9	-	
TRM 10	629340	235737	45.5	31.4	26.6	21.7	18.4	23.2	21.0	22.5	26.3	34.7	41.8	32.7	28.8	21.9	-	
TRM 12	629641	235529	42.6	25.2	24.3	20.7	17.8	23.2	21.2	24.3	27.1	28.7	34.4	29.8	26.6	20.2	-	
KSG 9	621680	245796	49.2	37.3	25.4	17.3	18.8	26.6	24.3	26.2	31.6	32.3	33.5	31.7	29.5	22.4	-	
KSG 10a	621815	245785	43.9	27.9		25.6	24.1	29.3	21.8	34.2	35.2	31.1	36.5	36.1	-	-	-	Triplicate Site with KSG 10a, KSG 10b and KSG 10c - Annual data provided for KSG 10c only
KSG 10b	621815	245785	46.2	29.6	28.7	23.9	26.5	32.6	25.3	34.9	37.1	33.3	35.9	35.2	-	-	-	Triplicate Site with KSG 10a, KSG 10b and KSG 10c - Annual data provided for KSG 10c only
KSG 10c	621815	245785	45.5	31.2	30.8	27.0	25.3	31.5	26.7	34.9	37.0	35.8	36.2	36.5	32.3	24.6	-	Triplicate Site with KSG 10a, KSG 10b and KSG 10c - Annual data provided for KSG 10c only
KSG 13	621809	245778	32.8	23.8	21.4	19.5	17.9	23.3	18.1	23.3	25.3	18.2	31.2	28.5	23.6	17.9	-	
MEL 5	628145	250417	42.3	31.6	24.2	17.9	19.3	22.8	20.8	23.2	25.7	29.5	31.9	28.9	26.5	20.1	-	
MEL 7	628177	250478	38.8	22.1	22.3	14.1	14.7	22.1	17.1	23.5	23.2	24.6	31.1	15.0	22.4	17.0	-	
MRT 1a	624633	245447	32.1	25.8	21.7	18.2	18.9	24.5	18.5	25.7	24.1	23.9	23.2	25.1	-	-	-	Triplicate Site with MRT 1a, MRT 1b and MRT 1c - Annual data provided for MRT 1c only
MRT 1b	624633	245447	32.8	29.5	23.3	18.5	18.7	23.6	19.9	25.9	26.1	25.0	24.1	23.4	-	-	-	Triplicate Site with MRT 1a, MRT 1b and MRT 1c - Annual data provided for MRT 1c only
MRT 1c	624633	245447	33.3	27.1	21.9	17.3	20.2	24.8	19.5	25.6	24.5	25.5	27.3	23.8	24.0	18.2	-	Triplicate Site with MRT 1a, MRT 1b and MRT 1c - Annual data provided for MRT 1c only
MRT 6	625200	247100	29.9	20.4	16.3	13.7	12.9	14.9	13.5	17.1	21.3	19.2	22.1	22.5	18.7	14.2	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <sup>(1)</sup>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
MRT 7	625009	246730	27.5	18.5	13.2	10.4	9.2	12.4	9.6	10.2	14.4	17.1	23.0	21.0	15.5	11.8	-	
MRT 8	625290	247385	29.8	18.5	17.2	12.4	13.3	15.6	11.2	16.0	17.8	19.8	22.7	19.5	17.8	13.5	-	
LGM 2	634051	258315	30.2	20.1	18.7	13.8	11.4	18.6	15.8	16.8	19.1	19.8	27.3	17.7	19.1	14.5	-	
FAR 1	636273	260134	27.8	19.3	22.7	17.2	17.3	18.3	19.4	25.0	25.8	23.1	25.4	22.9	22.0	16.7	-	
FAR 2a	636274	260120	35.1	20.5	22.9	15.6	15.8	23.0	20.3	29.4	28.2	29.7	30.3	22.9	-	-	-	Triplicate Site with FAR 2a, FAR 2b and FAR 2c - Annual data provided for FAR 2c only
FAR 2b	636274	260120	35.2	23.1	21.1	18.3	17.6	23.4	19.7	28.6	27.9	27.3	31.0	24.9	-	-	-	Triplicate Site with FAR 2a, FAR 2b and FAR 2c - Annual data provided for FAR 2c only
FAR 2c	636274	260120	33.7	21.4	23.9	14.9	17.6	23.2	19.8	28.0	27.5	28.4	30.3	28.9	24.7	18.8	-	Triplicate Site with FAR 2a, FAR 2b and FAR 2c - Annual data provided for FAR 2c only
STA 1a	635753	260002	42.3	30.9	29.6	19.4	21.6	27.9	25.1	36.7	31.3	29.2	34.6	29.9	-	-	-	Triplicate Site with STA 1a, STA 1b and STA 1c - Annual data provided for STA 1c only
STA 1b	635753	260002	46.6	31.4	28.5	21.1	19.2	31.0	27.0	38.2	32.5	36.0	37.4	33.9	-	-	-	Triplicate Site with STA 1a, STA 1b and STA 1c - Annual data provided for STA 1c only
STA 1c	635753	260002	46.5	32.7	29.9	22.0	21.9	31.6	26.7	34.9	25.1	30.7	40.2	29.5	30.9	23.5	-	Triplicate Site with STA 1a, STA 1b and STA 1c - Annual data provided for STA 1c only
STA 2	635732	259995	36.0	23.4	20.7	15.6	15.5						27.2	21.2	22.8	14.7	-	
STA 6	635794	260042	26.5	19.3	20.1	15.8	16.3	21.6	16.9	25.8	21.4	19.8	23.1	20.4	20.6	15.6	-	
STA 7	635736	259984	34.5	24.2	22.1	20.6	21.9	26.4	23.5	35.0	26.9	27.2	31.2	24.0	26.5	20.1	-	
STA 8a	635743	259992	45.6	33.1	30.2	21.3	25.3	35.3	28.1	43.4	35.6	27.7	36.5	34.9	-	-	-	Triplicate Site with STA 8a, STA 8b and STA 8c - Annual data provided for STA 8c only
STA 8b	635743	259992	50.4	33.9	34.5	24.7	24.6	34.6	29.8	48.6	35.2	41.6	41.2	38.4	-	-	-	Triplicate Site with STA 8a, STA 8b and STA 8c - Annual data provided for STA 8c only
STA 8c	635743	259992	52.8	32.3	34.8	25.7	24.4	36.2	31.4	48.1	38.8	42.4	44.3	37.0	35.6	27.1	-	Triplicate Site with STA 8a, STA 8b and STA 8c - Annual data provided for STA 8c only
THEB 1	643797	265815	30.0	19.1	17.5	14.5	10.7	16.6	14.6	16.6	19.4	19.3	23.6	29.5	19.3	14.7	-	
MID 1	641611	267791	16.6	9.7	10.0	12.2	8.3	11.8	6.9	10.4	10.2	10.0	16.7	13.2	11.3	8.6	-	
YOX 1	639647	268740	29.5	18.2	17.0	13.4	11.2	16.1	13.7	15.0	18.1	18.7	23.6	20.0	17.9	13.6	-	
SAX 1	638683	263014	36.0	23.5	23.6	21.1	19.1	23.1	21.0	28.6	29.7	29.6	35.5	31.5	26.9	20.4	-	
LEI 2	644557	262464	33.7	20.4	20.1	19.9	19.5	24.1	18.6	25.3	24.1	21.5	33.4	29.4	24.2	18.4	-	
LEI 3	644325	262634	31.8	17.6	20.7	20.8	20.4	22.5	16.6	24.0	25.2	24.7	29.6	24.0	23.2	17.6	-	
TUN 1	636110	255114	24.6	17.6	18.0	12.7	12.8	15.4	13.6	16.3	18.2	16.5	19.7	18.3	17.0	12.9	-	
WBG 1a	627596	249261	43.6	30.3	28.3	19.0	19.8	23.8	25.7	29.4	29.9	30.8	35.3	33.7	-	-	-	Triplicate Site with WBG 1a, WBG 1b and WBG 1c - Annual data provided for WBG 1c only
WBG 1b	627596	249261	43.5	35.7	28.6	20.6	20.0	25.6	24.0	31.0	31.2	31.8	35.1	34.4	-	-	-	Triplicate Site with WBG 1a, WBG 1b and WBG 1c - Annual data provided for WBG 1c only
WBG 1c	627596	249261	47.8	33.2	29.7	20.1	21.6	26.5	27.0	28.0	32.3	29.2	37.1	36.2	30.0	25.2	-	Triplicate Site with WBG 1a, WBG 1b and WBG 1c - Annual data provided for WBG 1c only
WBG 3	626997	248488	19.2	10.7	11.1	11.2	8.1	10.4	7.8	9.8	11.5	13.6	16.8	17.1	12.3	10.3	-	
WBG 5	627604	249243	25.4	16.7	19.7	17.4	15.5	17.5	12.2	19.7	18.5	19.2	24.3	22.5	19.1	16.0	-	
WBG 8	627601	249283	43.6	33.5	25.9	19.3	20.2	23.3	23.3	29.6	32.6	31.8	35.3	32.1	29.2	24.5	-	
WBG 10	627570	249240	27.5	20.0	21.1	13.2	16.5	19.8	13.7	22.7	20.2	17.0	24.7	25.6	20.2	16.9	-	
WBG 12	627664	249203	31.9	21.7	16.3	13.0	12.6	16.4	14.7	16.2	19.2	21.0	26.5	23.0	19.4	16.3	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <sup>(1)</sup>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
WBG 13	627585	249239	34.7	24.6	24.0	19.4	17.2	21.2	18.9	23.8	25.3	23.5	30.6	29.5	24.4	20.5	-	
WBG 18	627627	249339	35.1	23.7	24.1	21.5	21.0	25.9	16.7	30.2	26.9	28.7	33.6	33.2	26.7	22.5	-	
WBG 20	627604	249295	44.4	31.1	24.8	17.7	22.8	24.4	21.1	24.6	29.0	31.1	32.8	32.0	28.0	23.5	-	
WBG 24	626026	249631	36.1	22.7	25.4	21.1	20.6	31.9	18.8	31.9	26.8	31.1	34.6	29.3	27.5	23.1	-	
WBG 25	626038	249389	35.9	28.0	19.7	14.9	13.7	17.4	19.0	19.3	23.8	22.3	28.6	23.8	22.2	18.7	-	

- All erroneous data has been removed from the NO<sub>2</sub> diffusion tube dataset presented in Table B.1.
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.
- Local bias adjustment factor used (Woodbridge Sites).
- National bias adjustment factor used (Other Sites).
- Where applicable, data has been distance corrected for relevant exposure in the final column.
- East Suffolk Council confirm that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

**Notes:**

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

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

<sup>(1)</sup> 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 2020**

East Suffolk Council has not identified any new sources relating to air quality within the reporting year of 2020.

### **Additional Air Quality Works Undertaken by East Suffolk Council During 2020**

East Suffolk Council has not completed any additional works within the reporting year of 2020.

### **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.TG(16) paragraphs 7.178-7.198, and in accordance with the “NO<sub>2</sub> Diffusion Tubes for LAQM: Guidance Note for Local Authorities”.

The analytical laboratory used for supply and analysis of NO<sub>2</sub> 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 laboratory is formally accredited under UKAS.

The samples were analysed in accordance with SOCOTEC standard operating procedure ANU/SOP/1015 issue 1, which meets the guidelines set out in Defra’s ‘Diffusion Tubes For Ambient NO<sub>2</sub> 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 diffusion

tubes are stored and installed in accordance with the “NO<sub>2</sub> Diffusion Tubes for LAQM: Guidance Note for Local Authorities”.

SOCOTEC participates in the Defra promoted independent analytical proficiency testing (PT) scheme AIR-PT<sup>7</sup>. to check analytical performance. This is operated by LGC Standards and supported by the Health and Safety Laboratory. AIR-PT started in 2014 and combines two long running proficiency testing schemes: LGC Standards STACKS PT scheme and HSL Workplace Analysis Scheme for Proficiency (WASP) PT scheme. For NO<sub>2</sub> diffusion tubes, the test sample types used are called AIR NO<sub>2</sub> and these are distributed to participating laboratories on a quarterly basis.

With consent from participating laboratories, LGC Standards provides a summary of the proficiency testing data to the LAQM Helpdesk updated on a quarterly basis following completion of each AIR-PT round. This information is hosted on their webpages at <http://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html>.

In the most recent AIR NO<sub>2</sub> PT rounds AR042, 40, 36, 34, 33 and 31 SOCOTEC Didcot achieved 100.0% satisfactory scores. In prior AIR NO<sub>2</sub> PT rounds AR0030 SOCOTEC Didcot achieved an 87.5% satisfactory score.

At the end of the monitoring period any erroneous data was deleted, and the annual average 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. Following this, distance correction was not required with all concentrations below 36µg/m<sup>3</sup> at all relevant receptors. Further details of all stages are outlined in the following text.

### Diffusion Tube Annualisation

Two diffusion tube monitoring locations within East Suffolk Council recorded data capture of <75%: LOW 14 and STA 2. For these sites, the mean of the 2020 data has been

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<sup>7</sup> LGC (2019) Summary of Laboratory Performance in AIR NO<sub>2</sub> Proficiency Testing Scheme (April 2017 – February 2019) Available at: <https://laqm.defra.gov.uk/assets/laqmno2performancedatauptofebruary2019v1.pdf>



“annualised” using the procedure set out in LAQM.TG(16) Box 7.9. 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 2020; and
- Data used for the calculations are set out in Table C.2.

### Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2020 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG16 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from  $NO_x/NO_2$  continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Historically, the local bias adjustment factor obtained from the Woodbridge co-location study has been used to adjust annual mean  $NO_2$  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 is then used for all other locations in the district. This has also been applied during 2020 – the local Bias adjustment factor for Woodbridge (0.84) has been used to adjust sites in Woodbridge only and all other sites within the district have been adjusted using the national bias adjustment factor (0.76). Table C.3 presents the calculation of the Woodbridge area local bias adjustment factor. Version 06/21 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.

**Figure C. 1 National Bias Adjustment Factor Calculation for ESC 2020**

National Diffusion Tube Bias Adjustment Factor Spreadsheet						Spreadsheet Version Number: 06/21				
Follow the steps below in the correct order to show the results of relevant co-location studies						This spreadsheet will be updated at the end of Sept 2021				
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.						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 <sup>3</sup> shown in blue at the foot of the final column.							
If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data.	If you have your own co-location study then see footnote <sup>4</sup> . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953							
Analysed By <sup>1</sup>	Method <sup>2</sup> <small>From de year selection, choose (All) from the pop-up list</small>	Year <sup>3</sup> <small>From de year selection, choose (All)</small>	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m <sup>3</sup> )	Automatic Monitor Mean Conc. (Cm) (µg/m <sup>3</sup> )	Bias (B)	Tube Precision <sup>4</sup>	Bias Adjustment Factor (A) (Cm/Dm)
SOCOTEC Didcot	50% TEA in acetone	2020	R	East Suffolk Council	12	30	25	19.6%	G	<b>0.84</b>
SOCOTEC Didcot	50% TEA in acetone	2020	UB	Canterbury City Council	10	13	10	28.1%	G	<b>0.78</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	Canterbury City Council	9	26	20	29.6%	G	<b>0.77</b>
SOCOTEC Didcot	50% TEA in acetone	2020	UB	Kingston upon Hull City Council	12	24	18	34.8%	G	<b>0.74</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	Ipswich Borough Council	12	27	21	28.5%	G	<b>0.78</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	Ipswich Borough Council	12	36	26	36.3%	G	<b>0.73</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	Thanet District Council	9	20	17	21.2%	G	<b>0.83</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	Medway Council	12	26	18	41.7%	G	<b>0.71</b>
SOCOTEC Didcot	50% TEA in acetone	2020	B	Medway Council	11	20	10	96.3%	G	<b>0.51</b>
SOCOTEC Didcot	50% TEA in acetone	2020	B	Gravesham Borough Council	12	23	22	5.6%	G	<b>0.95</b>
SOCOTEC Didcot	50% TEA in acetone	2020	B	Gravesham Borough Council	12	27	24	16.1%	G	<b>0.86</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	Monmouthshire County Council	10	32	24	35.3%	G	<b>0.74</b>
SOCOTEC Didcot	50% TEA in acetone	2020	UL	North Lincolnshire Council	13	16	14	26.6%	G	<b>0.79</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	City of York Council	12	24	19	29.0%	G	<b>0.78</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	City of York Council	11	22	17	34.3%	G	<b>0.74</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	City of York Council	12	33	23	40.4%	G	<b>0.71</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	Cambridge City Council	10	30	20	47.6%	G	<b>0.68</b>
SOCOTEC Didcot	50% TEA in acetone	2020	R	Wrexham County Borough Council	9	17	13	26.6%	G	<b>0.79</b>
SOCOTEC Didcot	50% TEA in acetone	2020	KS	Marlebone Road Intercomparison	11	59	43	38.0%	G	<b>0.72</b>
Socotec Didcot	50% TEA in acetone	2020	R	Horsham District Council	10	23	23	2.2%	G	<b>0.98</b>
Socotec Didcot	50% TEA in acetone	2020	R	Horsham District Council	12	22	19	18.6%	G	<b>0.84</b>
Socotec Didcot	50% TEA in acetone	2020	R	Horsham District Council	9	25	18	42.0%	G	<b>0.70</b>
Socotec Didcot	50% TEA in acetone	2020	R	Dacorum Borough Council	10	24	19	25.2%	G	<b>0.80</b>
Socotec Didcot	50% TEA in acetone	2020	R	Huntingdonshire District Council	12	36	25	47.1%	G	<b>0.68</b>
SOCOTEC Didcot	50% TEA in acetone	2020		<b>Overall Factor<sup>3</sup> (24 studies)</b>					<b>Use</b>	<b>0.76</b>

A summary of bias adjustment factors used by East Suffolk Council over the past five years is presented in

Table C.1.

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

Year	Woodbridge Area		All Other Areas		
	Local or National	Adjustment Factor	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
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
2017	-	-	-	-	-
2016	-	-	-	-	-

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

No diffusion tube NO<sub>2</sub> monitoring locations within East Suffolk Council required distance correction during 2020.

### QA/QC of Automatic Monitoring

NO<sub>2</sub> concentrations were monitored by ozone chemiluminescence in Woodbridge in ESC. 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. 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<sub>x</sub> 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 data set was screened, scaled and validated using all available routine site calibrations, audit results and service engineer records. This was an ongoing process with checks made

daily to ensure high data capture is achieved. 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%.

### **Automatic Monitoring Annualisation**

All automatic monitoring locations within East Suffolk Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

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

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

No NO<sub>2</sub> monitoring locations within East Suffolk Council required distance correction during 2020 as all sites were above 36 µg/m<sup>3</sup> and therefore not at risk of exceeding the annual mean objective.

**Table C.2 – Annualisation Summary (concentrations presented in  $\mu\text{g}/\text{m}^3$ )**

Site ID	Annualisation Factor Wicken Fen	Annualisation Factor St Osyth	Annualisation Factor Norwich Lakenfields	Annualisation Factor Site 4 Name	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
LOW 14	0.9806	0.9854	1.0112		0.9924	20.8	20.6	
STA 2	0.8118	0.9025	0.8391		0.8511	22.8	19.4	

**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
<b>Periods used to calculate bias</b>	12				
<b>Bias Factor A</b>	0.84 (0.78 - 0.91)				
<b>Bias Factor B</b>	19% (10% - 29%)				
<b>Diffusion Tube Mean (<math>\mu\text{g}/\text{m}^3</math>)</b>	19				
<b>Mean CV (Precision)</b>	30.0				
<b>Automatic Mean (<math>\mu\text{g}/\text{m}^3</math>)</b>	4.7%				
<b>Data Capture</b>					
<b>Adjusted Tube Mean (<math>\mu\text{g}/\text{m}^3</math>)</b>	25.1				

**Notes:**

A single local bias adjustment factor has been used to bias adjust the 2020 diffusion tube results within the Woodbridge area.

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

Figure D. 1 Felixstowe Map 1

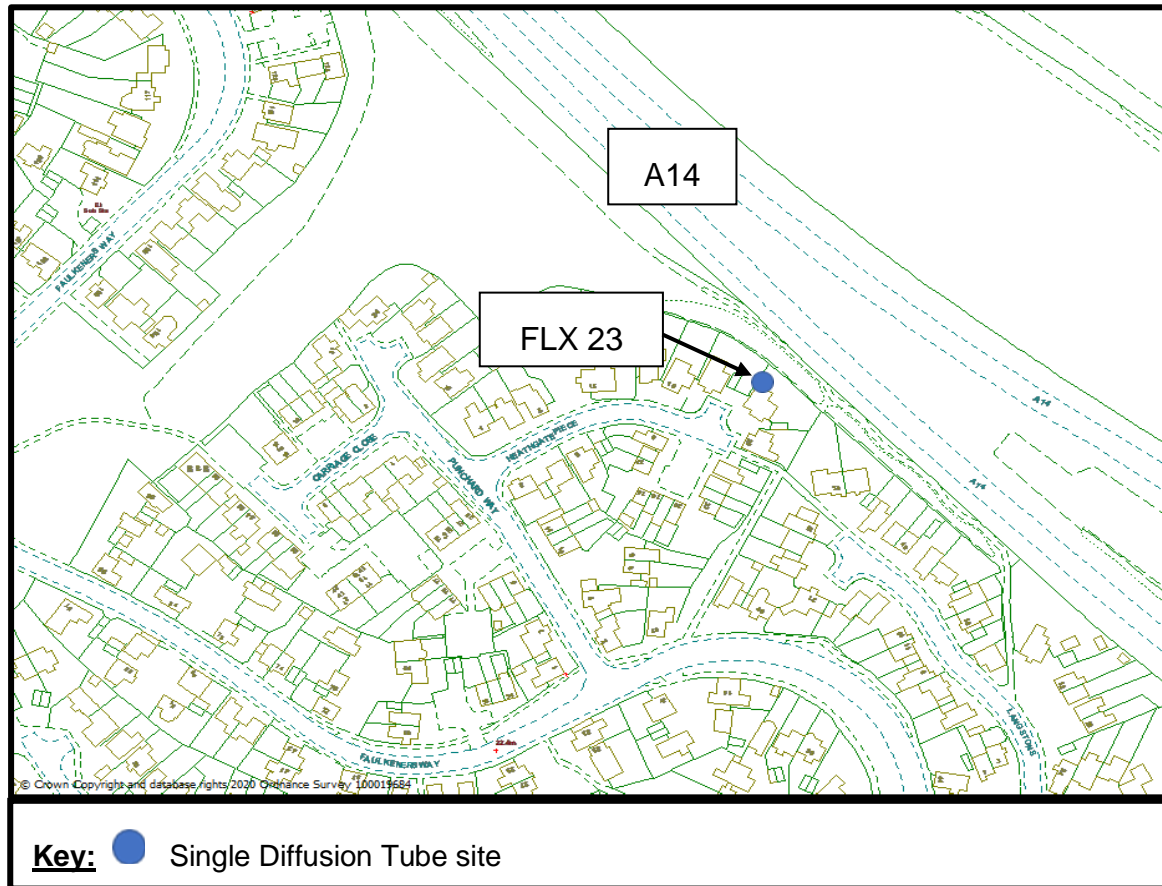




Figure D. 1 Felixstowe Map 2

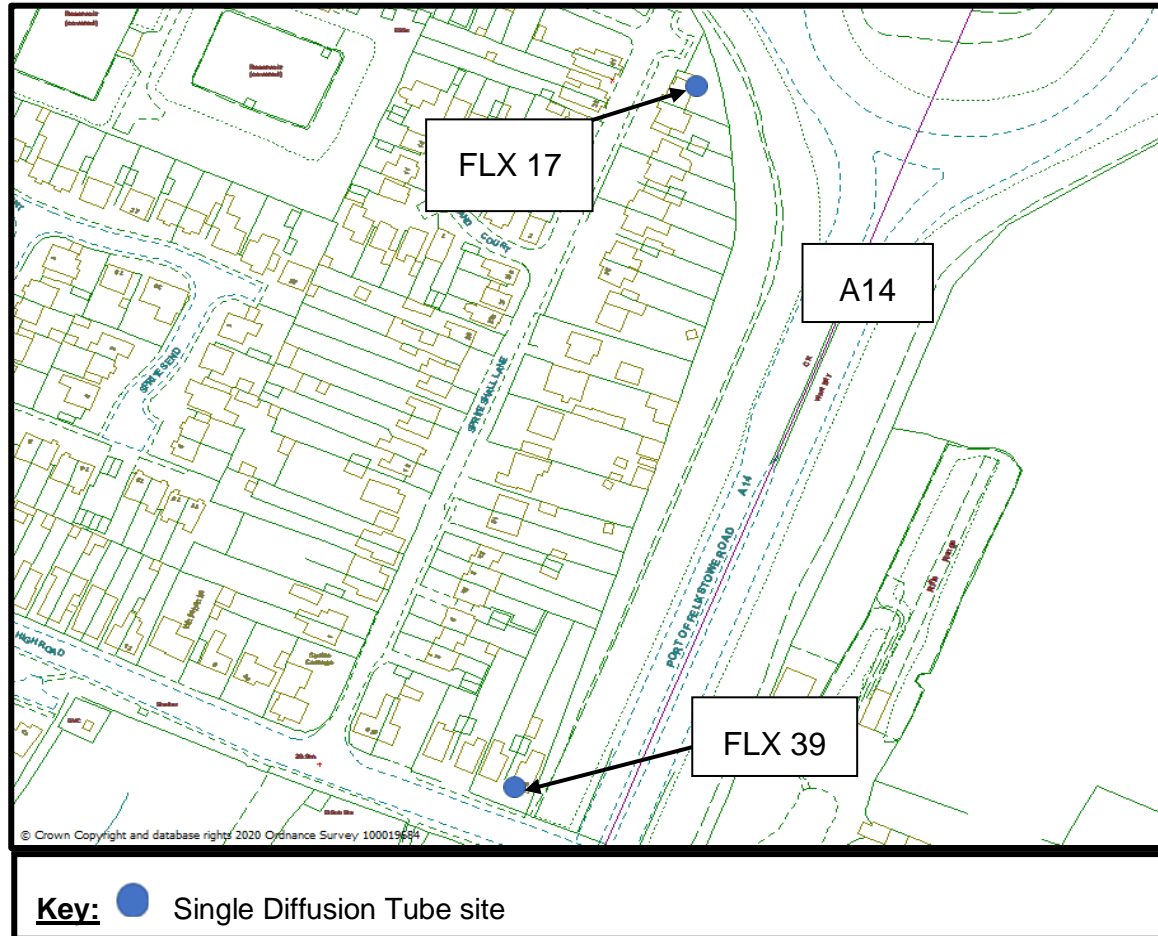


Figure D. 2 Felixstowe Map 3

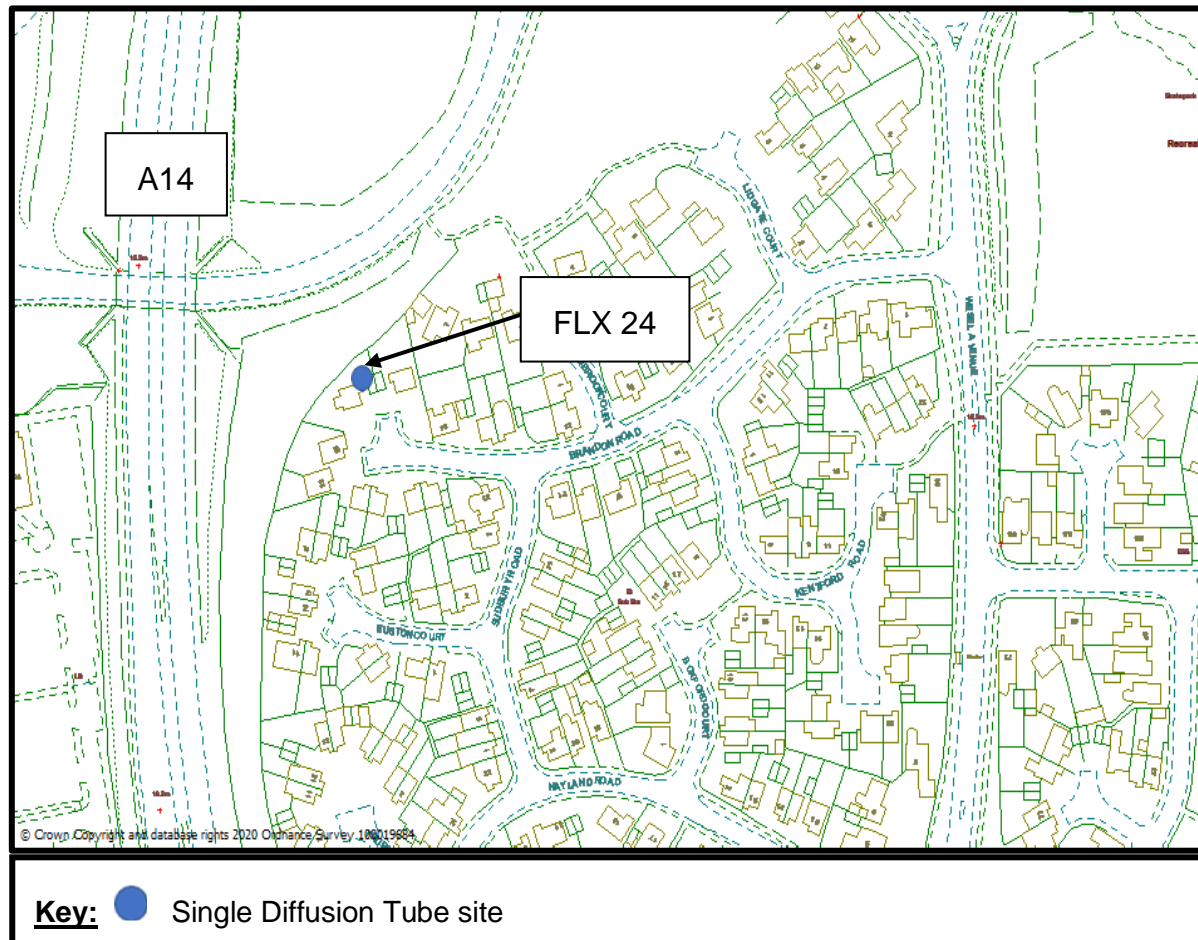


Figure D.3 Felixstowe Map 4

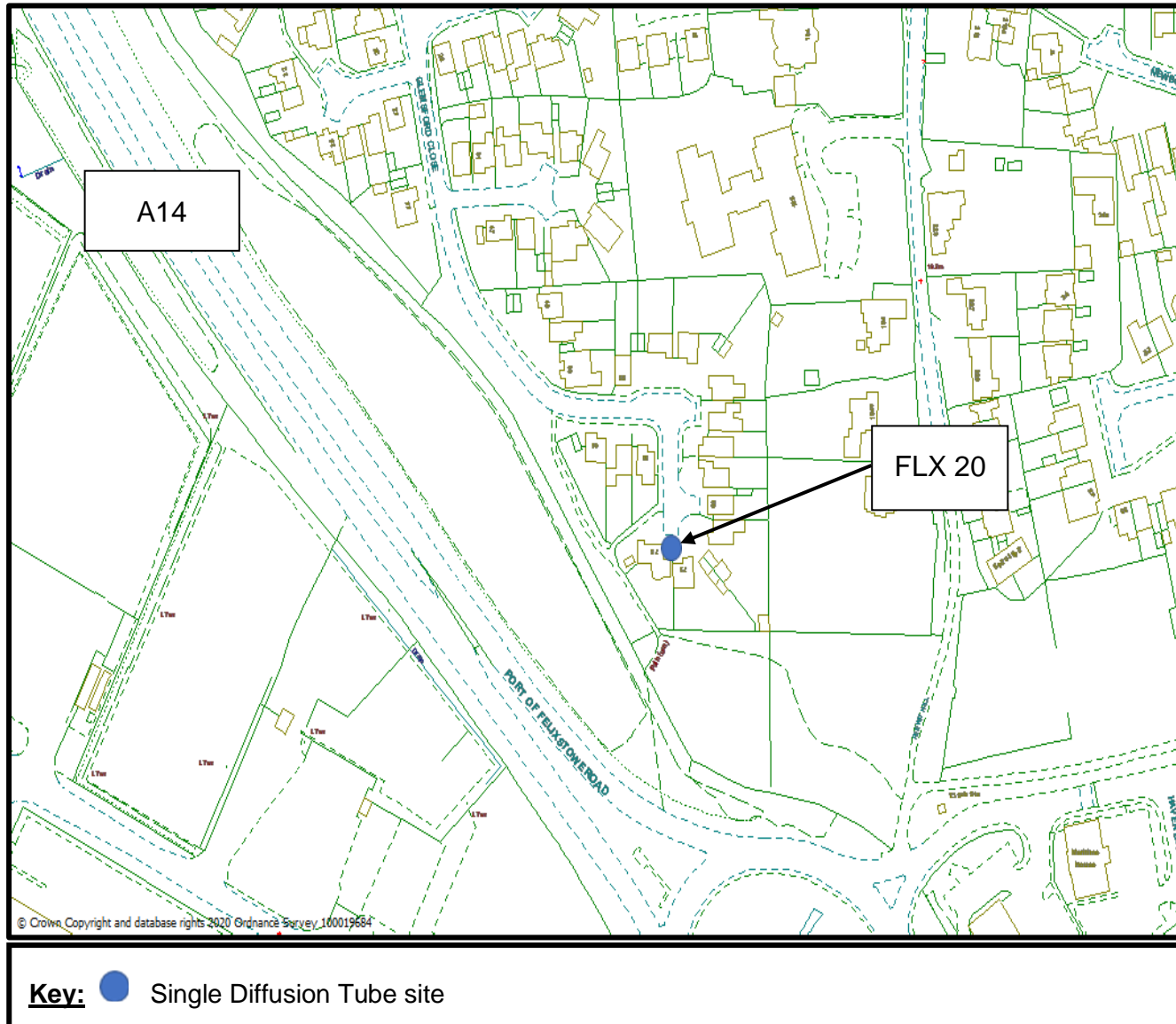


Figure D. 4 Felixstowe Map 5

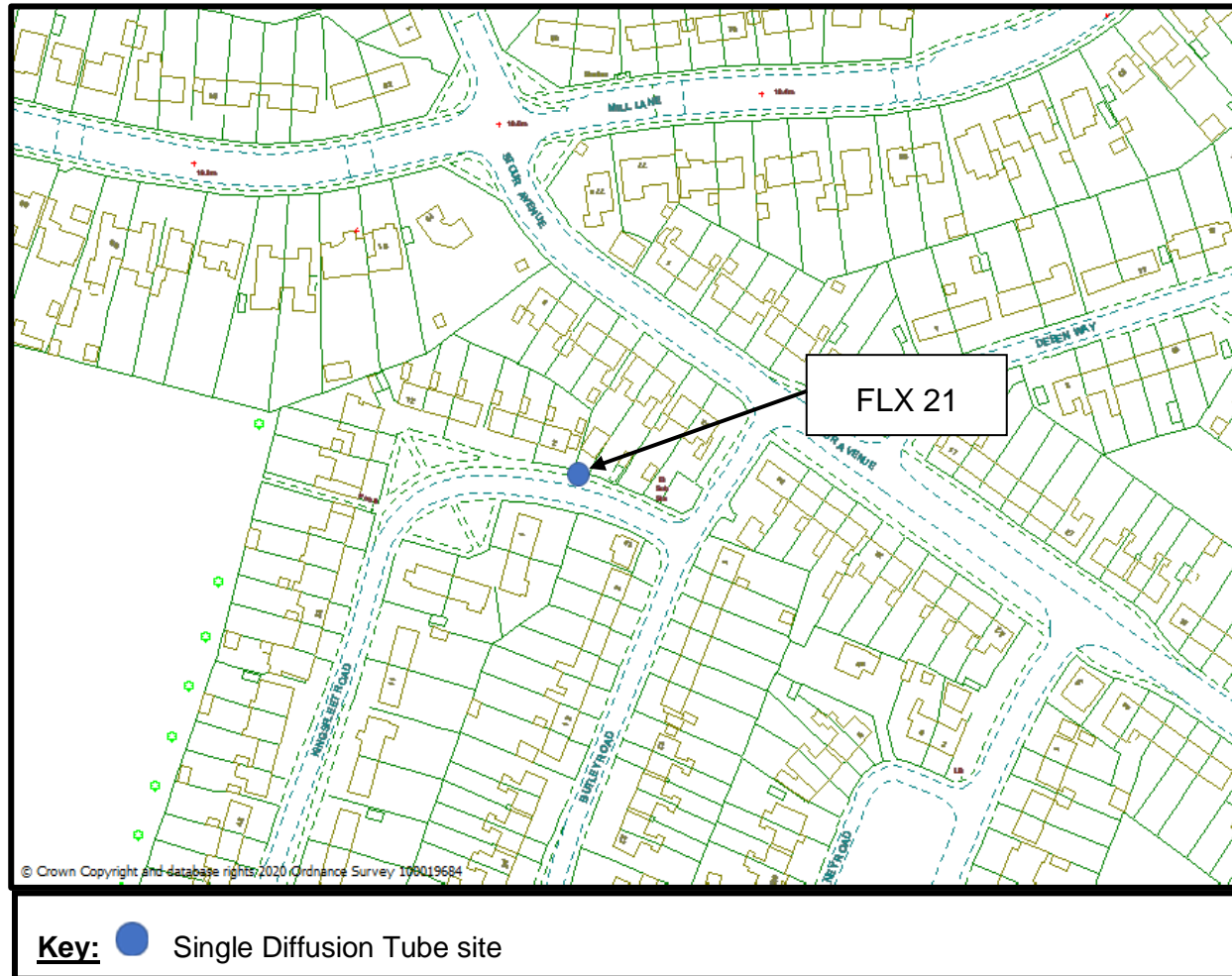


Figure D. 5 Felixstowe Map 6



Figure D. 6 Felixstowe Map 7

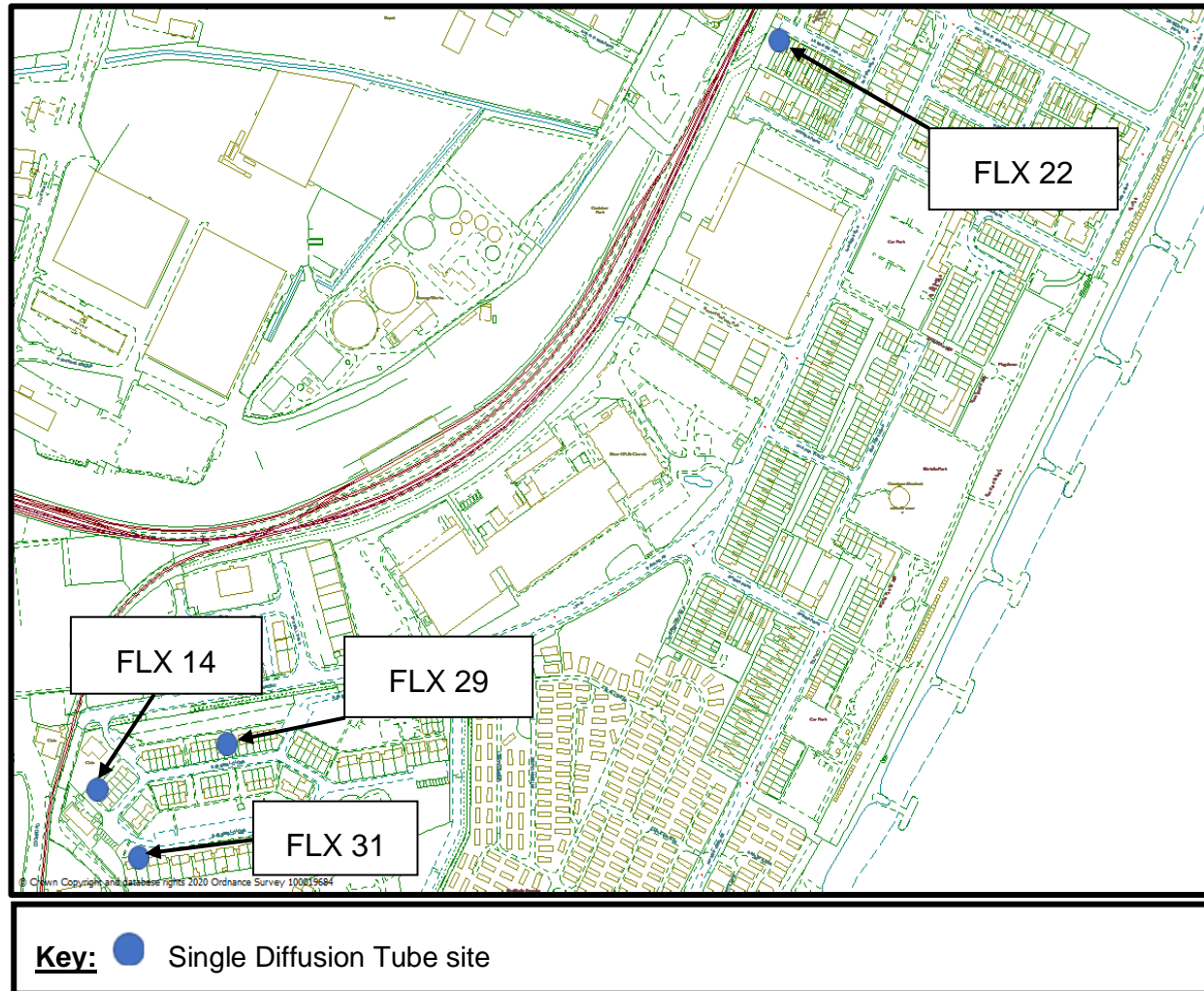


Figure D.7 Felixstowe Map 8

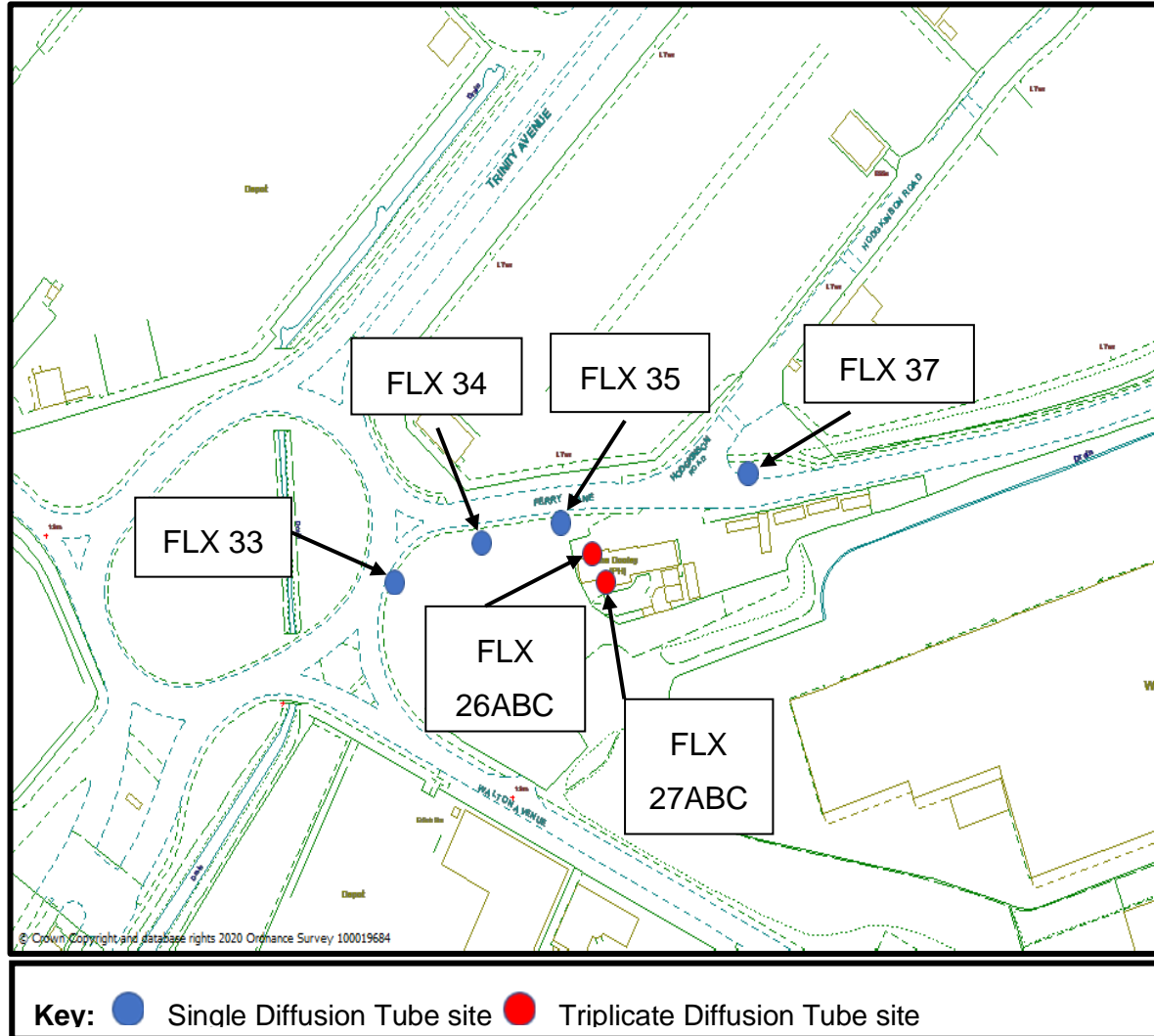


Figure D. 8 Beccles Map 1

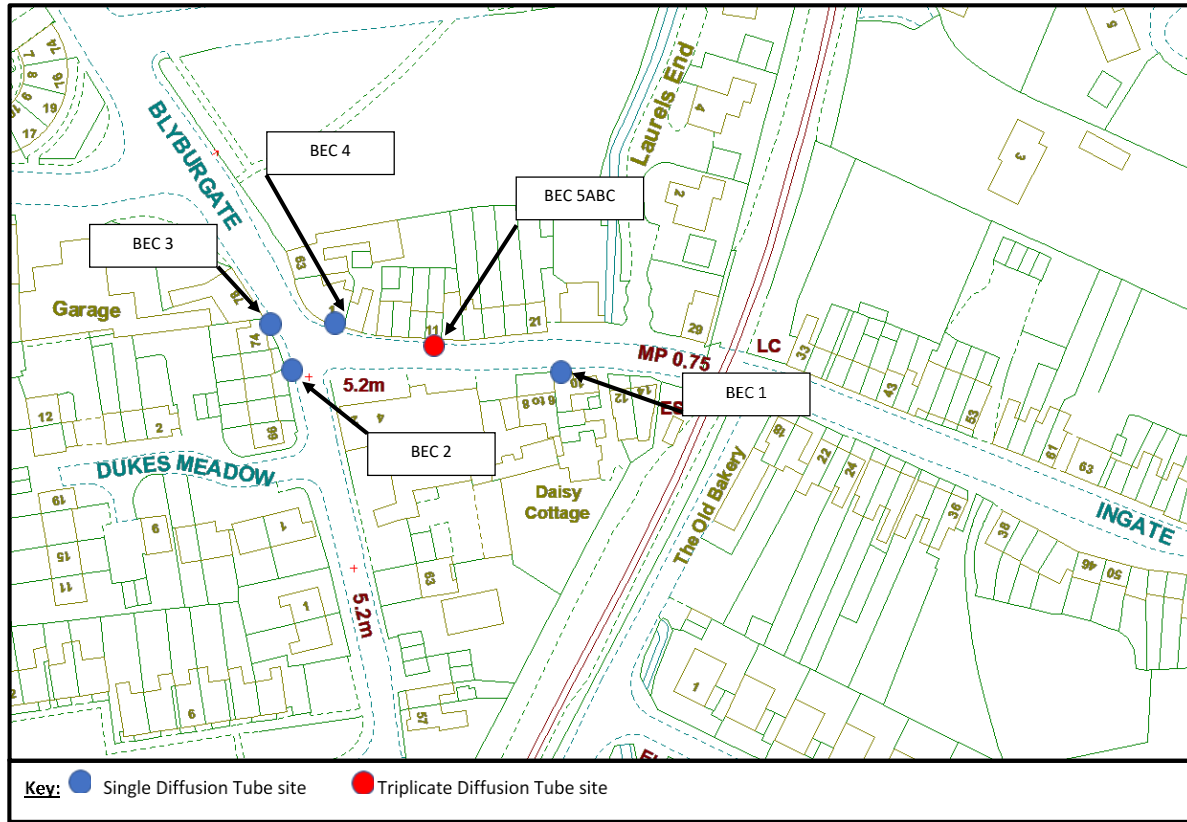




Figure D. 9 Beccles Map 2

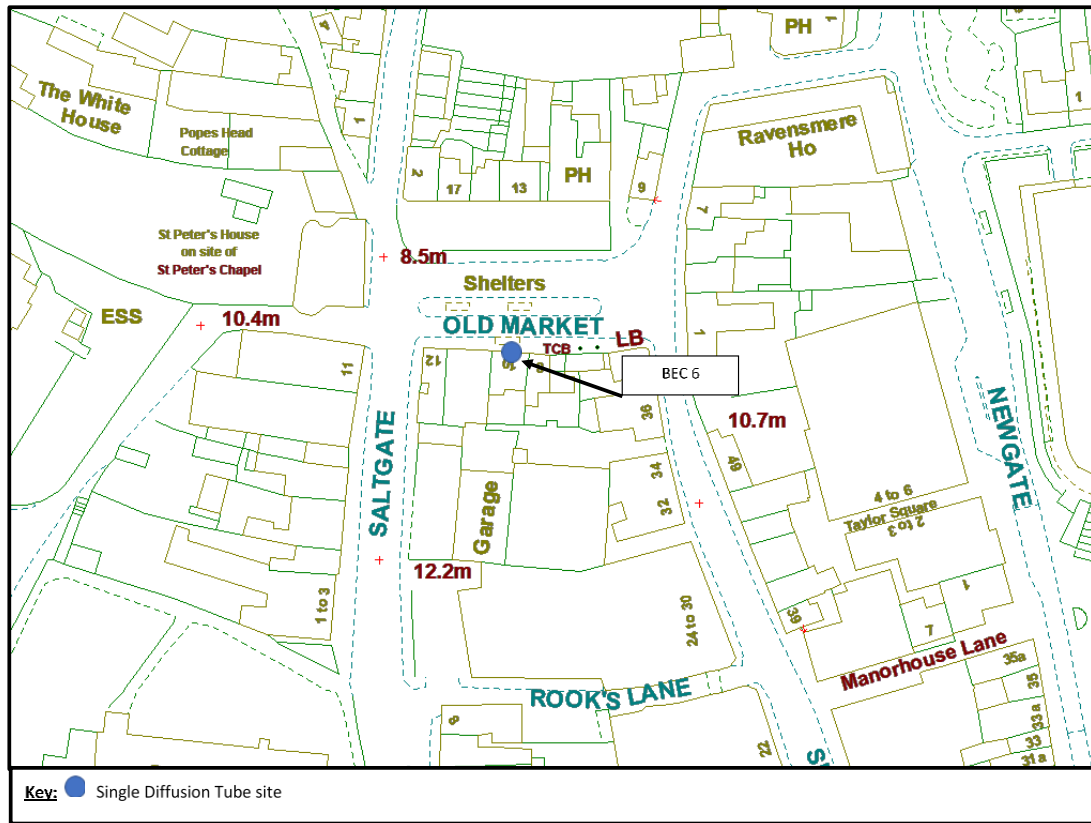


Figure D. 10 Blythburgh Map

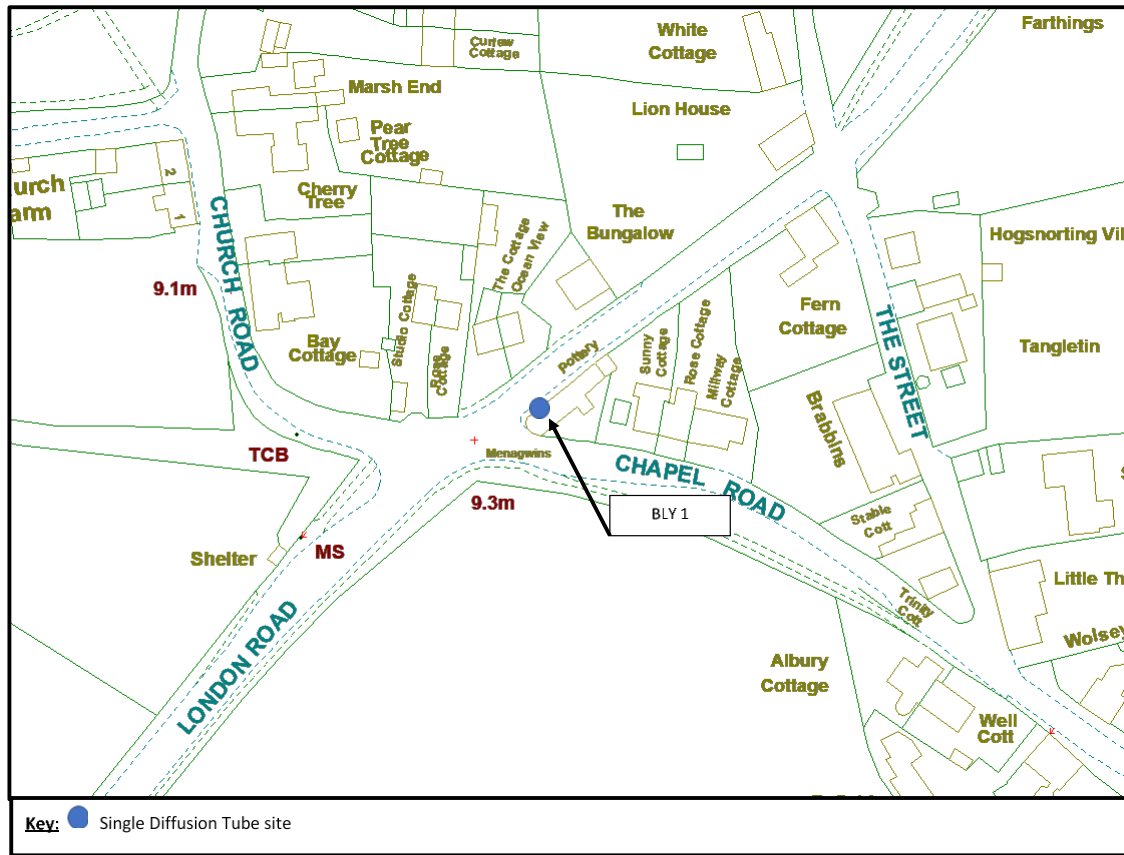


Figure D. 11 Bungay Map

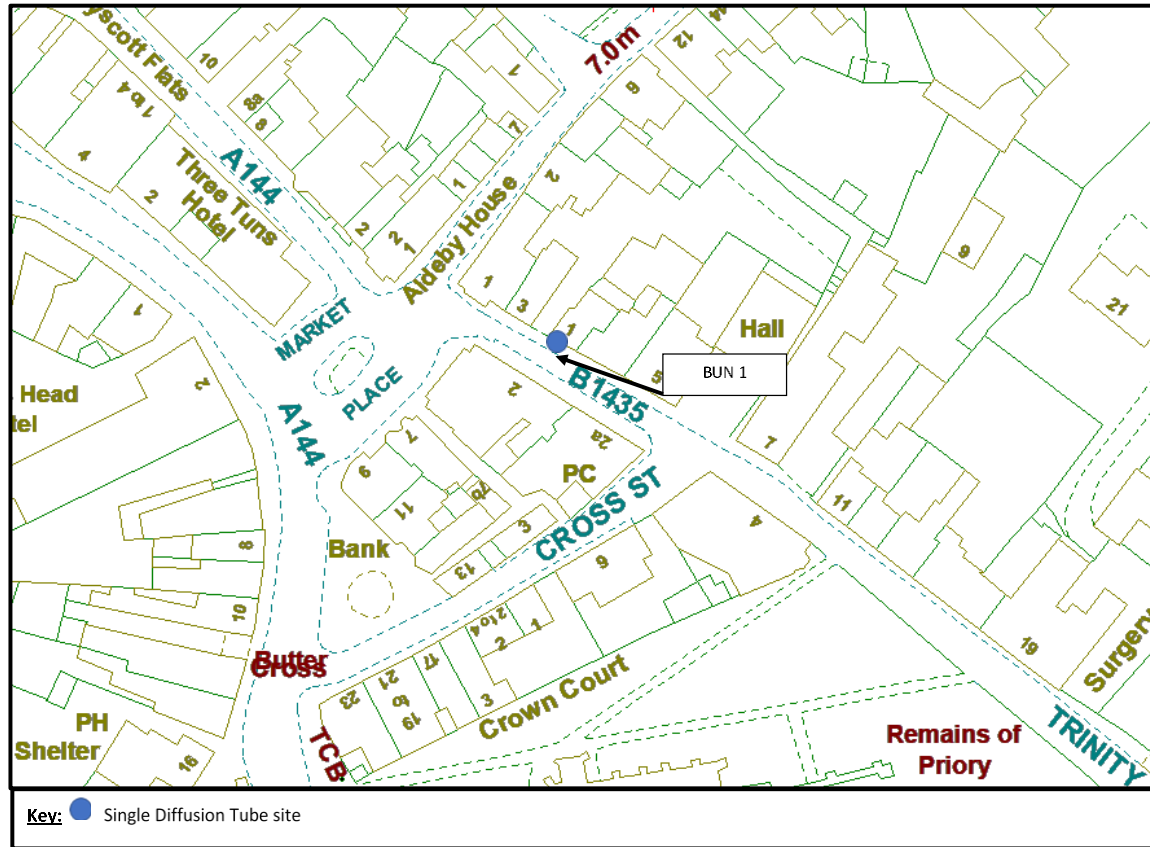


Figure D. 12 Kesgrave Map

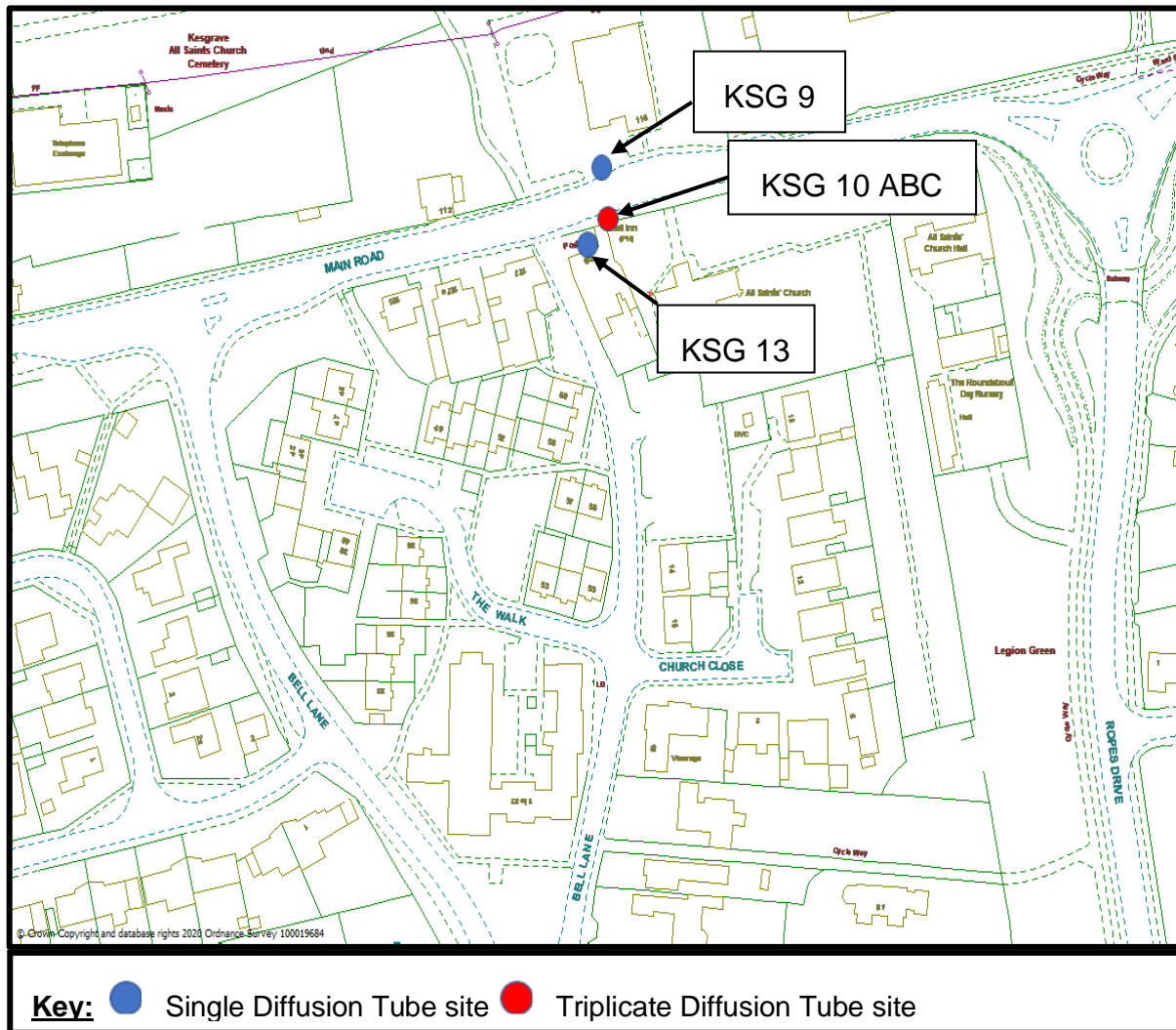


Figure D. 13 Leiston Map

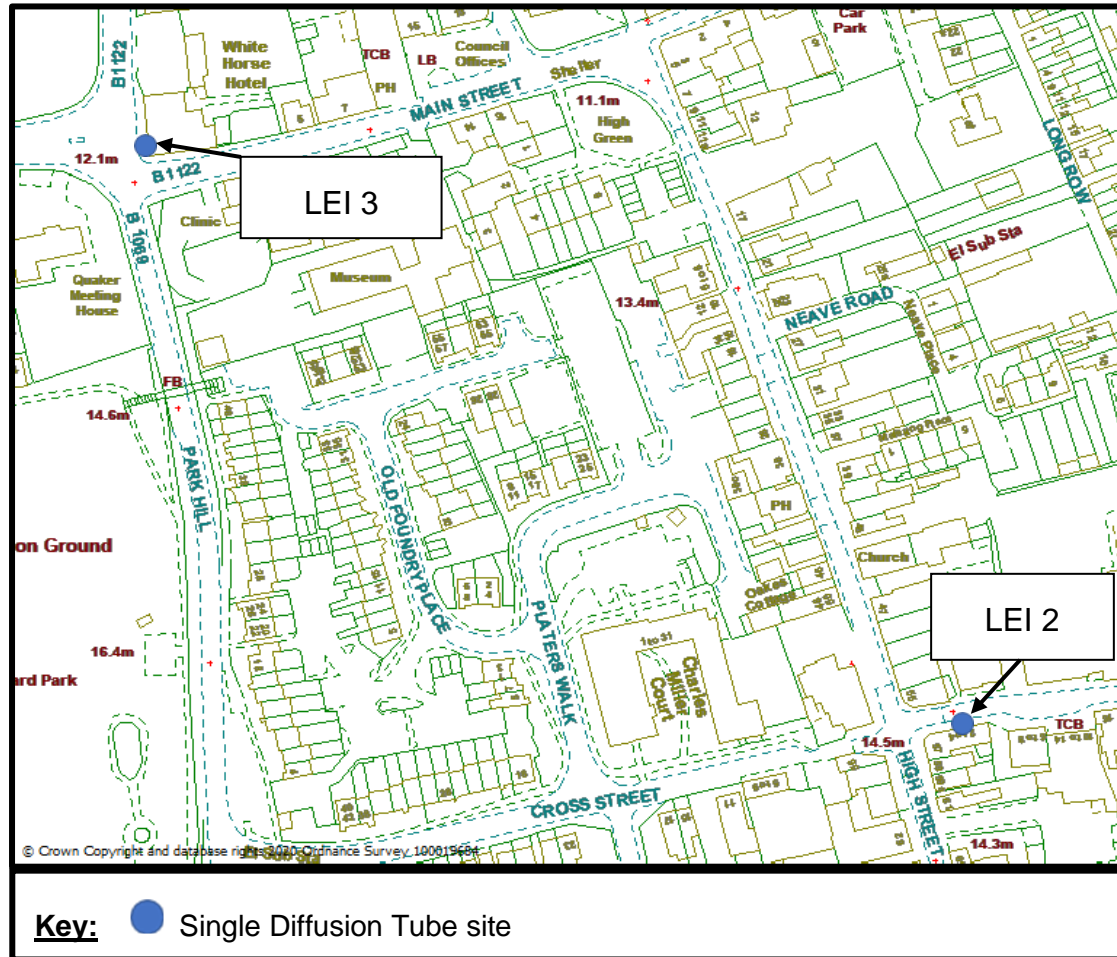


Figure D. 14 Little Glemham Map

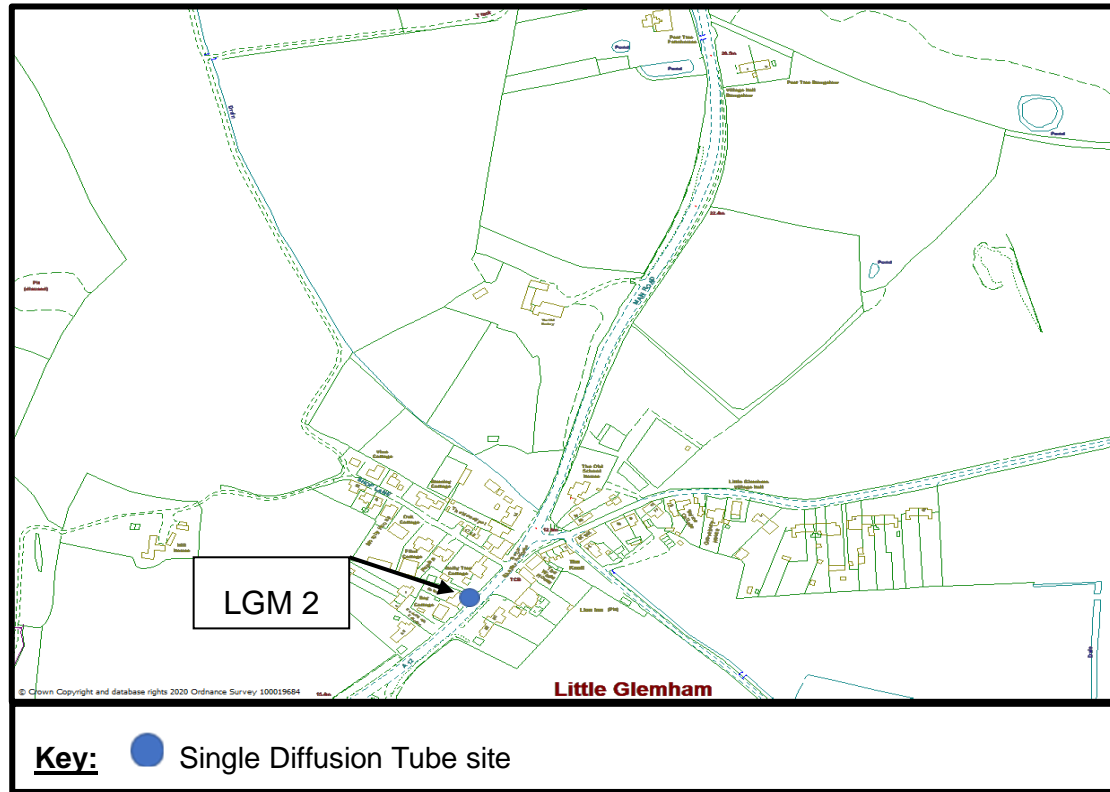


Figure D. 15 Lowestoft Map 1

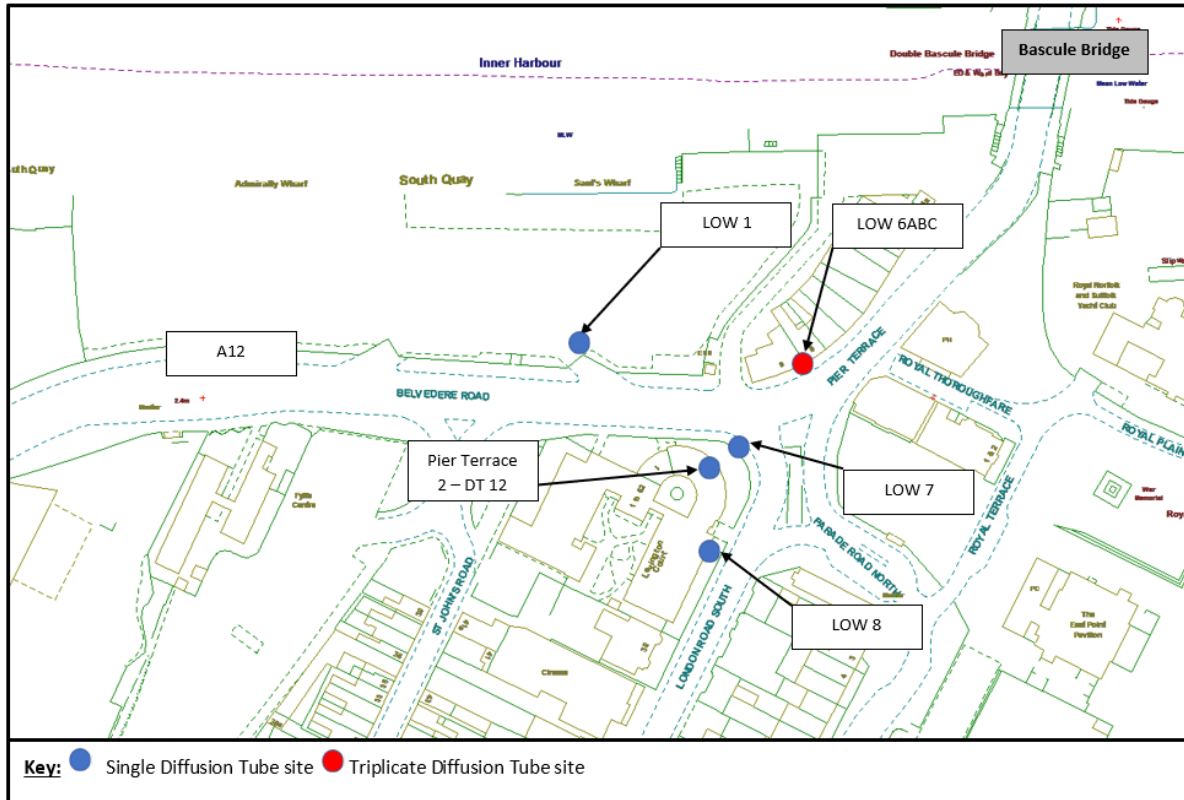


Figure D. 16 Lowestoft Map 2

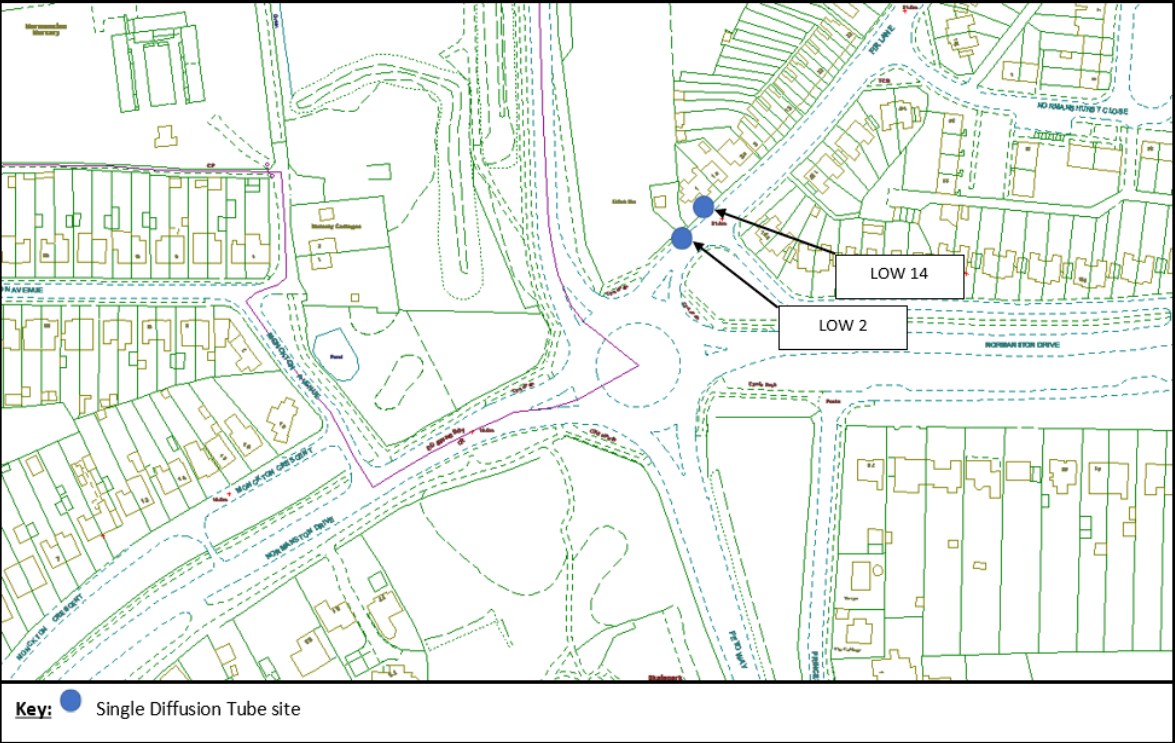




Figure D. 17 Lowestoft Map 3



Figure D. 18 Lowestoft Map 4

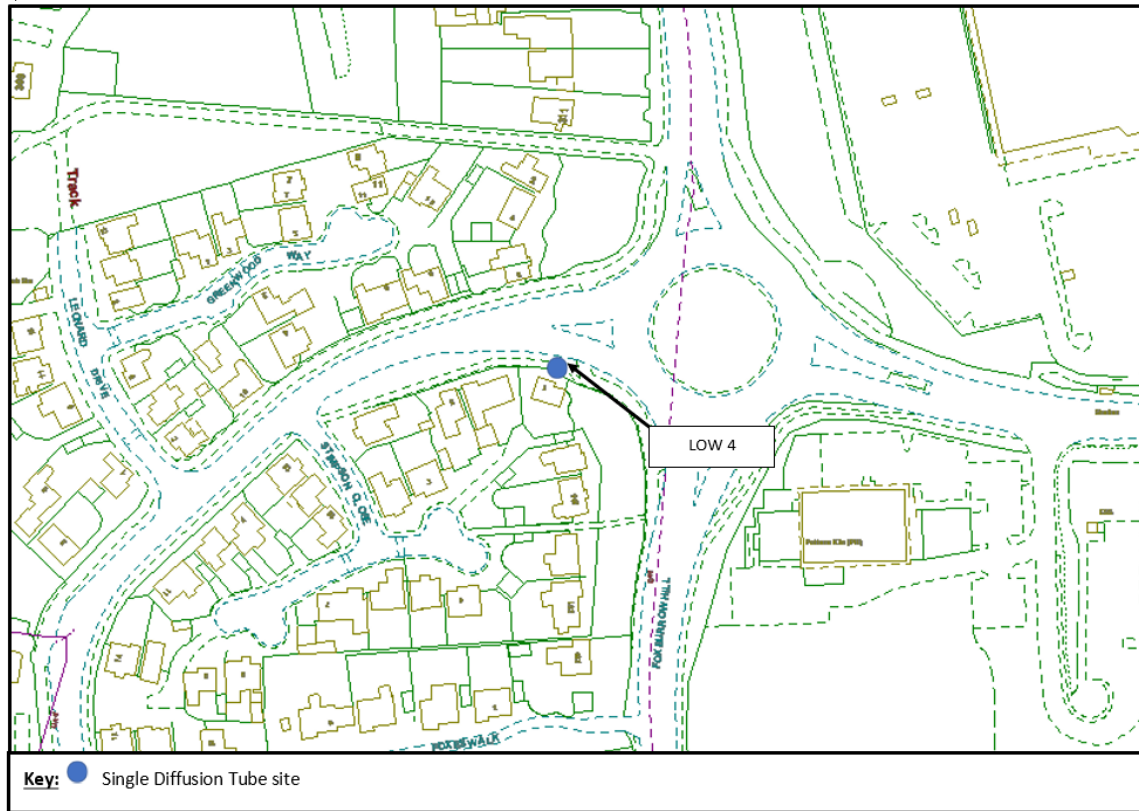


Figure D. 19 Lowestoft Map 5

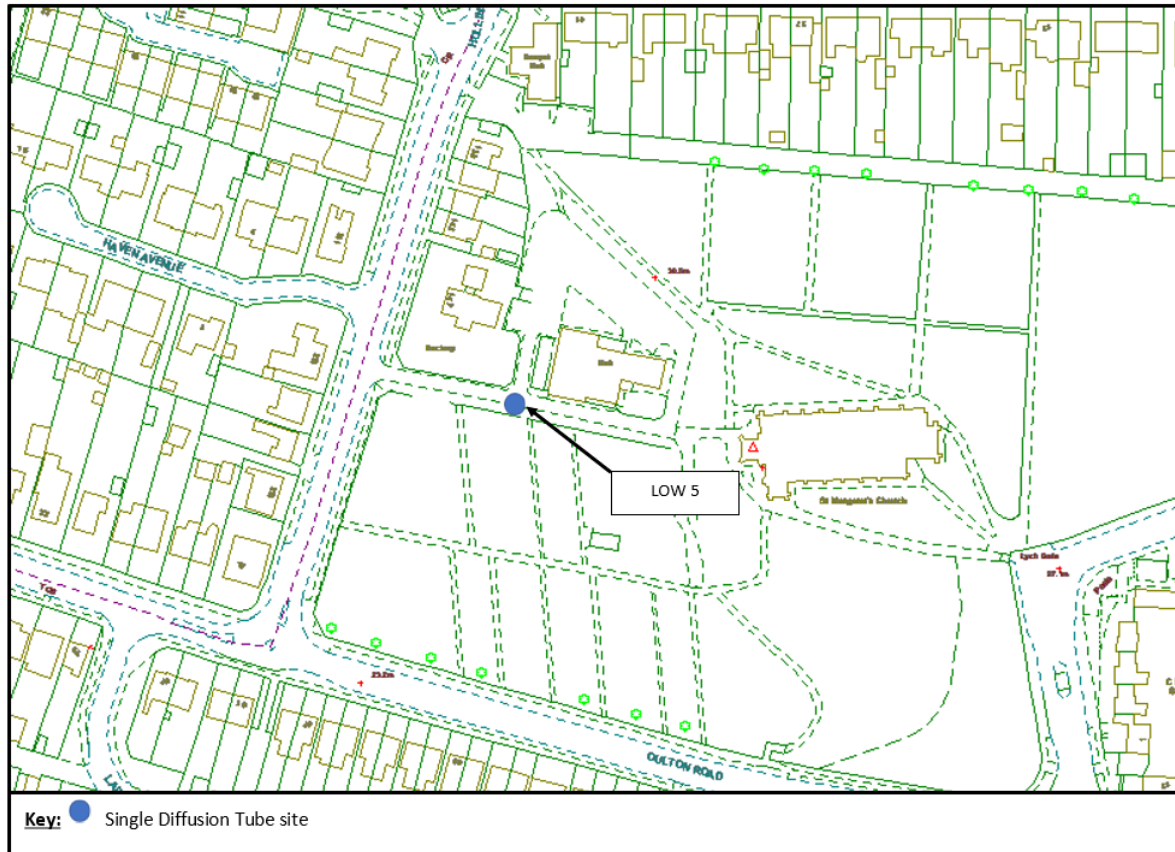


Figure D. 20 Lowestoft Map 6

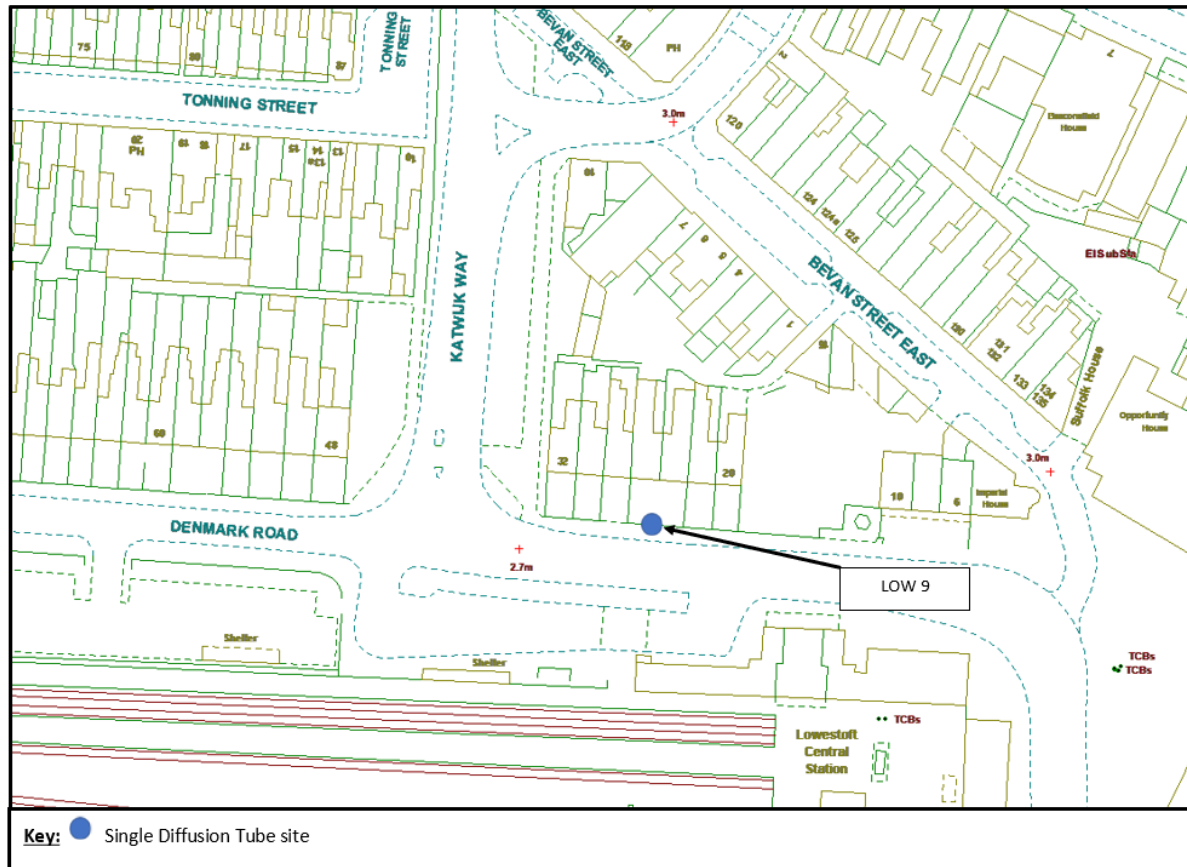


Figure D. 21 Lowestoft Map 7

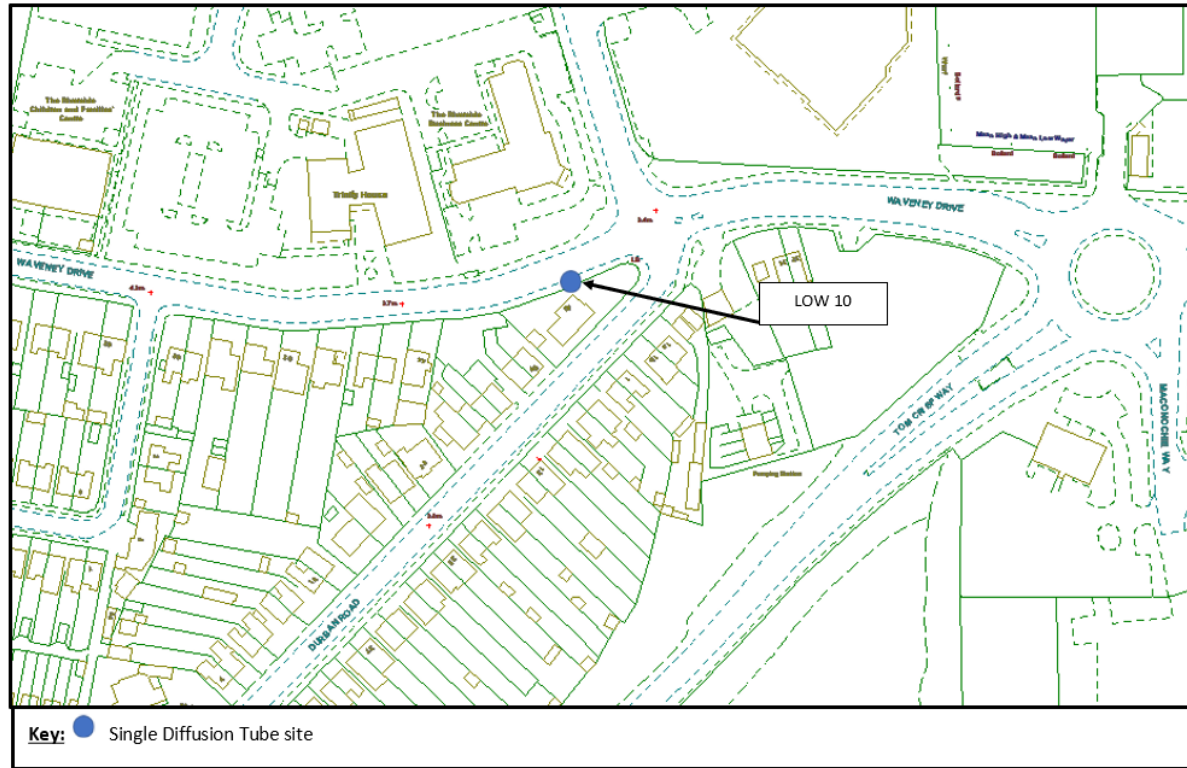


Figure D. 22 Lowestoft Map 8

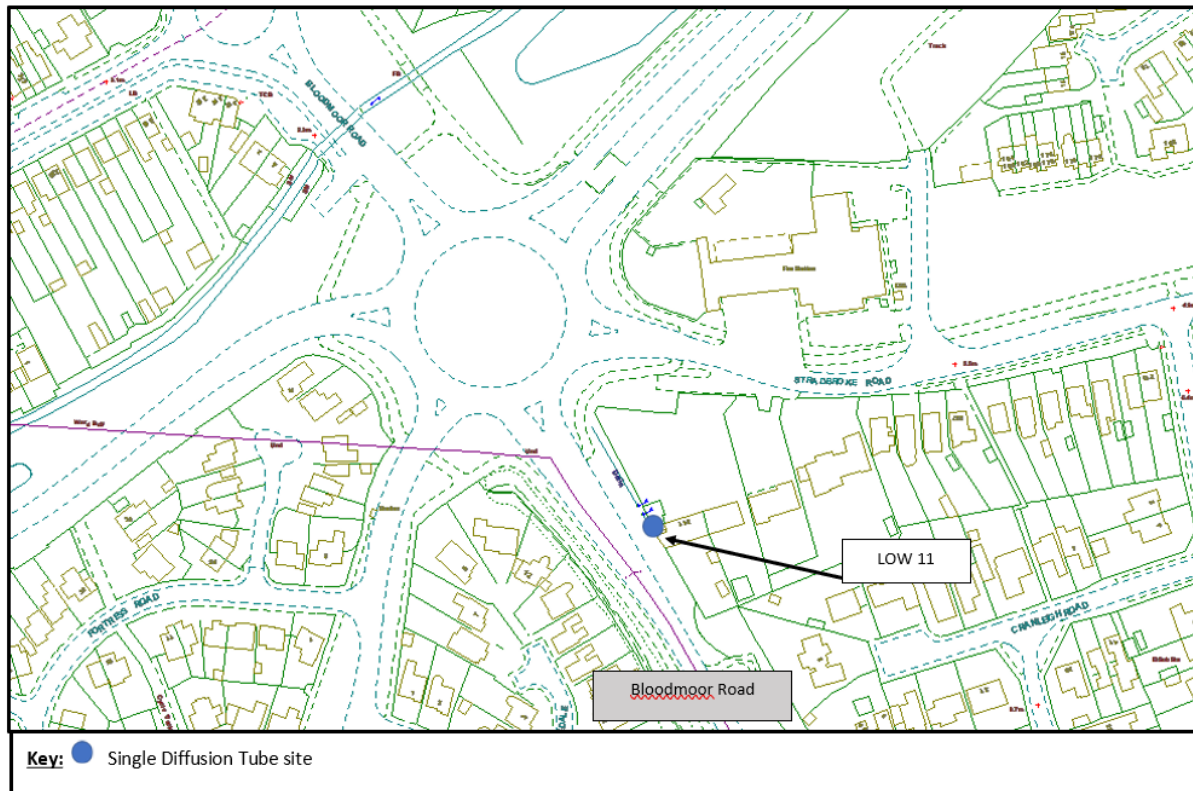


Figure D. 23 Martlesham Map 1

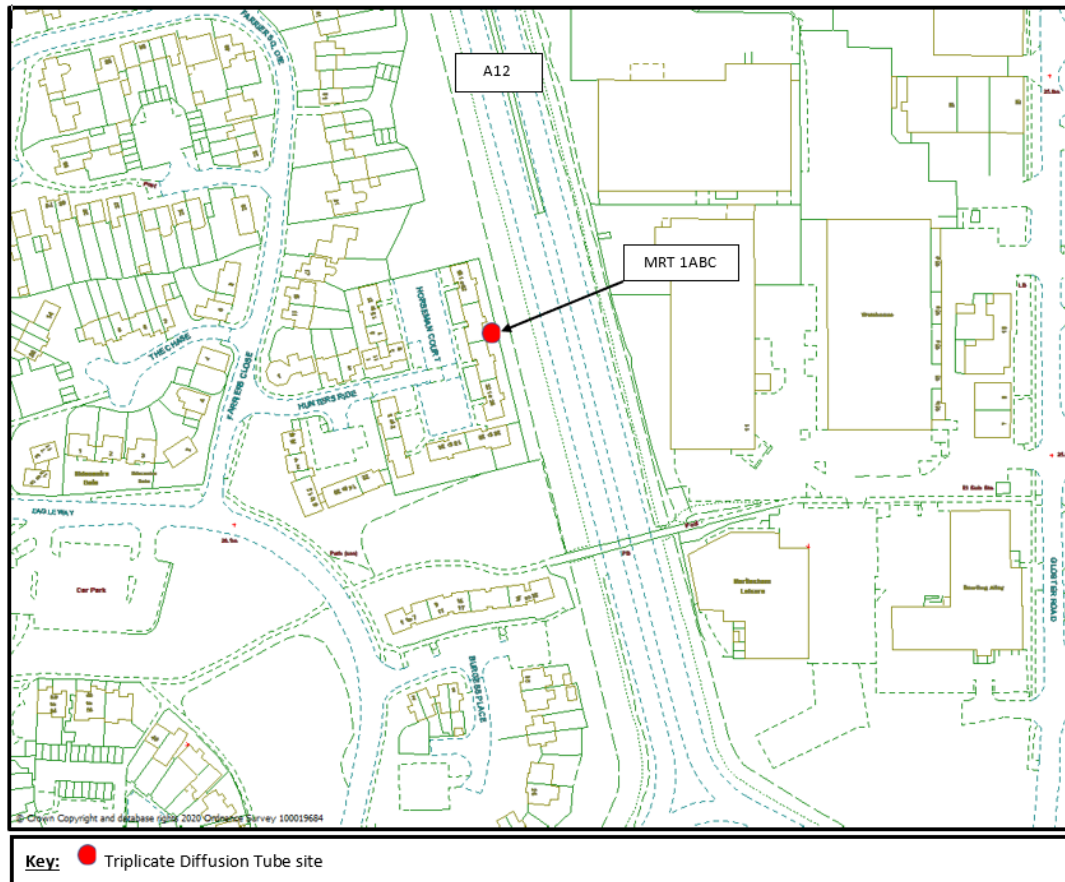


Figure D. 24 Melton Map

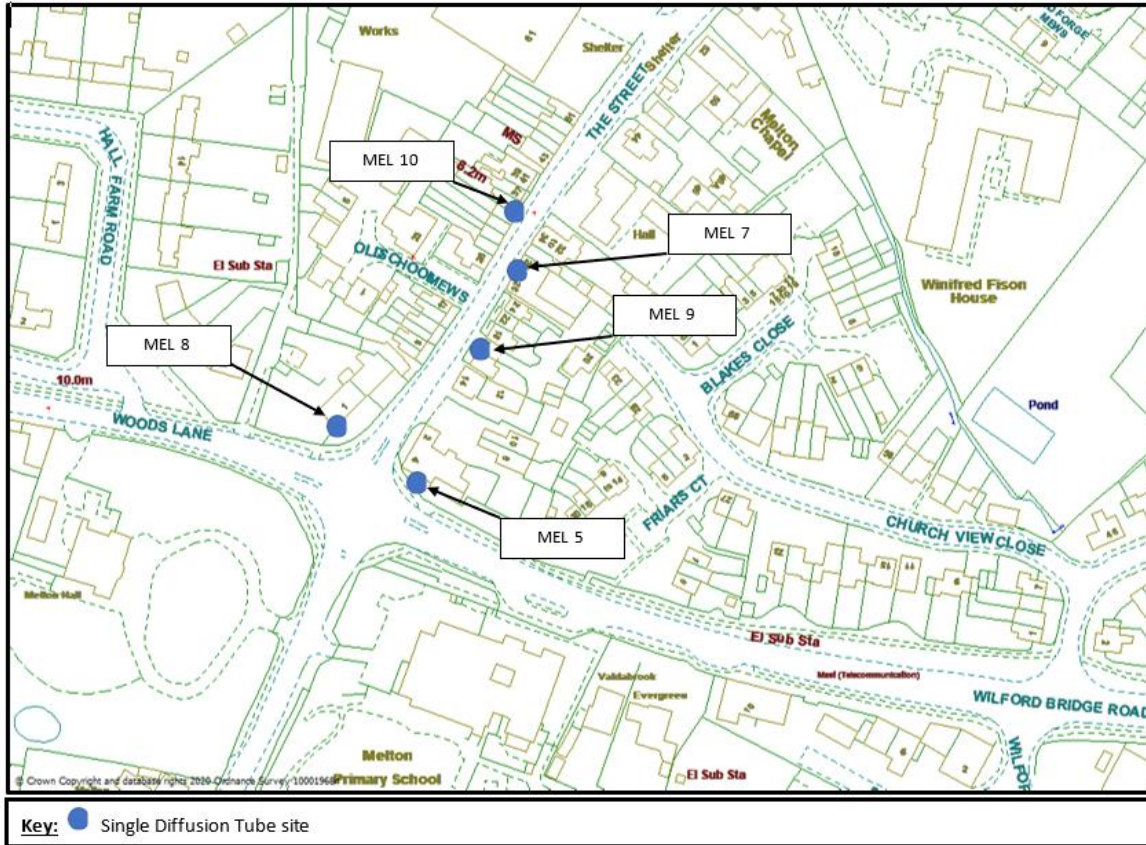




Figure D. 25 Oulton Broad Map 1

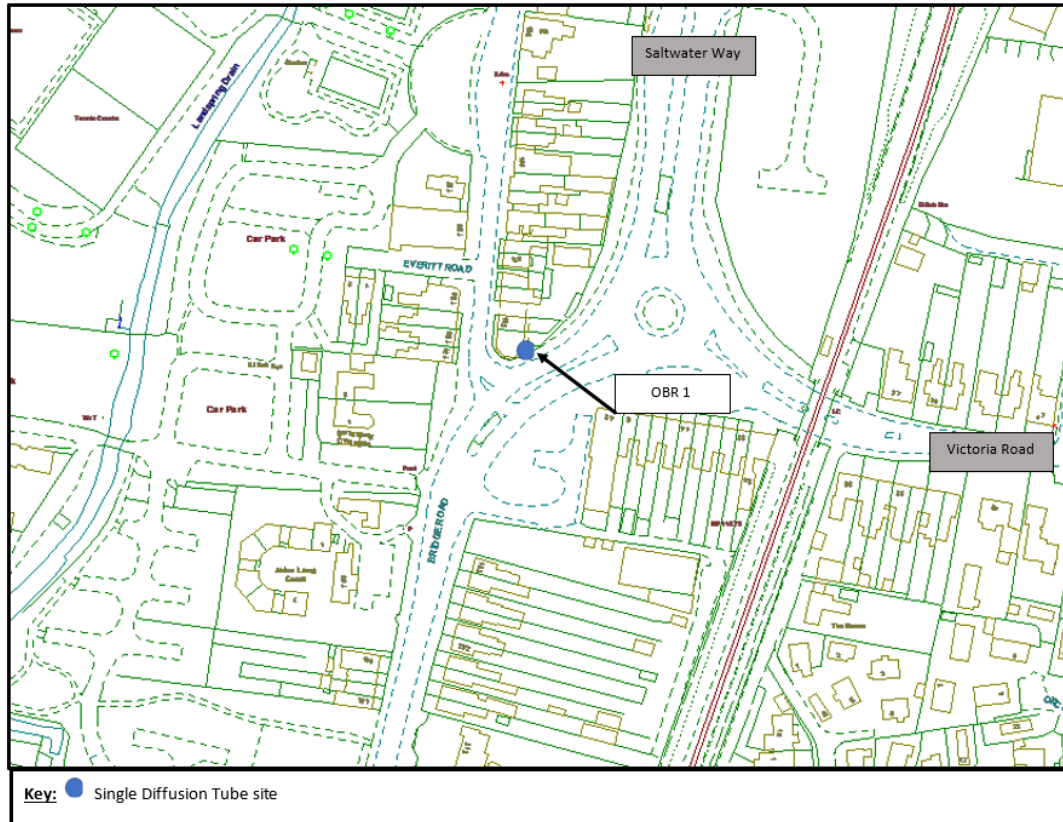


Figure D. 26 Oulton Broad Map 2

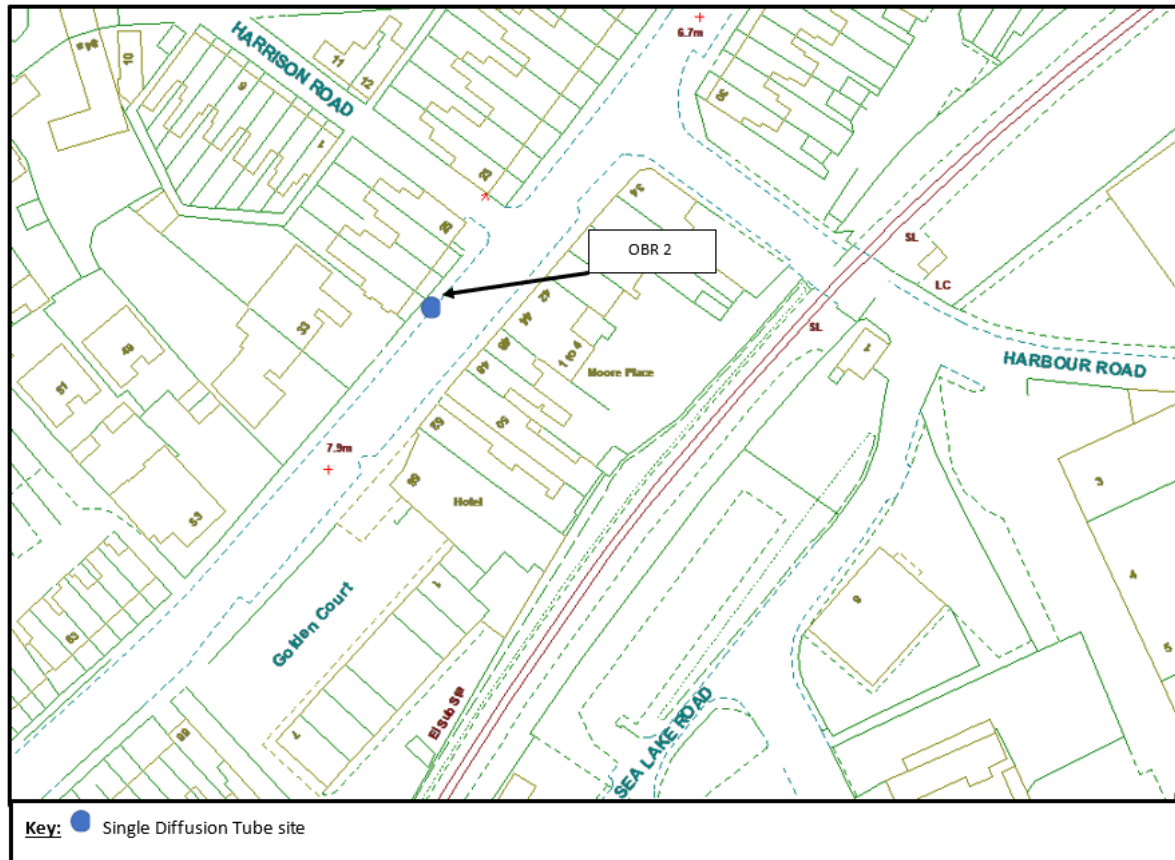


Figure D. 27 Oulton Broad Map 3

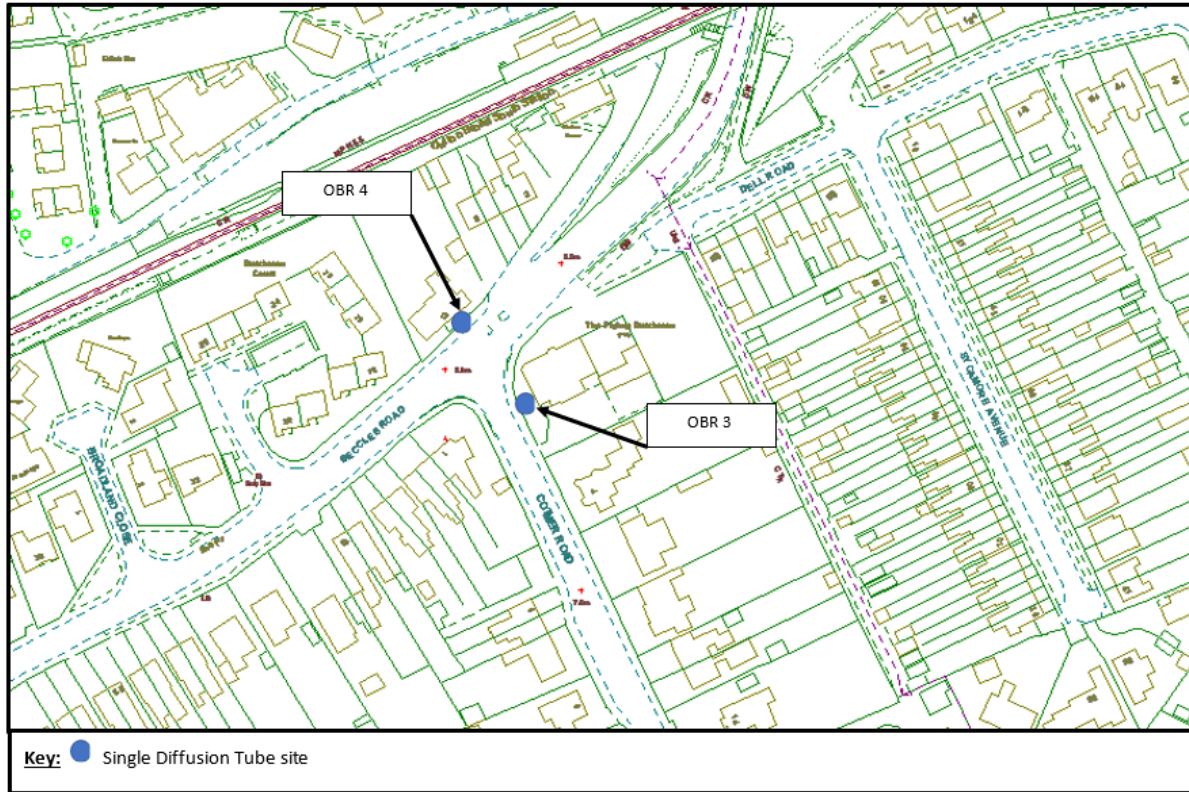


Figure D. 28 Oulton Broad Map 4

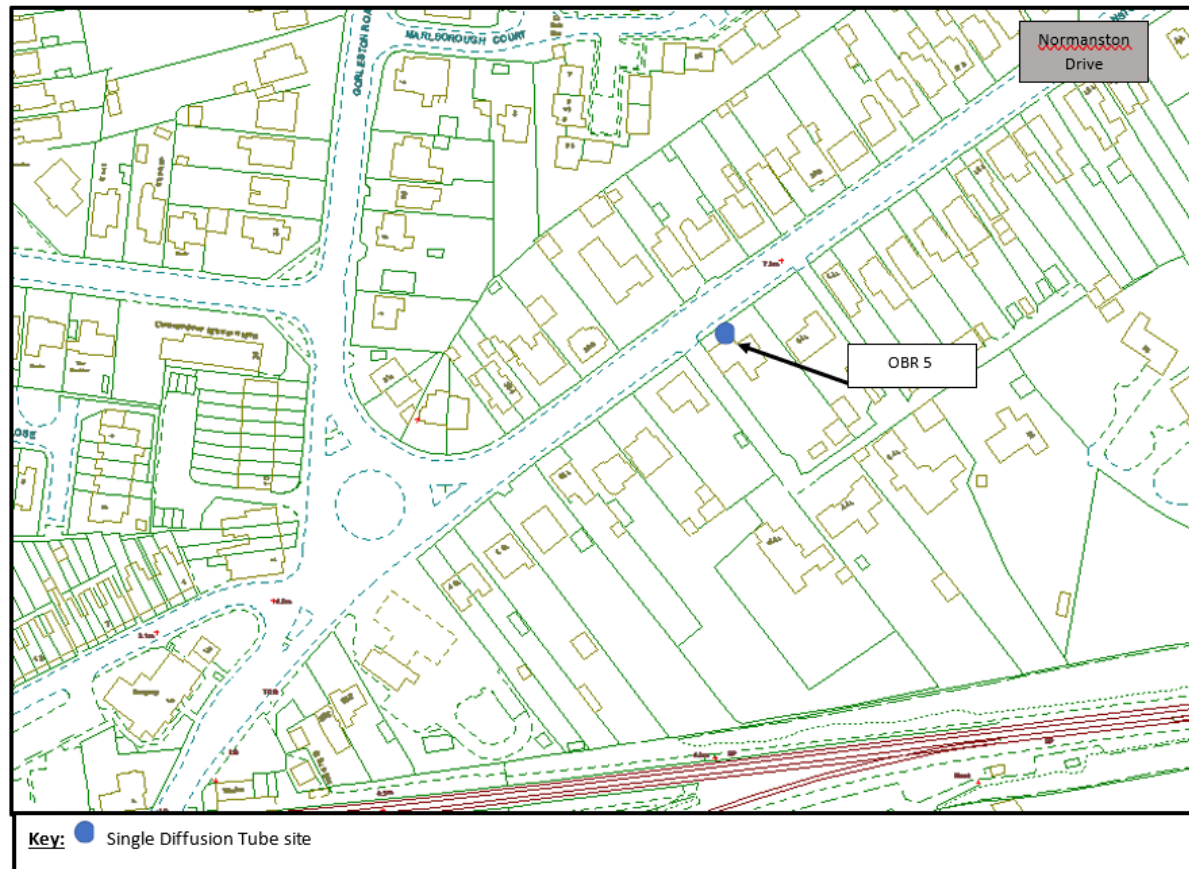


Figure D. 29 Saxmundham Map

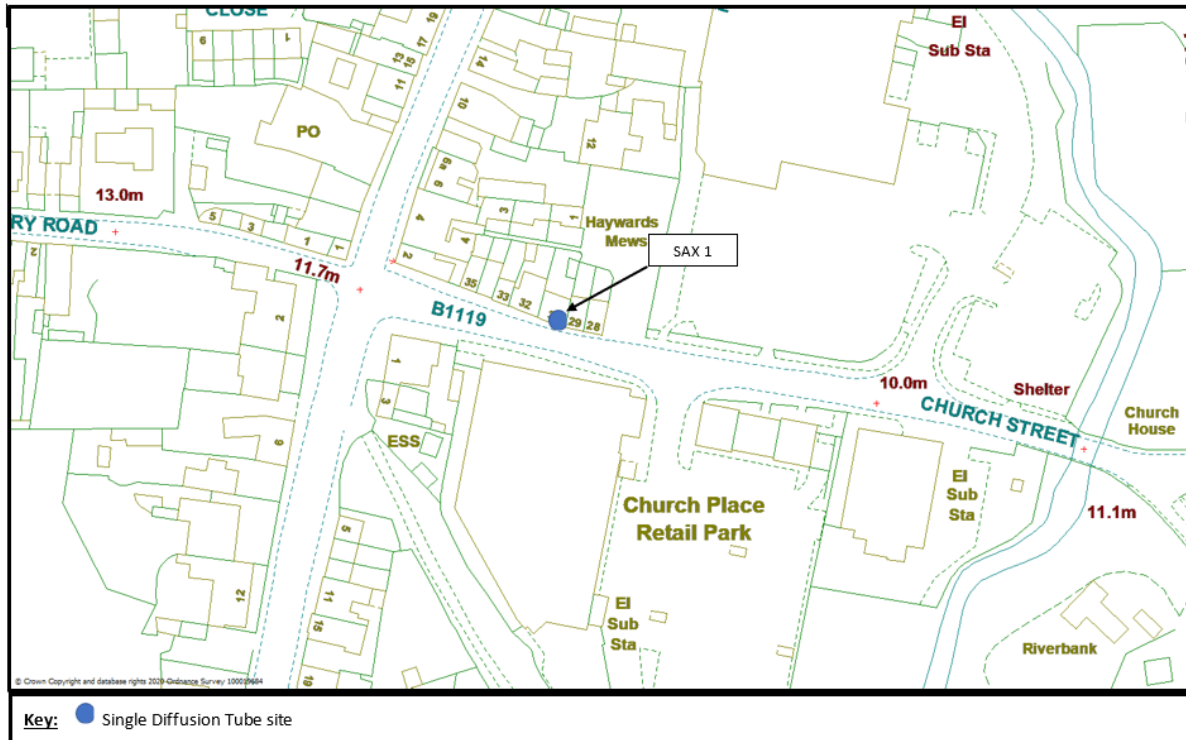


Figure D. 30 Stratford and Farnham Map

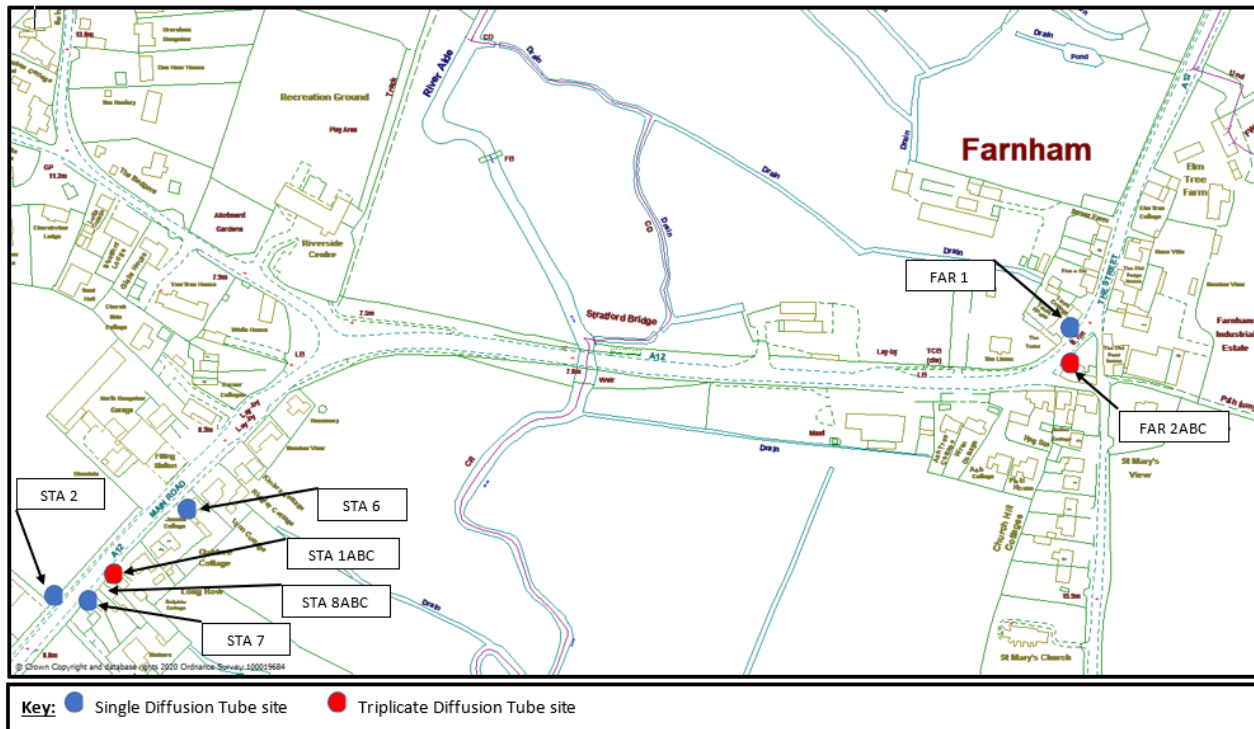


Figure D. 31 Trimley Map 2

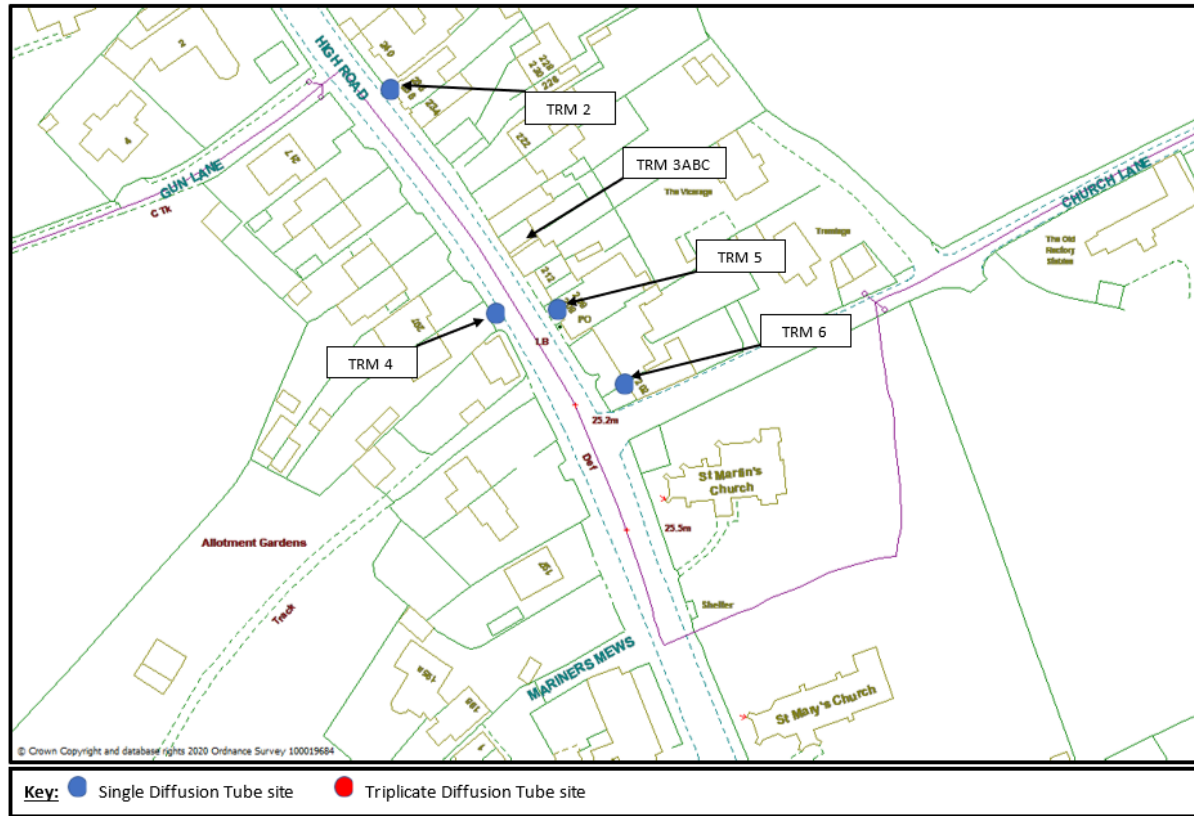


Figure D. 32 Trimley Map 3

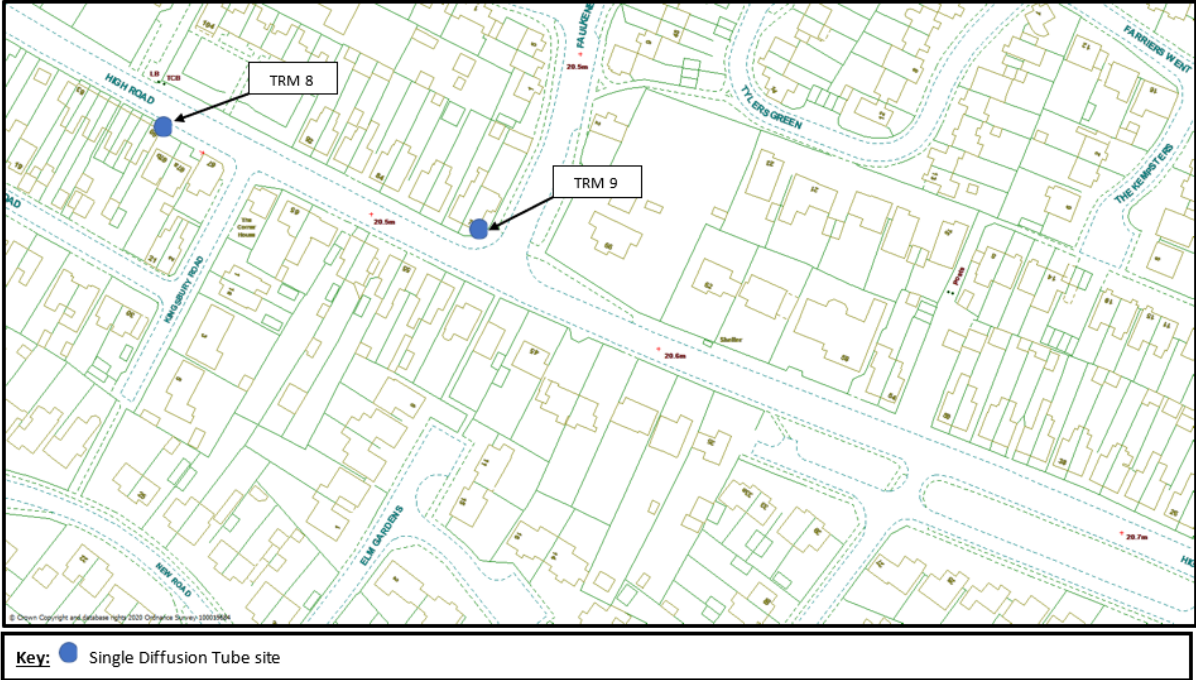




Figure D. 33 Trimley Map 4

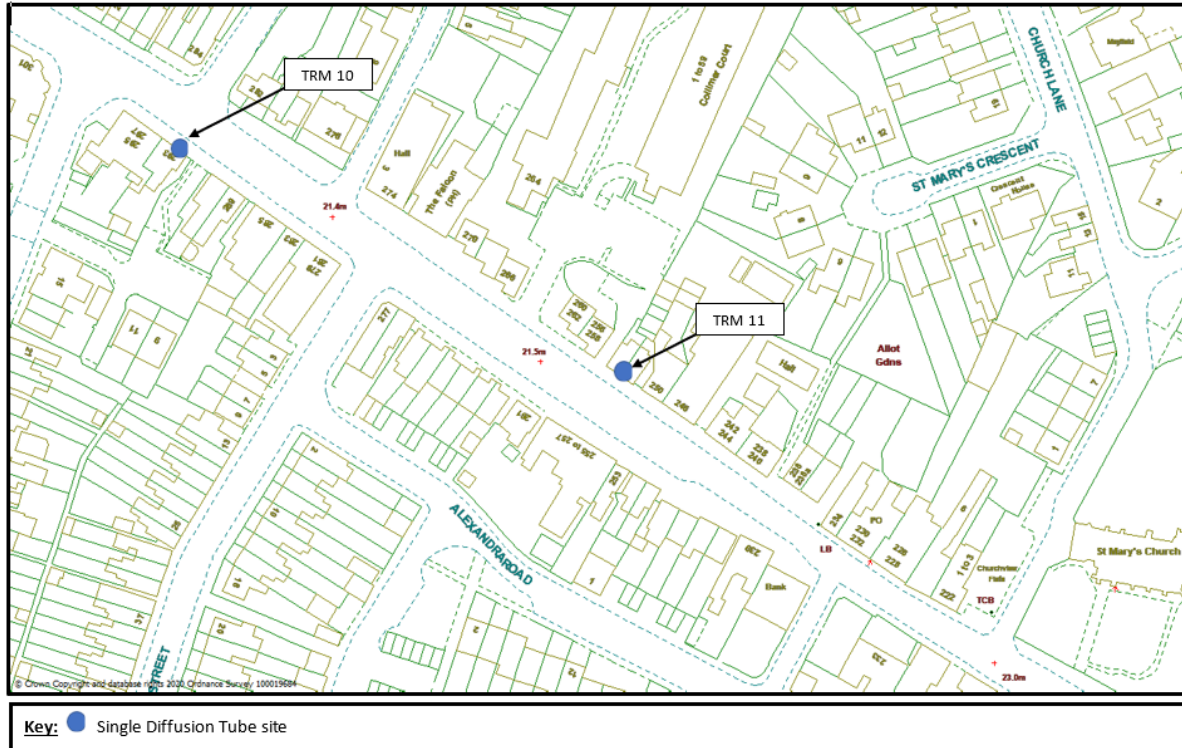


Figure D. 34 Trimley Map 5

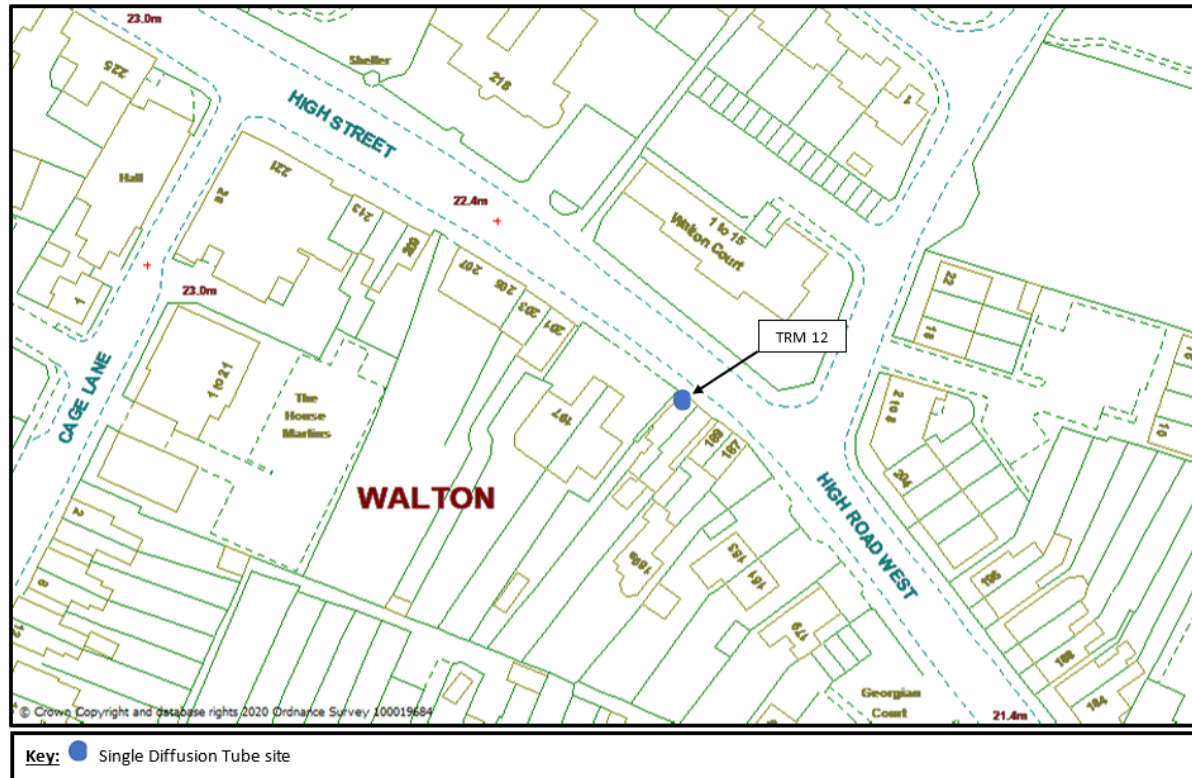


Figure D. 35 Woodbridge Map 1

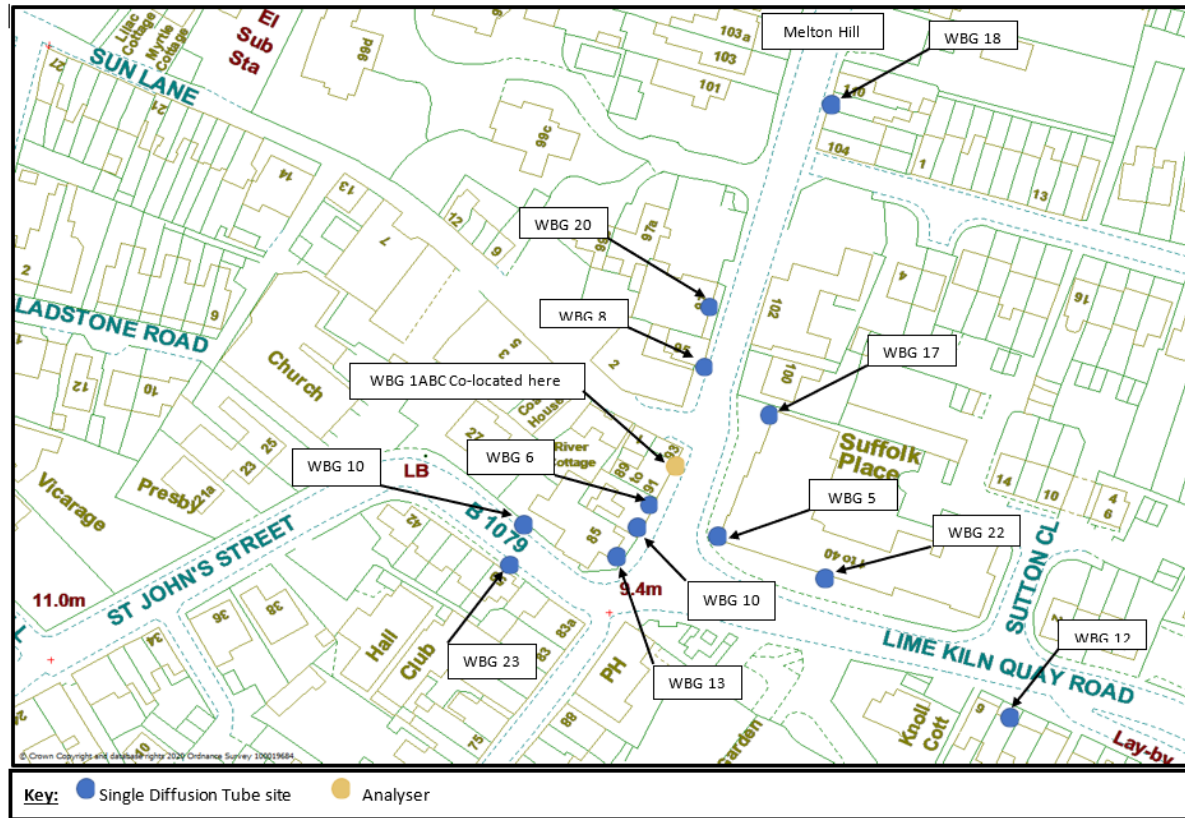


Figure D. 36 Woodbridge Map 2

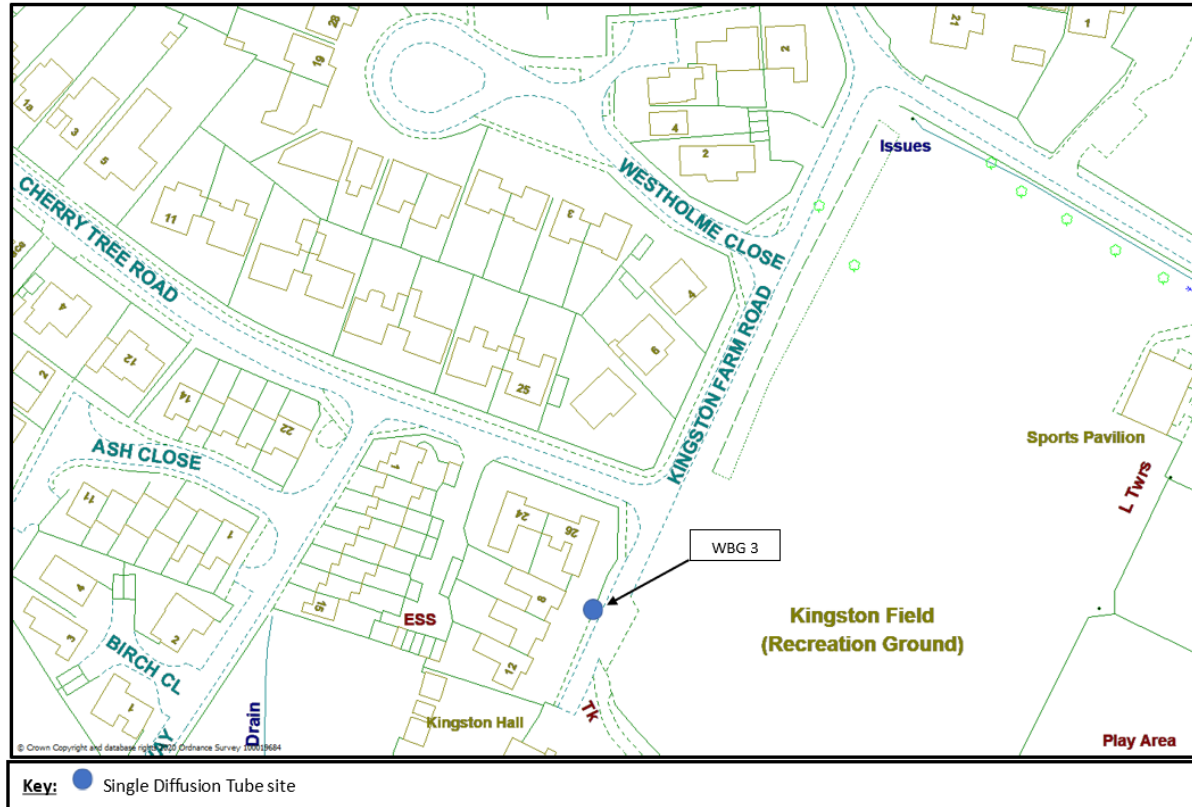


Figure D. 37 Wrentham Map 2

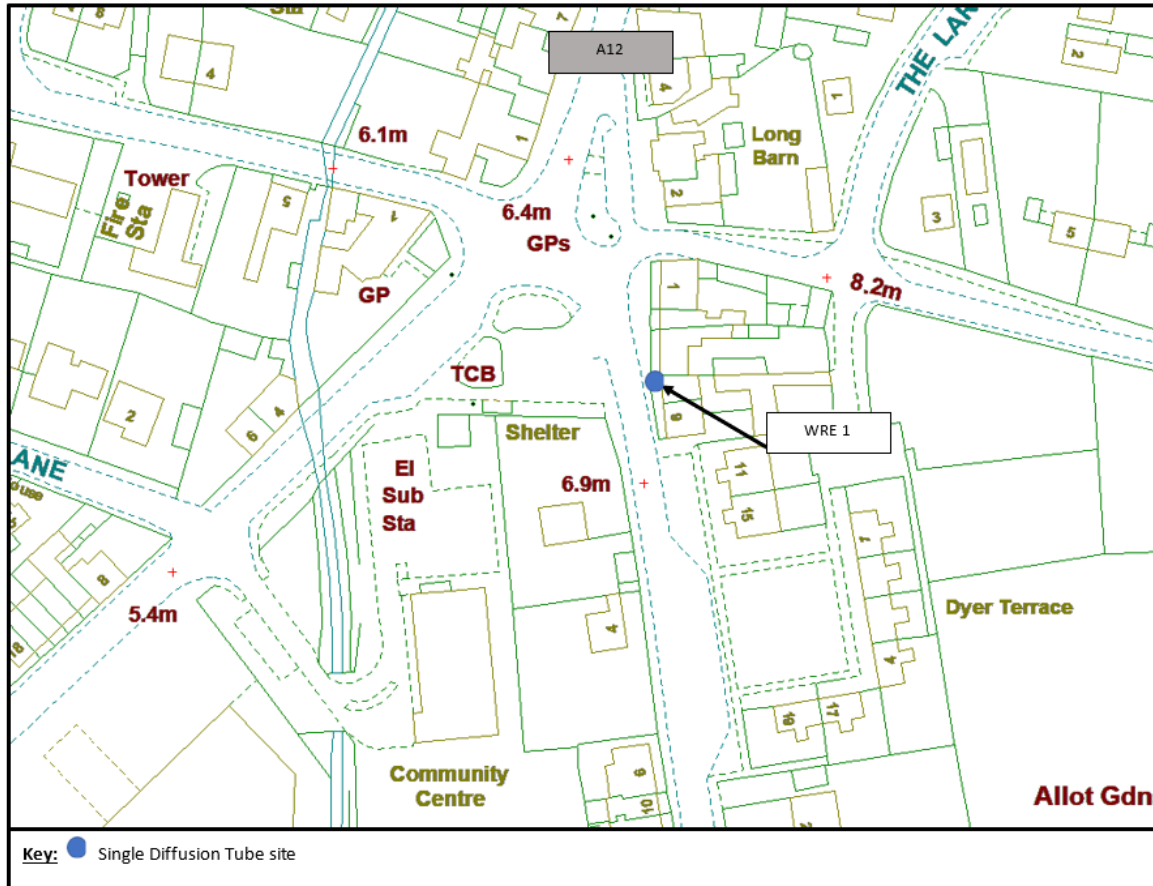


Figure D. 38 Woodbridge AQMA

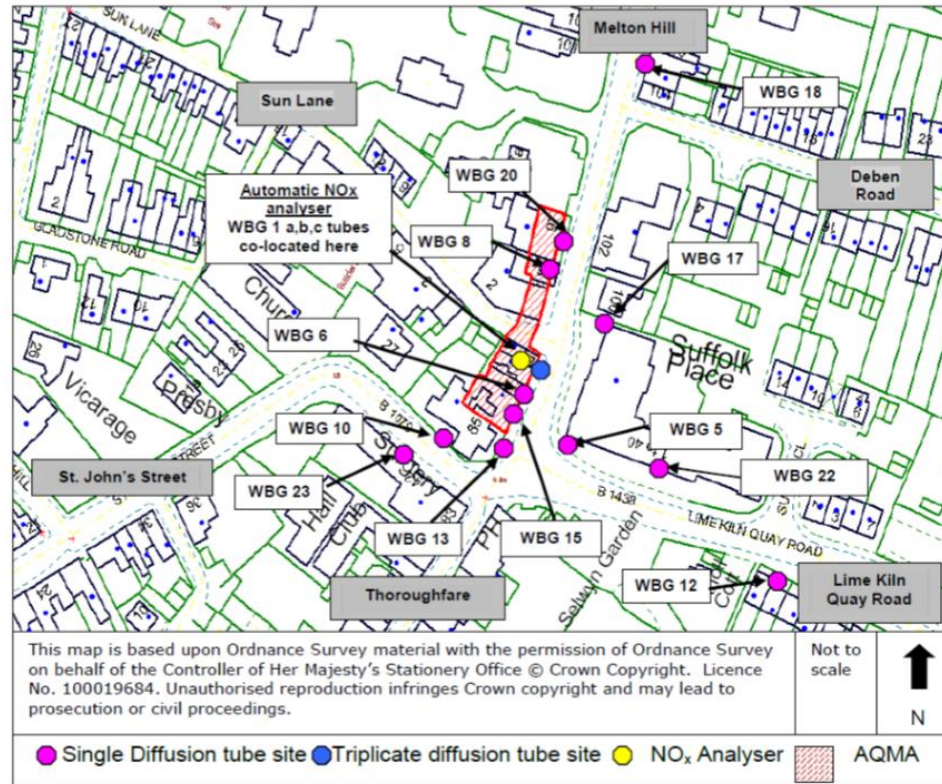
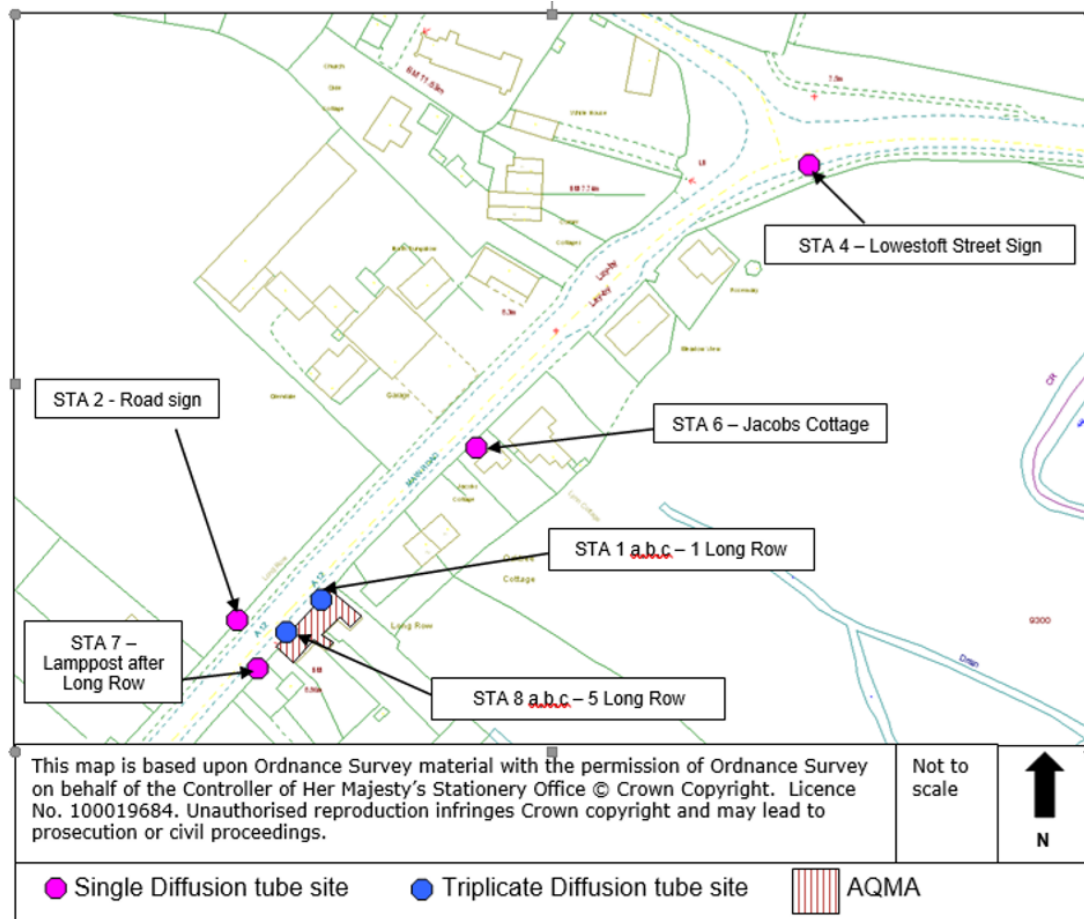


Figure D. 39 St Andrews AQMA



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

Table E.1 – Air Quality Objectives in England<sup>8</sup>

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

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<sup>8</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).



## Appendix F: Impact of COVID-19 upon LAQM

COVID-19 has had a significant impact on society. Inevitably, COVID-19 has also had an impact on the environment, with implications to air quality at local, regional and national scales.

COVID-19 has presented various challenges for Local Authorities with respect to undertaking their statutory LAQM duties in the 2021 reporting year. Recognising this, Defra provided various advice updates throughout 2020 to English authorities, particularly concerning the potential disruption to air quality monitoring programmes, implementation of Air Quality Action Plans (AQAPs) and LAQM statutory reporting requirements. Defra has also issued supplementary guidance for LAQM reporting in 2021 to assist local authorities in preparing their 2021 ASR. Where applicable, this advice has been followed.

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention, most notably in relation to emissions of air pollutants arising from road traffic. The vast majority (>95%) of AQMAs declared within the UK are related to road traffic emissions, where attainment of the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) is considered unlikely. On 23rd March 2020, the UK Government released official guidance advising all members of public to stay at home, with work-related travel only permitted when absolutely necessary. During this initial national lockdown (and to a lesser extent other national and regional lockdowns that followed), marked reductions in vehicle traffic were observed; Department for Transport (DfT) data<sup>9</sup> suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April, relative to pre COVID-19 levels.

This reduction in travel in turn gave rise to a change of air pollutant emissions associated with road traffic, i.e. nitrous oxides (NO<sub>x</sub>), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)<sup>10</sup> has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO<sub>2</sub> annual mean concentrations

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<sup>9</sup> Prime Minister's Office, COVID-19 briefing on the 31<sup>st</sup> of May 2020

<sup>10</sup> Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

were between 20 and 30% relative to pre-pandemic levels, which represents an absolute reduction of between 10 to 20 $\mu\text{g}/\text{m}^3$  if expressed relative to annual mean averages. During this period, changes in PM<sub>2.5</sub> concentrations were less marked than those of NO<sub>2</sub>. PM<sub>2.5</sub> concentrations are affected by both local sources and the transport of pollution from wider regions, often from well beyond the UK. Through analysis of AURN monitoring data for 2018-2020, AQEG have detailed that PM<sub>2.5</sub> concentrations during the initial lockdown period are of the order 2 to 5 $\mu\text{g}/\text{m}^3$  lower relative to those that would be expected under business-as-usual conditions.

As restrictions are gradually lifted, the challenge is to understand how these air quality improvements can benefit the long-term health of the population.

### **Impacts of COVID-19 on Air Quality within East Suffolk Council**

Across all the monitoring locations in ESC there has been a reduction in annual mean NO<sub>2</sub> concentrations between 2019 to 2020. Whilst this is a continuation of an overall decreasing trend since 2016, the large decrease in 2020 is likely to have arisen as a consequence of COVID-19. There has been a percentage reduction in annual mean concentration relative to 2019 ranging from 8% to 40%, with an average reduction across all sites of 20%.

During the first pandemic lockdown East Suffolk Council staff were given the ability to work from home where appropriate and this has continued to the present day. Mileage associated with travel to work was therefore reduced in the district. Staff and member mileage was 68.4% lower in 2020/21 than in 2019/20. Emissions associated with ESC travel will therefore have been much reduced, with a similar trend for all residents of the district likely.

### **Opportunities Presented by COVID-19 upon LAQM within East Suffolk Council**

There were some LAQM related opportunities arising as a consequence of COVID-19. Suffolk County Council produced the Transport Recovery Plan 2020 following the £1.685 million funding from the Government for improving walking, cycling and public transport. This included four temporary trial schemes within the East Suffolk District:

1. Lowestoft Road, Beccles – upgrading advisory facilities to mandatory and provide light segregation to make safer and easier cycling between the East of Beccles to Ellough Road area and the Town Centre;

2. Beccles, Market Row to New Market – removal of motorised through traffic from the shopping area to improve the ease of cycling and walking;
3. Hamilton Road, Felixstowe – creating a more accessible space for pedestrians and cyclists which is free of motorised vehicles. Plans for this trial to be permanent have been designed; and
4. High Road (East and West), Felixstowe – update existing advisory cycle lanes to mandatory and provide light segregation, also extend facilities by 900m to Cliff Road. Aim to create safer and easier cycling across the town linking residential to the Town Centre.

The County Council reported a consistently higher number of website visits to the cycling pages of 'suffolkonboard' from March to September 2020. They also ran a 4-week Travel Demand Management project in November 2020 to try and maintain and promote the positive travel habits used more widely during the COVID-19 lockdowns.

### Challenges and Constraints Imposed by COVID-19 upon LAQM within East Suffolk Council

The Environmental Protection Team has been, and continues to be, affected by COVID-19 causing an increase in reactive work arising from changing habits during successive lockdowns, together with 25% of colleagues having either suffered COVID-19 during the past 12 months or being severely impacted by close family members in their household being affected. We were fortunately able to minimise any impacts on our air quality monitoring, which ensured that we can use the data collected to provide important evidence surrounding the impact of lockdown on air quality in the district.

A number of air quality improvement measures were put on hold or impacted during 2020 and are reported on in Table 2.2. Examples include:

- Our work delivering educational talks to schools regarding air quality and anti-idling. **Small Impact.**
- Bike-ability courses run by Suffolk County Council within schools. **Small Impact.**
- Council owned pool bikes were not able to be made available for use. **Small Impact.**
- 'Katch a Lift' electric taxi travelling between Framlingham, Wickham Market and Campsea Ashe train station – difficulties with multi-occupancy which the scheme viability relies on. **Small Impact.**

**Table F 1 – Impact Matrix**

Category	Impact Rating: None	Impact Rating: Small	Impact Rating: Medium	Impact Rating: Large
Automatic Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Automatic Monitoring – QA/QC Regime	Adherence to requirements as defined in LAQM.TG16	Routine calibrations taken place frequently but not to normal regime. Audits undertaken alongside service and maintenance programmes	Routine calibrations taken place infrequently and service and maintenance regimes adhered to. No audit achieved	Routine calibrations not undertaken within extended period (e.g. 3 to 4 months). Interruption to service and maintenance regime and no audit achieved
Passive Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Passive Monitoring – Bias Adjustment Factor	Bias adjustment undertaken as normal	<25% impact on normal number of available bias adjustment colocation studies (2020 vs 2019)	25-50% impact on normal number of available bias adjustment studies (2020 vs 2019)	>50% impact on normal number of available bias adjustment studies (2020 vs 2019) and/or applied bias adjustment factor studies not considered representative of local regime
Passive Monitoring – Adherence to Changeover Dates	Defra diffusion tube exposure calendar adhered to	Tubes left out for two exposure periods	Tubes left out for three exposure periods	Tubes left out for more than three exposure periods
Passive Monitoring – Storage of Tubes	Tubes stored in accordance with laboratory guidance and analysed promptly.	Tubes stored for longer than normal but adhering to laboratory guidance	Tubes unable to be stored according to be laboratory guidance but analysed prior to expiry date	Tubes stored for so long that they were unable to be analysed prior to expiry date. Data unable to be used
AQAP – Measure Implementation	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP
AQAP – New AQAP Development	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP

## **Appendix G: Woodbridge Air Quality Management Area (AQMA) Revocation Assessment**

This appendix provides an assessment of air quality in the East Suffolk Woodbridge AQMA and presents the evidence to support its revocation.

Consideration will be given to:

- The monitoring data obtained over a number of years within the AQMA;
- The projected roadside nitrogen dioxide (NO<sub>2</sub>) concentration;
- Local and national trends in NO<sub>2</sub> emissions; and
- Local and regional factors that may impact on the AQMA.

### **Review & Assessment**

Part IV of the Environment Act 1995 (the Act) introduced the Local Air Quality Management regime that places a legal duty on local authorities to regularly review and assess air quality in their areas against Air Quality Strategy (AQS) objectives. The AQS objectives for England are set out in the Air Quality (England) Regulations 2000 and the Air Quality (England) (Amendment) Regulations 2002 and are shown in Table E.1.

Local authorities must declare an AQMA where any of the AQS objectives are exceeded and subsequently set out the measures they intend to put in place to secure compliance with the AQS objectives under an Air Quality Action Plan (AQAP).

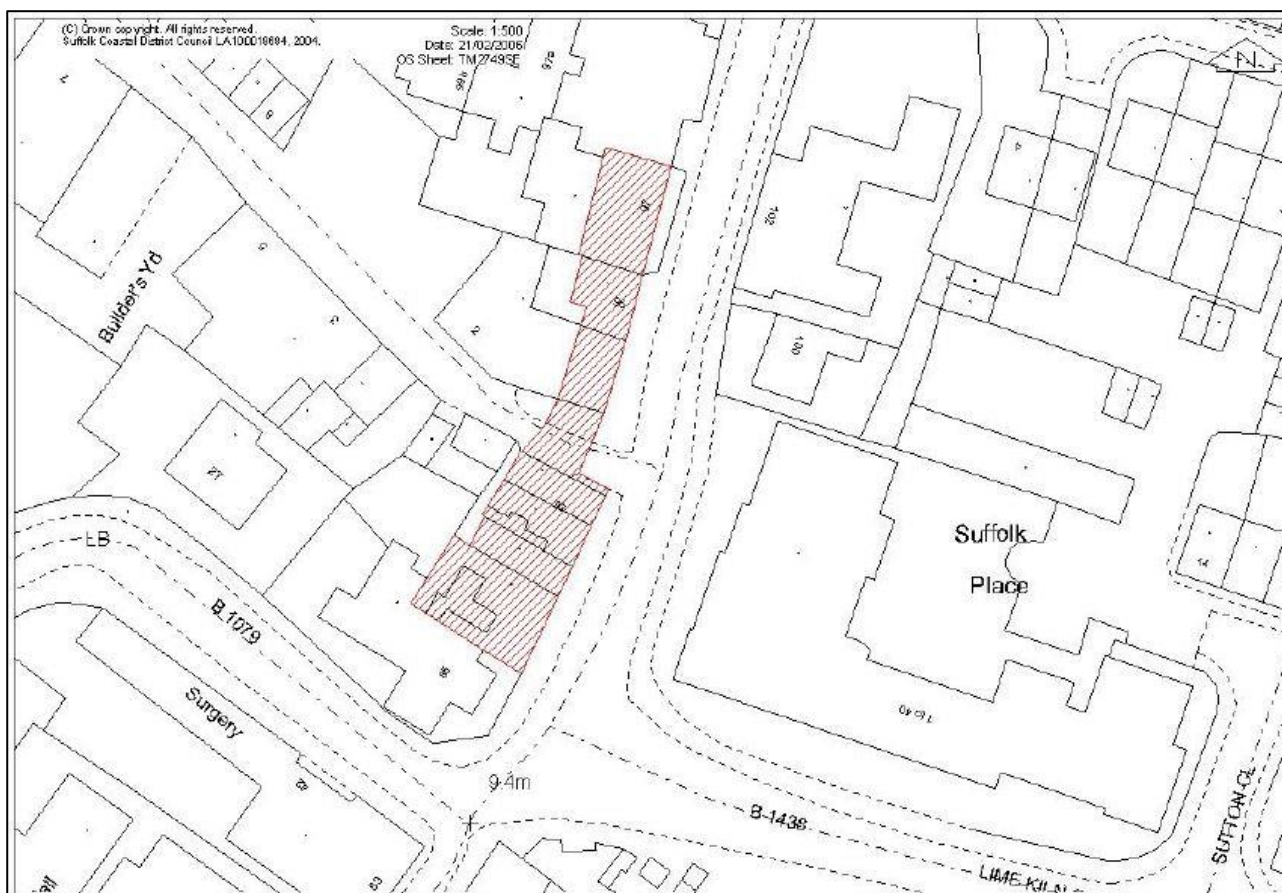
With effective implementation of the Action Plan and national policies aimed at reducing the emission of pollutants it is expected that the air quality within AQMAs should improve to a point that concentrations will remain below the AQS objectives. A revocation of an AQMA can then be formally declared by Order under section 83 of the Environment Act.

Each year an Annual Status Report (ASR) must be prepared by local authorities detailing the strategies employed to improve air quality and any progress that has been made. Comments made by Defra in relation to the 2020 ASR support the Council's plans to revoke the Woodbridge AQMA, due to continual compliance with the NO<sub>2</sub> annual mean AQS objective.

## Woodbridge AQMA

The Woodbridge AQMA was declared in 2006 to address traffic related NO<sub>2</sub> concentrations in excess of the annual mean AQS objective. The AQMA encompasses six properties on the western side of the Thoroughfare and Melton Hill (B1438), at the junction with Lime Kiln Quay Road (B1438). The extent of the AQMA, as declared under the original order, is demonstrated in Figure G.1.

**Figure G.1 - Woodbridge AQMA Extent - Declaration Order No. 1**



## Revoking an AQMA: The Legal Framework & Guidance

### The Environment Act 1995

Section 83 (2b) of the Environment Act (1995) states that an AQMA:

*“.....may, as a result of a subsequent air quality review, be revoked by such an order, if it appears on that subsequent air quality review that the air quality standards and objectives are being achieved, and are likely throughout the relevant period to be achieved, within the designated area”.*

## Statutory Guidance

Guidance on the requirements for revoking an AQMA are set out in statutory guidance LAQM PG16 and LAQM TG 16.

PG 16 states that:

- *“An AQMA can be revoked where a review demonstrates that air quality objectives are being met and will continue to do so. The guidance suggests that monitoring results should have been below national objective levels for 3 years or more prior to revocation.*
- *A copy of the revocation should be submitted to Defra and other statutory consultees and made publicly available to ensure the public and local businesses are aware of the situation. It is expected that the local authority will take the relevant action imposed by the Order within four months following receipt of comments from Defra.”*

TG 16 states that:

- *“In some instances detailed modelling to revoke an AQMA may not be necessary and an AQMA may be amended or revoked following a screening assessment or on the basis of robust monitoring evidence.*
- *Pollutant concentrations may vary significantly from one year to the next, due to the influence of meteorological conditions, and it is important that authorities avoid cycling between declaring, revoking and declaring again, due simply to these variations.”*

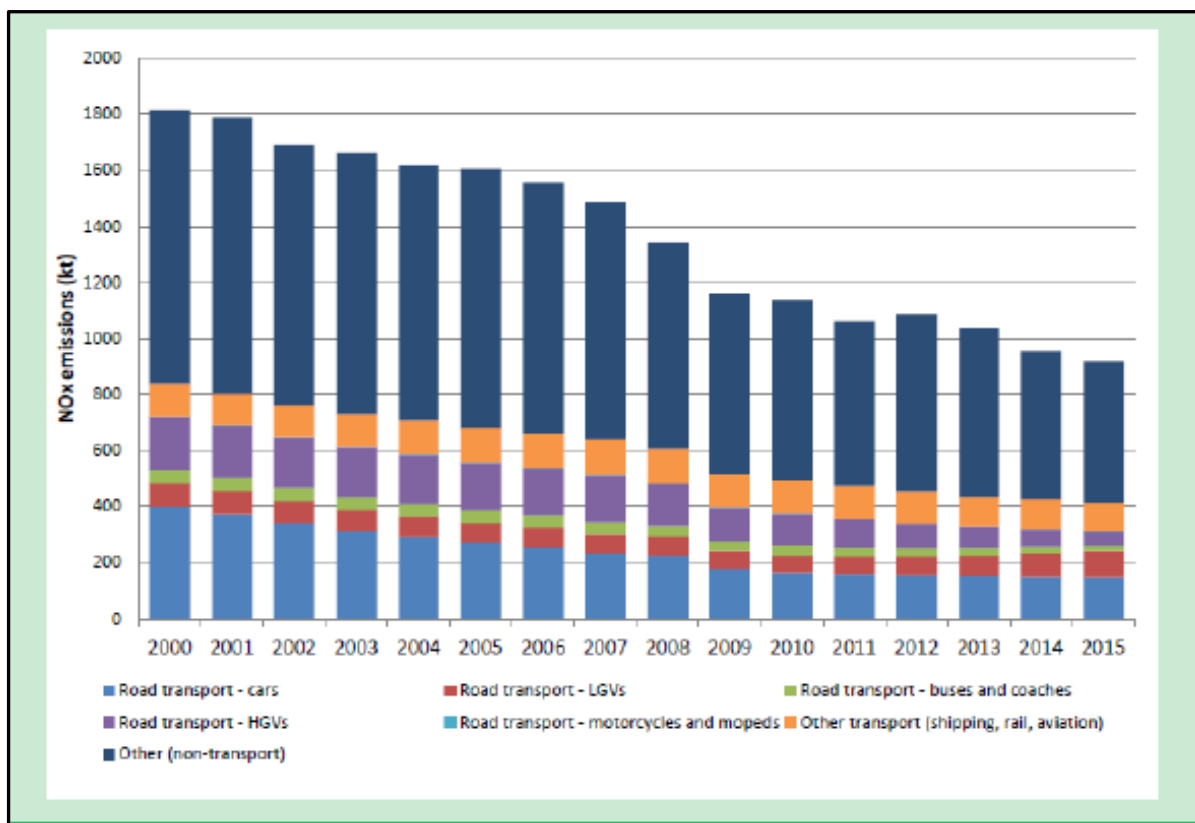
Therefore, before revoking an AQMA on the basis of measured pollutant concentrations, there should be reasonable certainty that any future exceedances (that might occur in more adverse meteorological conditions) are unlikely. For this reason, it is expected that authorities will need to consider measurements carried out over several years or more, national trends in emissions, as well as local factors that may affect the AQMA, including measures introduced as part of an AQAP, together with information from national monitoring on high and low pollution years.

## National Influence

National strategies, policies and plans have and will continue to influence local polluting emissions. Total UK emissions of NO<sub>x</sub> fell by almost 70% between 1970 and 2015 and by

over 19% between 2010 and 2015 . Figure G. 2 shows the reduction for each source sector with cars having the largest proportion of transport emissions. It also shows an increasing proportion of Light Goods Vehicle (LGV) emissions from 2010 above that of 2000 which mirrors the increasing proportion of LGVs in the local traffic fleet.

**Figure G. 2 - Annual UK Nitrogen Oxides Emissions Since 2000**



Future influence on emissions is considered in a revised Clean Air Strategy **Error! Bookmark not defined.** with a major transport emission objective that states:

*“We will end the sale of new conventional petrol and diesel cars and vans by 2040. We will position the UK as the best place in the world to develop, manufacture and use zero exhaust emissions vehicles and, during the transition, we will ensure that the cleanest conventional vehicles are driven on our roads”.*

This transition to ultra-low and zero emission vehicles presents the largest potential for the reduction of future road traffic emissions in this AQMA.



Department for Transport (DfT) road traffic forecasts<sup>11</sup> provide future numbers, compositions and emissions based on seven scenarios linked to changing population, economic and social well-being and technological changes. The findings include:

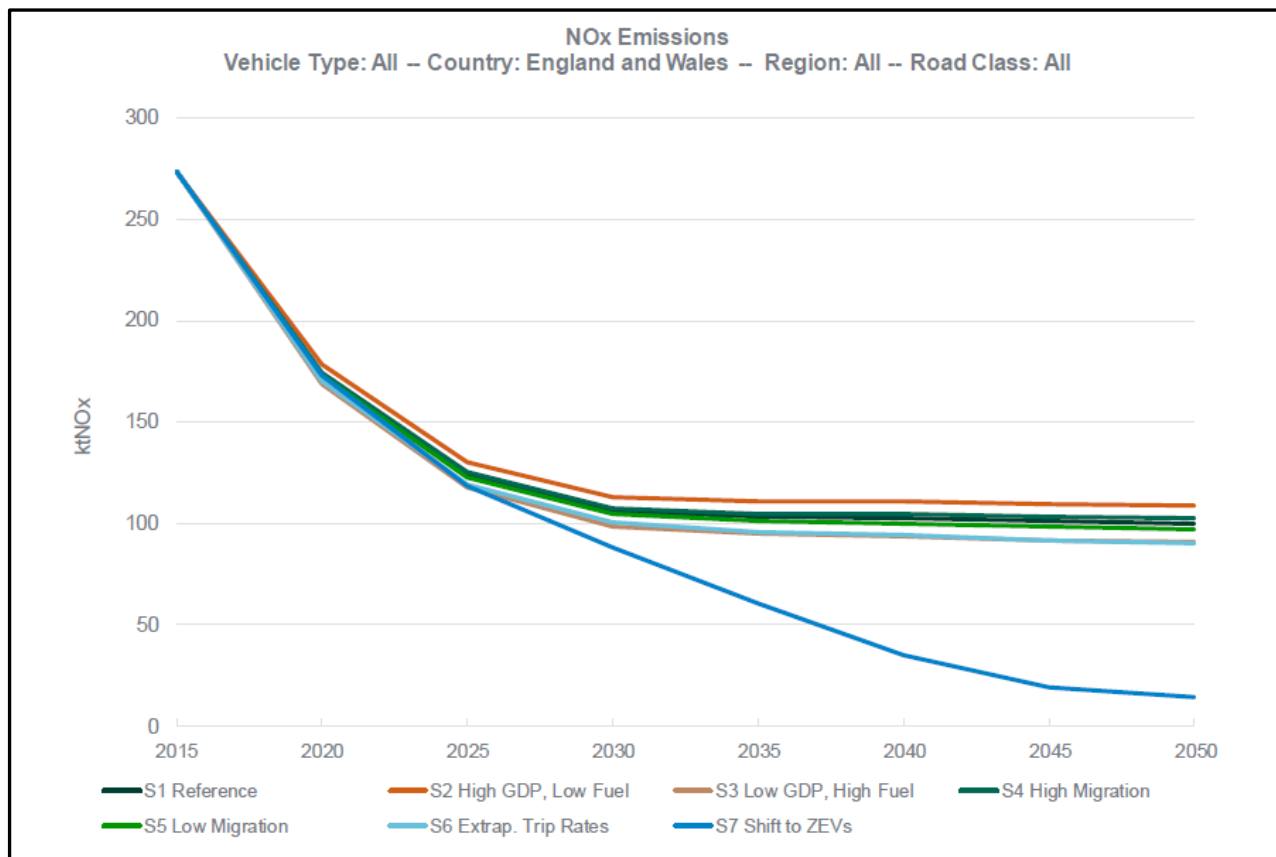
- From 2015, traffic is forecast to grow by between 17% and 51% by 2050;
- Traffic growth on the Strategic Road Network (SRN) ranges between growth of 32% and 66% by 2050;
- Forecast growth on principal roads and minor roads is between 10%-47% and 11%-50% respectively;
- Car traffic is forecast to grow between 11% and 48% by 2050, whilst LGV traffic is forecast to continue growing significantly in all scenarios (between 23% and 108%);
- HGV traffic growth is forecast to be lower than other vehicle types, with growth ranging from 5% to 12% by 2050;
- Congestion is forecast to grow as a result of increases in traffic. The proportion of traffic in congested conditions in 2050 is forecast to range from 8% to 16% depending on the scenario, compared to 7% in 2015; and
- 'There is great uncertainty around the possible impact of transport technology on road traffic demand and it is unclear how far our existing understanding of the drivers of demand will continue to apply'.

In terms of future transport emissions, the national transport model (NTM) produces forecasts of emissions of Carbon Dioxide (CO<sub>2</sub>), Oxides of nitrogen (NO<sub>x</sub>) and Particulate Matter (PM<sub>10</sub>) measured at the tailpipe (though this does not capture any upstream emissions produced) as shown in **Error! Reference source not found.** Scenarios 1-6 take account of the impact of committed transport policies to reduce emissions from road travel whilst scenario 7 assumes a higher level of ultra-low emission vehicles (ULEV) uptake, assuming 97% of cars and LGVs are Zero Emission Vehicles (ZEVs) by 2050 and almost all cars and LGVs sold from 2040 have zero emissions at tailpipe. For NO<sub>x</sub> emissions the forecast shows a decline of between 60% and 95% by 2050 (Figure G.3). Despite the predicted increase in vehicle numbers the introduction of low emission vehicles is likely to lead to continued reduction in NO<sub>2</sub> levels from transport.

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<sup>11</sup> Department for Transport (DfT), July 2018 'Road Traffic Forecast 2018 Moving Britain Forward'

**Figure G.3 - Forecast NOx Road Traffic Emissions (kt) for England & Wales**



As already highlighted in Appendix F: Impact of COVID-19 upon LAQM, COVID-19 also had notable impacts on NO<sub>2</sub> concentrations in 2020. The Air Quality Expert Group (AQEG)<sup>10</sup> has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO<sub>2</sub> annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which represents an absolute reduction of between 10 to 20µg/m<sup>3</sup> if expressed relative to annual mean averages.

## Regional Influence

### Local Plan

The Suffolk Coastal Local Plan (SCLP) sets out a vision for the communities of the former Suffolk Coastal area up to 2036. The National Institute for Health and Care Excellence (NICE) encourages Local Authorities to address the issue of air pollution in their Local Plan. The SCLP seeks to improve air quality not only in AQMAs but across the plan area and

elsewhere. In particular, development proposals are expected to minimise and mitigate air pollution and to contribute towards the achievement of air quality objectives.

The SCLP area comprises both urban and rural settlements and within certain parts there are limited public transport opportunities, resulting in a heavy reliance on private cars as a form of transport. Due to this, there has been a focus on sustainable transport mechanisms in the SCLP. This complements the Local Transport Plan (LTP), identifying changes that will secure an improved transport network and contributing to the shared priority of improving air quality.

Policy SCLP7.1: Sustainable Transport, impacts on air quality by regulating developments to ensure they encourage and facilitate the use of sustainable transport options where possible and support the efficient use of existing transport networks.

Developments are supported in the SCLP area only when:

- Any significant impacts on the highways network are mitigated;
- It is proportionate in scale to the existing transport network;
- All available opportunities to enable and support travel on foot, by cycle or public transport have been considered and taken;
- It is located close to, and provides safe pedestrian and cycle access to services and facilities;
- It is well integrated into and enhances the existing cycle network including the safe design and layout of new cycle routes and provision of covered, secure cycle parking
- It is well integrated into, protects and enhances the existing pedestrian routes and the public rights of way network;
- It reduces conflict between users of the transport network including pedestrians, cyclists, users of mobility vehicles and drivers and does not reduce road safety; and
- The cumulative impact of new development will not create severe impacts on the existing transport network.

Other specific policies relevant to the improvement of air quality include Policy SCLP 10.3 Environmental Quality, which requires development proposals to protect the environment and minimise all forms of pollution where possible, including air pollution. Policy SCLP 11.2 Residential Amenity requires the Council to include air quality and pollution when considering the impact of a development on residential amenity.

Additionally, Policy SCLP 12.31: Strategy for Woodbridge is an area specific policy which sets out a strategy which acknowledges physical and environmental constraints.

Opportunities to enhance the historic environment and the riverside character area of the town will be only supported where they bring economic and social benefits which do not have a significant adverse impact on the environmental designations. Part F of the policy, therefore is to consolidate a town that promotes improvements to air quality.

### Local Transport Plan (LTP)

The Suffolk County Council LTP (2011-2031) also provides a strategy for transport management until 2031. The plan prioritises the growth of business, reducing the demand for car travel, making efficient use of transport networks and improving infrastructure, which should all help to ensure continued compliance within the Woodbridge AQMA.

### Air Quality Action Plan

An Air Quality Action Plan was also prepared for the Woodbridge AQMA, first published in May 2011. The Action Plan consists of 20 measures that could be undertaken at the junction to ease the congestion or reduce the overall traffic flows, in turn reducing NO<sub>2</sub>. The measures can be considered within two main categories; 'on the ground works' and 'softer measures'.

The 'on the ground works' started with the installation of a new computerised Microprocessor Optimised Vehicle Actuation (MOVA) system to the traffic lights whose aim is to reduce congestion and therefore queue lengths. This reduced the extreme queue lengths at each arm of the junction but not the average number of vehicles queuing at the junction.

A feasibility study supported the further measures which involved physical junction alterations, which had two recommendations; to install a weather station for 3 months within the AQMA, and to trial holding back traffic a distance from the lights (therefore away from the AQMA) and pulse it through.

The weather station was installed from July to November 2015 and results showed that the topography of the junction itself is a major factor in the AQMA. The layout of the junction is such that the wind speed is much lower than expected and the wind direction is slightly altered from the norm. The study suggested that vehicle emissions are 'funnelled' along Melton Hill away from the junction, and are then dispersed very slowly due to the low wind speeds and canyon like effect of the buildings on both sides. Emissions therefore tend to accumulate rather than disperse resulting in higher than expected NO<sub>2</sub> concentrations at this road junction.

As has been demonstrated, NO<sub>2</sub> concentrations within the AQMA have reduced to below the AQS objective without a discernible change in traffic volume. It is hypothesised that the general fleet emissions reductions, achieved as older vehicles are replaced with newer, cleaner ones, is the primary cause. This, alongside the incremental improvements brought about through the implementation of the AQAP, has led to the potential for revocation of the AQMA.

The AQAP was in the process of being updated, and a draft version has been approved by Defra. Due to the decision to revoke this AQMA, it is the Council's intention that the draft updated Action Plan will not be finalised, but will be retained and archived for future use if needed.

### Air Quality Strategy

In 2021 East Suffolk Council published its first Air Quality Strategy, which aims to:

- Raise public awareness of the importance of air quality;
- Reduce emissions of PM<sub>2.5</sub> within the district;
- Encourage and enable active travel to benefit air quality and improve public health;
- Document the efforts made to improve air quality across the different areas of the Council.

By setting a strategic direction on air quality at both district and county levels across the district, it is anticipated that greater improvements can be made, including within the Woodbridge AQMA. The strategy sets out a number of statutory and non-statutory obligations, ranging from sustainable transport to public information, that set the agenda the Council will be working towards in the coming years. As per paragraph 4.11 of LAQM.PG(16), the strategy effectively supersedes local action planning work in the event of revocation, ensuring continued air quality improvements beyond statutory designations.

### Local Development

Development Consent Order (DCO) applications have been submitted for Sizewell C (SZC), East Anglia ONE North and East Anglia TWO (EA1N and EA2) Offshore Windfarms, which it is recognised may have an impact on Woodbridge. Further information on these DCO applications can be found at:

- [The Sizewell C Project | National Infrastructure Planning](#);
- [East Anglia ONE North Offshore Windfarm](#); and

- [East Anglia TWO Offshore Windfarm](#).

All three applications have had detailed air quality assessments submitted, which the Council have had independently reviewed. The applications assess the individual DCO impacts and the 'in-combination' impacts of all three DCOs together. None of the DCOs, either individually or in-combination, are assessed to cause significant impacts within the Woodbridge AQMA.

Air quality monitoring within and around the Woodbridge AQMA will be continued by the Council throughout the construction period of these DCOs. Traffic mitigation for the construction phase of SZC has been included in the DCO through the inclusion of Park and Ride sites for workers, a Freight Management Centre for construction vehicles, and in the form of a Construction Traffic Management Plan and Construction Worker Travel Plan which are under discussion as part of the DCO. These should ensure that local air quality considerations are met, within which Woodbridge will be included.

Discussions are also underway to agree the use of the latest EURO emission classifications for the construction fleet where possible for all DCO applications, to minimise their impacts on emissions.

The District Council office was moved out of Woodbridge in 2016, though the site is yet to be developed. An application (*DC/19/2641/FUL - Former Council Offices, Melton Hill, Woodbridge IP12 1AU - Residential development (100 no units) including 32 no affordable housing units (Class C3) plus a community space (91 sq.m) (Class D1) and a retail unit (157.7sq.m) (A1/A2/A3), car parking, means of access and landscaping, all following demolition of the buildings on site*) was permitted for the site in November 2019. The air quality assessment submitted for the application indicated that fewer journeys would be made through the AQMA under the revised land use. Full details can be found via the Council's [Simple Search](#) planning website. The site was remarketed in Summer 2021 and the procurement process is currently being followed to identify the preferred bidder.

The new Council Offices are located at Riduna Park in Melton, approximately 1 mile from the original site and the AQMA. In August 2016 a Travel Plan was published for the Riduna Park site which helps to mitigate the number of journeys made by Council employees, including through the AQMA. During the first Covid-19 pandemic lockdown in 2020 East Suffolk Council staff were given the ability to work from home where appropriate and this has continued to the present day. Emissions associated with ESC travel will have been much reduced during the lockdowns and this reduction is continuing.

## Air Quality within the Woodbridge AQMA

A comparison of the annual mean AQS objective for NO<sub>2</sub> against the ratified monitoring results between 2000 and 2020 from diffusion tubes located with the East Suffolk Woodbridge AQMA can be seen in Figure G.4.

**Figure G.4 - Woodbridge AQMA NO<sub>2</sub> Diffusion Tube Monitoring Trend.**

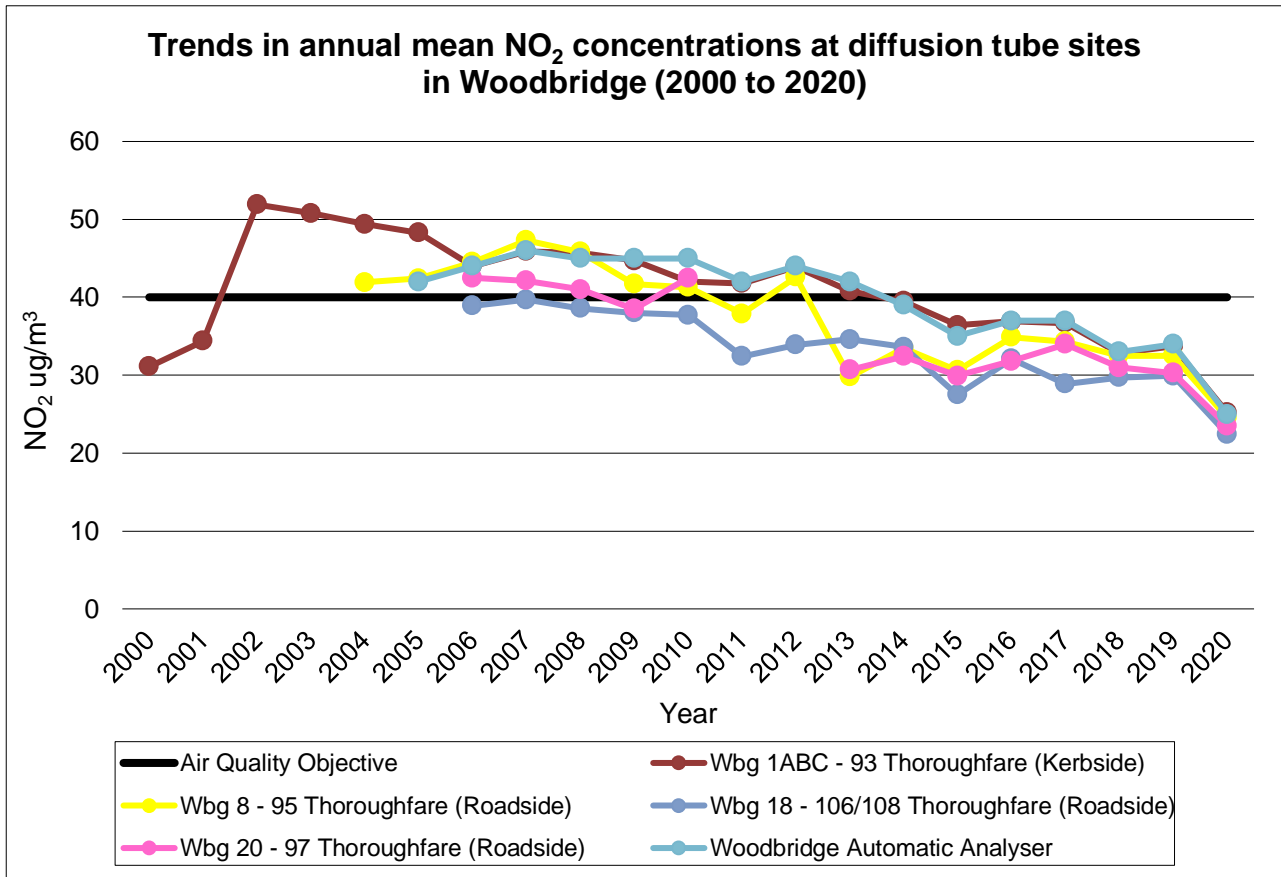


Figure G.4 shows that all five monitoring locations within the AQMA, the monitored NO<sub>2</sub> concentrations have been consistently below the annual mean AQS objective of 40 µg/m<sup>3</sup> for seven years (since 2014). Furthermore, given that the concentrations have consistently been below 60 µg/m<sup>3</sup> it is unlikely that the hourly mean AQS objective has been exceeded during this period. This is reflected by the automatic monitoring data, which has recorded just one hourly mean concentration in excess of 200 µg/m<sup>3</sup> in the last five years, and that in 2017.

## Predicted Trends

To provide confidence that compliance with the objective will continue, Defra's Roadside NO<sub>2</sub> Projection factors (Table G.3) have been used. The 2020 monitored concentrations have been projected forward five years (2021-2025) to demonstrate concentrations are expected to remain below the AQS objective. The adjustment factors applied for Woodbridge were the 'Rest of UK HDV=<10%'. The projected results for the diffusion tube locations within the AQMA are presented in Table G.1.

**Table G.1 – 2020-based Projected Annual NO<sub>2</sub> Mean Concentrations - Woodbridge**

Site	Monitored Annual NO <sub>2</sub> mean concentration (µg/m <sup>3</sup> )	Projected Annual NO <sub>2</sub> mean concentration (µg/m <sup>3</sup> )				
	2020	2021	2022	2023	2024	2025
WBG 1 ABC (93 Thoroughfare)	25.2	23.8	22.5	21.3	20.1	19.1
WBG 8 (95 Thoroughfare)	24.5	23.2	21.9	20.7	19.6	18.6
WBG 18 (106/108 Thoroughfare)	22.5	21.2	20.0	19.0	17.9	17.0
WBG 20 (97 Thoroughfare)	23.5	22.2	20.9	19.9	18.8	17.8
Woodbridge Automatic Analyser	25.0	23.6	22.3	21.1	20.0	18.9

In recognition of the likelihood that 2020 is somewhat of an anomalous year, similar projections have been made based on 2019 data, as follows in Table G.2, to provide further confidence in the assessment of continued compliance.



**Table G.2 – 2019-based Projected Annual NO<sub>2</sub> Mean Concentrations - Woodbridge**

Site	Monitored Annual NO <sub>2</sub> mean concentration (µg/m <sup>3</sup> )	Projected Annual NO <sub>2</sub> mean concentration (µg/m <sup>3</sup> )				
	2019	2021	2022	2023	2024	2025
WBG 1 ABC (93 Thoroughfare)	33.7	30.2	28.5	27.1	25.6	24.3
WBG 8 (95 Thoroughfare)	32.5	29.2	27.5	26.1	24.7	23.4
WBG 18 (106/108 Thoroughfare)	29.9	26.8	25.3	24.0	22.7	21.5
WBG 20 (97 Thoroughfare)	30.3	27.2	25.7	24.3	23.0	21.8
Woodbridge Automatic Analyser	34.0	30.5	28.8	27.3	25.8	24.5

From **Error! Reference source not found.** and Table G.2, it can be observed that in either case the forecasted concentrations of NO<sub>2</sub> decrease over the five-year period, and remain well below the AQS annual mean objective, even assuming a return to 2019 activity levels. The Government's commitment to net zero emissions by 2050 and the adoption of the Road to Zero transport strategy are expected to deliver significant further reductions in emissions from road transport. In its publication "Road Traffic Forecasts 2018"<sup>12</sup> the Department of Transport has predicted that vehicular emissions of NO<sub>2</sub> will fall between 60% and 90%. In turn, this provides confidence that the Woodbridge AQMA can be revoked without concern that the objective concentration will be exceeded, unless significant new sources arise, at which point the NO<sub>2</sub> concentrations will be assessed again. The Council intend to continue its existing monitoring regime in order to observe this.

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<sup>12</sup> Department of Transport. Road Traffic Forecasts 2018. Available at: <https://www.gov.uk/government/publications/road-traffic-forecasts-2018>

**Table G.3 - Defra’s Roadside NO<sub>2</sub> Projection Factors**

Projecting Annual Mean Roadside NO <sub>2</sub> Concentrations to Future Years						
Year	Adjustment Factor to be Applied					Worked Example
	Central London	Inner London	Outer London	Rest of UK (HDV = <10%)	Rest of UK (HDV >10%)	
2018	1.000	1.000	1.000	1.000	1.000	The measured NO <sub>2</sub> concentration at a roadside site in Outer London in 2019 is 44.5µg/m <sup>3</sup> . The projected concentration for 2021 would be: 44.5 x (0.829/0.945) = 39.0µg/m <sup>3</sup> .  Roadside locations are typically within 1 to 5 metres of the kerbside, but may extend up to 15 metres depending upon the road configuration and traffic flow.
2019	0.813	0.909	0.945	0.953	0.942	
2020	0.766	0.811	0.878	0.906	0.889	
2021	0.740	0.767	0.829	0.855	0.835	
2022	0.715	0.727	0.775	0.807	0.785	
2023	0.696	0.693	0.738	0.765	0.743	
2024	0.676	0.661	0.695	0.724	0.703	
2025	0.660	0.634	0.657	0.686	0.667	
2026	0.652	0.616	0.630	0.653	0.637	
2027	0.645	0.598	0.606	0.622	0.610	
2028	0.638	0.580	0.582	0.595	0.587	
2029	0.632	0.563	0.560	0.571	0.566	
2030	0.626	0.546	0.542	0.550	0.549	

## Summary, Conclusion and Recommendation

This assessment sets out the evidence relied upon by East Suffolk Council in seeking to revoke the Woodbridge AQMA.

Part IV of the Environment Act 1995 requires Local Authorities to review air quality in its area and assess whether AQS objectives will be achieved. Where it has been shown that the AQS objectives will not be achieved Local Authorities must declare an AQMA and put an AQAP in place to bring air quality within acceptable levels.

Where it can be subsequently demonstrated that AQS objectives are being and will continue to be met a Local Authority can revoke an AQMA by Order under the Environment Act 1995.

The Woodbridge AQMA was designated in 2006 to address exceedances of traffic related NO<sub>2</sub> concentrations. Since 2006, monitoring has shown a continued reduction in pollutant concentrations, with recorded values having fallen below the AQS consistently for several years, since 2014.

National, regional and local policies have influenced the reduction in polluting emissions within the AQMA and it is reasonable to expect that further reductions will be achieved through the increasing use of ultra-low and zero emission vehicles in the coming years.

## East Suffolk Council

Having considered the historical monitoring data associated with the Woodbridge AQMA, national trends in emissions and any likely impacts on the air quality within the AQMA, the Council is satisfied that the AQMA can be revoked. Whilst NO<sub>2</sub> concentrations within the East Suffolk Woodbridge AQMA have been consistently below the AQS objective for seven years, it has also been demonstrated that this is likely to continue into the future.

It is therefore recommended that the Woodbridge AQMA be revoked at the earliest opportunity. A draft Revocation Order is presented in

Appendix H: Draft AQMA Revocation Order, which provided Defra grants approval via the appraisal process, will be enacted as soon as possible, provisionally 1<sup>st</sup> February 2022.

As per paragraph 4.11 of LAQM.PG(16), the Council's recently published Air Quality Strategy will effectively supersede local action planning work in the event of revocation, ensuring continued air quality improvements beyond statutory designations.

## Appendix H: Draft AQMA Revocation Order

### East Suffolk Council Order 2021

#### 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 area known as the Woodbridge AQMA (as shown in the attached map) declared for the Nitrogen dioxide (NO<sub>2</sub>) - Annual Mean on 05/12/2008.
2. This Order shall come into force on 1<sup>st</sup> February 2022.

The Common Seal of East Suffolk Council

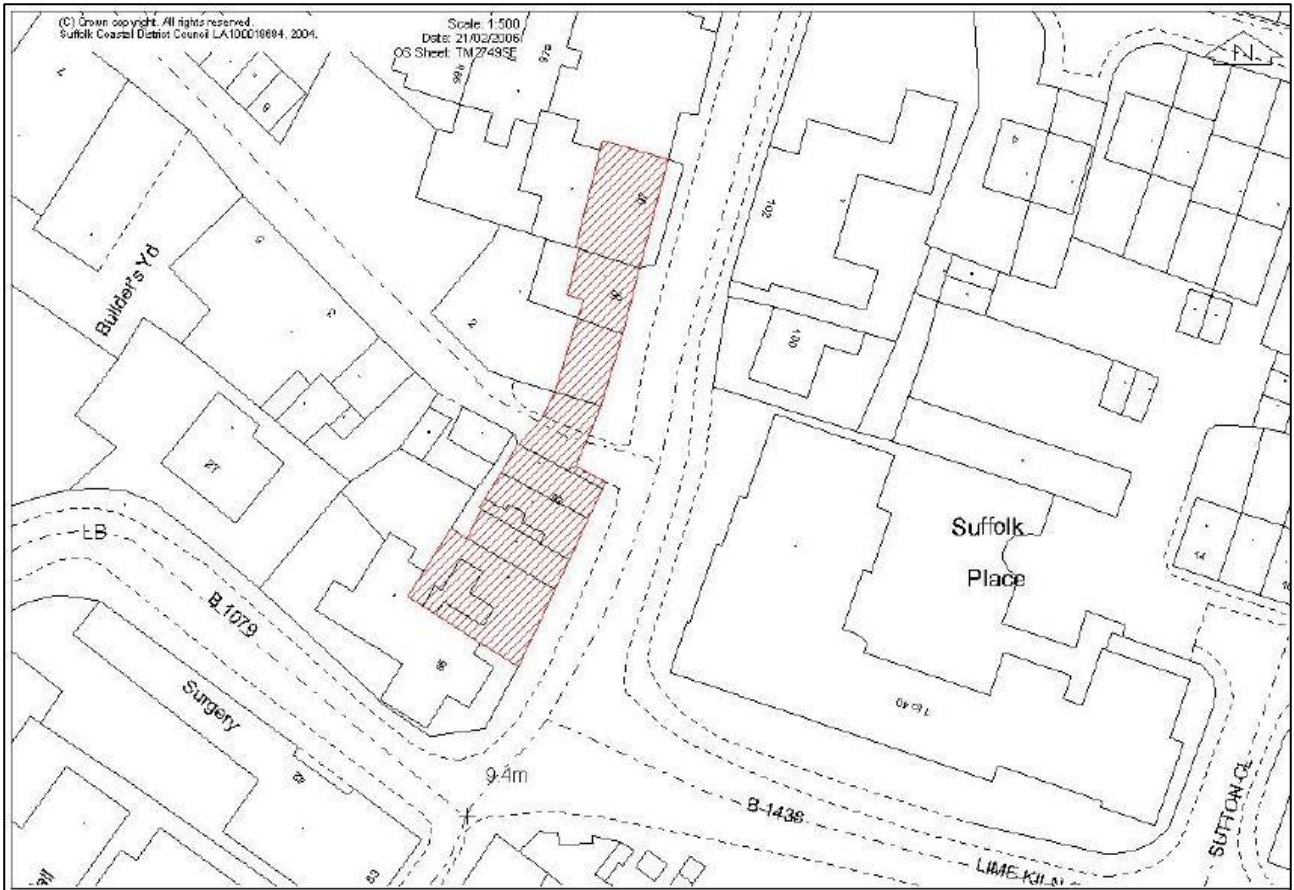
Was hereunto affixed

In the presence of:

.....

Dated:

.....



## 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'
AQEG	Air Quality Expert Group
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
AQS	Air Quality Strategy
ASR	Annual Status Report
AURN	Automatic Urban and Rural Network - UK's automatic monitoring network - the main network used for compliance reporting against the Ambient Air Quality Directives. It includes automatic air quality monitoring stations measuring oxides of nitrogen (NO <sub>x</sub> ), sulphur dioxide (SO <sub>2</sub> ), ozone (O <sub>3</sub> ), carbon monoxide (CO) and particles (PM <sub>10</sub> , PM <sub>2.5</sub> )
Defra	Department for Environment, Food and Rural Affairs
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
ESC	East Suffolk Council
EU	European Union
FDMS	Filter Dynamics Measurement System
kT	Kilotonne
LAQM	Local Air Quality Management
MOVA	Microprocessor Optimised Vehicle Actuation
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
NTM	National Transport Model
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SCC	Suffolk County Council
SO <sub>2</sub>	Sulphur Dioxide

Abbreviation	Description
SZC	Sizewell C
UKAS	United Kingdom Accreditation Scheme
ULEV	Ultra-Low Emissions Vehicle
UTMCS	Urban Traffic Management Control System
WBG	Woodbridge
ZEV	Zero Emission Vehicle



## References

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