2017 Air Quality Annual Status Report (ASR)

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

October 2017

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Executive Summary: Air Quality in Our Area

Air Quality in Suffolk Coastal

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 and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas[1,2]. The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3].

Generally, the air quality in Suffolk Coastal District Council is very good and key pollutant levels are within the limits set by Government for the protection of human health, with the exception of two small localised areas where the national limits set for annual mean nitrogen dioxide (NO_2) have been exceeded and 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)
- Four residential properties within Long Row, Main Road (A12) in Stratford St Andrew.

Each AQMA is discussed briefly below and in more detail in Chapter 2.

The main source of emissions, within the majority of the district, is road traffic which means that the pollutants of concern are nitrogen dioxide (NO_2) and particulate matter. Within the town of Felixstowe, emissions from and associated with the Port of Felixstowe are also a large source of these two pollutants.

NO_2 is measured in the district by automatic analyser and diffusion tubes. There is an automatic analyser situated within Woodbridge, and 54 diffusion tube monitoring locations covering 10 areas; Felixstowe, Kesgrave, Melton, Woodbridge, Martlesham, Little Glemham, Farnham, Stratford St. Andrew, Saxmundham and Leiston. The 2016 monitoring results show only one relevant receptor location, within the declared AQMA at Stratford St. Andrew, where NO_2 is above the annual mean objective level. There is a general trend of NO_2 reductions across the district over time.

Woodbridge AQMA
This AQMA was declared in 2006, further details can be seen at https://uk-air.defra.gov.uk/aqma/details?aqma_id=528 The current Action Plan includes 20 measures to reduce NO_2 concentrations from both queueing and moving traffic at this junction.

Recent studies looking at the layout of the junction and the local weather, in particular the wind speed and direction, indicate that emissions are being 'funnelled' along Melton Hill

[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010
[2] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
[3] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

away from the junction, and dispersed very slowly. In light of these findings, many of the options in the original Action Plan are unlikely to have any significant impact on NO_2 levels. The Action Plan is therefore being updated by the Steering Group and a draft is with the County Council for approval.

NO_2 concentrations within the AQMA have, however, reduced in 2014, 2015 and 2016 to below the annual mean Objective level.

Stratford St Andrew AQMA

This AQMA was declared in 2014, further details can be seen at https://uk-air.defra.gov.uk/aqma/details?aqma_id=1036. The draft Action Plan Consultation finished in September 2017 and the plan is being finalised. It consists of 2 short term, priority action measures and 6 longer term aspirational measures. The main priority measure is for the County Council to move the 30/50mph change of speed limit sign further south out of the village. This should be undertaken in 2017.

Felixstowe AQMA revocation

A third AQMA was historically located at The Dooley Inn, Ferry Lane, Felixstowe (a single property close to the Port of Felixstowe). It was revoked in October 2016 due to falling NO_2 concentrations. These reductions were able, and continue, to be achieved through emissions reduction projects being undertaken by the Port of Felixstowe.

In order to fulfil our duties, Suffolk Coastal retains a part-time dedicated air quality officer within the Environmental Protection team, with other members of the team also undertaking air quality work including responses to Planning applications. Links and contacts have been forged through the Suffolk Air Quality Group with other Suffolk local authorities, Suffolk County Council (Highways and Public Health), Highways England, Public Health England and the Environment Agency. Steering Groups set up for the AQMAs allow close working with relevant Suffolk County Council Highways Officers and relevant local partners.

Actions to Improve Air Quality

There have been a number of actions undertaken during the last year within the district to help reduce air quality emissions and/or provide information to aid us with our air quality plans. These are detailed in Chapter 2. Some of the actions are specific to our declared AQMAs and some are more general across the district:

- A new Travel Plan put in place for the District Council offices in Melton aims to reduce single occupancy car trips and business mileage, increase use of alternative modes of travel, and reduce trips through the Woodbridge AQMA.
- Electric vehicle charging point for 2 vehicles at the new Council Offices with an electric pool vehicle available for staff use.

- The Port of Felixstowe has converted a further 10 of its rubber-tyred gantry cranes from diesel to electric power and plan to replace a further 28 Internal Movement Vehicles by the end of 2017.
- Woodbridge Town Council have obtained agreement for 20mph zones in Woodbridge including a route through the AQMA.
- Woodbridge Town Council are currently consulting on proposed changes to the Traffic Regulation Order for the Thoroughfare.
- 1-week traffic trial in Woodbridge (July 2017) to hold traffic back from the traffic lights and out of the AQMA to determine whether it could be run for a longer period.
- New cycle map for Woodbridge produced by Suffolk County Council.
- Assessment of all relevant planning applications for air quality by the Environmental Protection Team, together with involvement in larger applications such as Sizewell C Power Station and Adastral Park in Martlesham.
- The Public Health and Protection team at SCC are using the Defra/Public Health England Air Quality Toolkit to develop a framework for understanding the Suffolk air quality situation. This will highlight where there are gaps and potentially areas to prioritise.

Conclusions and Priorities

In general, NO_2 levels across the district continued to improve in 2016 with only 1 site, within the Stratford St. Andrew AQMA, above the annual mean Air Quality Objective (AQO).

NO_2 concentrations within the Woodbridge AQMA continue to be below the AQO for the third year running. The updated Action Plan for Woodbridge is almost ready for Public Consultation as a draft. The 1-week traffic trial has been undertaken and the results are being analysed in order to make a decision regarding any future trial.

Concentrations in the Stratford St. Andrew AQMA decreased slightly in 2016 with part of the AQMA now below the annual mean AQO. The Action Plan is being finalised for publication and the main measure within it to move the speed limit is underway.

Emission reduction projects continue to be undertaken by the Port of Felixstowe and NO_2 concentrations continue to correspondingly decrease.

Significant work has been undertaken to reduce the District Councils own emissions via the Travel Plan and through the East Suffolk Environmental Policy and this will continue.

There are a number of priorities for the year ahead;

- Finalise the Action Plan for the Stratford St. Andrew AQMA.
- Work with Suffolk County Council to move the speed limit in Stratford St. Andrew as soon as possible, it is hoped by the end of 2017.
- Finalise the draft update for the Woodbridge Action Plan.

- Assess the findings of the 1-week traffic trial in Woodbridge to determine whether it will be undertaken for a longer period.
- Work with Woodbridge Town Council on possible implementation of 20mph zones and participate in the search for funding to enable this. The challenge will be to ensure that any traffic calming does not lead to unacceptable increases in emissions at other locations.
- Continue to provide input for all relevant planning applications, and input into the Local Plan review with regard to air quality.
- Raise the profile of electric vehicles and aid/promote installation of electric vehicle charge points within the district.
- Continue to raise the profile of air quality within our organisation, with other organisations, and with the public.
- Complete the update of the air quality pages on the District Council website.

Local Engagement and How to get Involved

It is really important that we hear the views and comments of our residents, as your local knowledgeable is invaluable. We undertake Public Consultations on our air quality reports at least once a year which are publicised in the local press and on our website so please keep an eye out and respond – we would love to hear from you. All Town and Parish Councils are consulted on air quality and we are working with a number of them to look at air quality concerns in their areas. We are currently in the process of modernising the air quality pages on our website and hope to have this finished by the end of the year, these should be easier to navigate and include lots of air quality information, both general and more specific to Suffolk Coastal.

If you would like to be more directly involved you could look at joining the East Suffolk Greenprint Forum. This group provides an environmental link between public and voluntary organisations and community groups and is a hub for community groups to share skills and experiences as well as acting as an incubator for local environmental action in communities and organisations. It has successfully operated since 1996 and has over 200 members. The group is facilitated by Suffolk Coastal and Waveney District Councils and is steered by a number of local groups such as Suffolk Coastal and Heaths, the Environment Agency and Transition Woodbridge amongst others.

The main source of air pollution in the district is traffic on our roads. Suffolk Coastal is working to meet the challenge set by air pollution but it will also require a concerted public effort in order to try and 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.

The www.greensuffolk.org/travel website gives advice on all aspects of alternative greener travel options and free support is available to assist with travel plans and personal journey plans. 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 and general supportive information from https://www.sustrans.org.uk/ncn/map, which is a charity devoted to promoting cycling as a healthier alternative form of transport.

We are working to improve the electric vehicle charging network within both the district and Suffolk - you could consider making your next car purchase an electric one and not only enjoy cheaper motoring, but also cleaner in respect of emissions to the atmosphere. Details of local electric charging points can be found at 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.

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 Suffolk Coastal District Council during 2017. 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 Suffolk Coastal District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Suffolk Coastal District Council can be found in Table 2.1 overleaf. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=265 – see full list at http://uk-air.defra.gov.uk/aqma/list. Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides a map of air quality monitoring locations in relation to the AQMAs.

Woodbridge AQMA

This AQMA was declared in 2006, further details can be seen at https://uk-air.defra.gov.uk/aqma/details?aqma_id=528. The current Action Plan (published in 2011) includes 20 measures to reduce NO_2 concentrations from both queueing and moving traffic at this junction. In 2011 a queue detector system (MOVA) was installed in the traffic lights which reduced the extremes of queueing but did not impact on NO_2 concentrations within the AQMA.

More recent studies show that the layout of the junction and local weather conditions are acting to 'funnel' emissions along Melton Hill away from the junction, and disperse them very slowly due to low wind speeds and canyon like effect of the buildings.

NO_2 concentrations within the AQMA have reduced in 2014, 2015 and 2016 to below the annual mean Air Quality Objective. There have been no corresponding alterations in traffic flows or make-up and no additional schemes undertaken to explain this reduction.

In light of these findings, many of the options in the Action Plan are unlikely to have any significant impact on NO_2 levels. The Action Plan is therefore being updated by the Steering Group and a first draft has been produced. There is currently an issue within the Steering Group with the wording of part of one of the measures and we are trying to work through this with advice from Defra.

During this time work has progressed on one of the main measures in the draft updated Action Plan, which was a recommendation from the additional meteorological studies undertaken at the junction. The recommendation was to trial holding the traffic back from the current traffic light stop lines and out of the AQMA. This could potentially have the desired impact of NO_2 emission, and therefore concentration, reductions within the AQMA. The trial would need to be in place for a minimum of 3 months in order to assess any air quality impacts. A 1-week traffic trial was undertaken in Woodbridge (July 2017) to hold

traffic back from the traffic lights and out of the AQMA in order to allow Suffolk County Council to determine whether it was feasible to run for a 3-month period. Results are currently being compiled by Suffolk County Council for discussion by the Steering Group.

Stratford St Andrew AQMA

This AQMA was declared in 2014, further details can be seen at https://uk-air.defra.gov.uk/aqma/details?aqma_id=1036. The draft Action Plan received Defra approval and full public Consultation was undertaken during August / September 2017. The final Action Plan is currently being collated for publication. The plan consists of 2 short term, priority action measures and 6 longer term aspirational measures.

The main priority measure is for Suffolk County Council to move the 30/50mph change of speed limit sign further south out of the village of Stratford St. Andrew. This action has been agreed and work has progressed to put the Action Plan measure in place. The Suffolk County Council Speed Limit Panel agreed the change and a Public Consultation on the Traffic Regulation Order (TRO) to move the signs has been undertaken with no objections received. Work is now underway by Suffolk County Council to enable movement of the speed limits, (the scheme design is now going through the ordering process), and it is hoped that this will happen before the end of 2017.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)		Action Plan (inc. date of publication)
						At Declaration	Now	
The Suffolk Coastal District Council Air Quality Management Area Order No. 1, 2006	03.04.06	NO_2 Annual Mean	Woodbridge	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^3	37 µg/m^3	Suffolk Coastal District Council Air Quality Action Plan for the Woodbridge Junction, February 2011. http://aqma.defra.gov.uk/action-plans/SCDC%20AQAP%202011.pdf
The Suffolk Coastal District Council Air Quality Management Area Order No. 3, 2014	18.06.14	NO_2 Annual Mean	Stratford St. Andrew	The four properties situated within 1-5 Long Row, main Road (A12), in Stratford St. Andrew	NO	42 µg/m^3	42 µg/m^3	Draft Action Plan approved by Defra, underwent full Public Consultation in August / September 2017 and currently being finalised ready for publishing.

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

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

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

- On the basis of the evidence provided by the local authority the conclusions reached are acceptable for all sources and pollutants.
- The next step for SCDC is to submit an Annual Status Report in 2017 and to publish a new Action Plan for Woodbridge AQMA as soon as possible.
  Progress on the Updated Action Plan for Woodbridge has been discussed earlier in this section.
- In future reports, the executive summary should be reduced to a few pages, moving information into the main report where appropriate.
  The Executive Summary has been shortened this year as recommended.
- In accordance with paragraph 7.78 of TG16, the Council are encouraged to undertake distance correction calculations for all of their monitoring results that do not represent relevant exposure. This paragraph states that 'wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure should be estimated, using the NO_2 fall-off with distance calculator available on the LAQM support website'.
  Distance correction calculations have been undertaken for all applicable results in the last 5 years and also for all applicable historic data represented in trend graphs.

Suffolk Coastal District Council has taken forward a number of direct measures during the current reporting year of 2017 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on measures related to the declared AQMA at Woodbridge can be found in the respective Action Plan - Suffolk Coastal District Council Air Quality Action Plan for the Woodbridge Junction, February 2011. This plan is currently in the process of being updated.

Key completed measures are:

- Measure 1 and Measure 13 – SCDC Travel Plan - SCDC moved office to Melton in November 2016 and a Travel Plan is in place for the new site. The plan aims to reduce single occupancy car trips and business mileage, increase use of alternative modes of travel, and reduce trips through the Woodbridge AQMA. Monitoring indicates Travel Plan success in the above categories. Tele and video conferencing facilities are installed at East Suffolk House. Flexible working and working from home is encouraged. Discount on public transport (rail and bus) for Staff. Pool bikes recently available for staff use. Monitoring will continue.
- Measure 15 – provision of 2 electric vehicle charge points at East Suffolk House and an electric pool vehicle for SCDC use. Success to date with 2,560 miles travelled. Charge points are being used by vehicles other than the pool car.

- Measure 17 – HGV signage at Woodbridge junction – road signs have been erected at Woodbridge Junction on B1438, near Sun Lane as you approach from Melton and on Lime Kiln Quay Road as you approach from Martlesham. Signs say no right turn from Melton Hill and no straight on from Lime Kiln Quay Road for lorries/HGVs into St. John's Street. Signs will ensure no lorries or HGVs will be queuing to turn right from the direction of Melton Hill close to the AQMA. In addition to the direct impact, any queue reduction allows the left-hand filter to function better at this location thus reducing congestion.
- Measure 21 - new East Suffolk Environmental Policy adopted February 2017 and runs until 2023. Includes objectives to support growth of active travel methods, allow cycling on Felixstowe promenade and for sustainable procurement by the District Council in order to reduce environmental impact of contractors.
- Measure 29 - Inclusion of air quality where relevant in the Site Allocations and Area Specific Policies and Felixstowe Area Action Plan documents – adopted January 2017.
- Measure 35 – SCC adoption of national award scheme to help schools with Travel Plans.

There has been progress made with other measures, as follows;

- Measures 3 and 4 - Woodbridge Town Council is looking to change the Traffic Regulation Order (TRO) for the Thoroughfare with stricter enforcement once parking decriminalisation comes into force in 2019. Consultation on 3 options for new TRO underway in September 2017.
- Measure 6 - SCC has produced a new Cycle Map for Woodbridge to help promote cycling in the local area.
- Measure 9 – Port of Felixstowe have converted a further 10 Rubber-Tyred Gantry cranes to electric since October 2016 bringing the total now to 38.
- Measure 10 - The Port of Felixstowe intend to replace a further 28 Internal Movement Vehicles by the end of 2017.
- Measure 14 – Signal technology (MOVA) installed at 2 junctions on the A1214, one in Kesgrave and one in Rushmere St. Andrew.
- Measure 27 - all relevant planning applications have been assessed for air quality by the Environmental Protection Team and comments provided to the Planning Department where needed. The District Council has been involved in a number of larger applications such as Sizewell C Power Station and Adastral Park in Martlesham.
- Measure 37 - Woodbridge Town Council has obtained agreement for 20mph zones in Woodbridge including a route through the AQMA. Investigations into how this could be installed and enforced underway.

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

- Measure 12 - Movement of 30/50mph change of speed limit signs at Stratford St Andrew – should stop vehicles accelerating within the AQMA and therefore reduce NO_2 concentrations. Public Consultation undertaken by Suffolk County Council with no objections received, scheme design going through the ordering process.
- Measure 16 - Port of Felixstowe will be purchasing 2 electric vehicles for staff to trial.
- Measure 31 – Production of Travel Plan Guidance for Suffolk.

- Measure 33 - Update of the air quality pages on the Council's website – this will make access to air quality information easier and help to raise the profile. Intern appointed and completed first draft, final changes hoped to be completed later in 2017.
- Measure 36 – Trial to allow cycling on the promenade at Felixstowe will be completed and determination made on making this a permanent change.

Suffolk Coastal District Councils priorities for the coming year are:

- Continue monitoring for NO_2 across the district as this is imperative for informing our air quality work and priorities.
- Finalise the Action Plan for the AQMA at Stratford St Andrew.
- Work with Suffolk County Council to move the speed limit in Stratford St. Andrew as soon as possible, it is hoped by the end of 2017. Once this has been undertaken air quality monitoring results and speed measurements will advise the extent its success and whether other Action Plan measures need to be implemented.
- Finalise the draft update for the Woodbridge Action Plan for Woodbridge and put this out for Public Consultation.
- Assess the findings of the 1-week traffic trial in Woodbridge to determine whether it will be undertaken for a longer period. This is one of the main measures in the updated draft Action Plan.
- Work with Woodbridge Town Council on possible implementation of 20mph zones and participate in the search for funding to enable this. This scheme will act to deter 'through traffic' from using the AQMA thereby reducing emissions and is therefore an important scheme for Woodbridge if funding can be obtained.
- Continue to provide input for all relevant planning applications, and input into the Local Plan review with regard to air quality. This is essential in order to ensure future emission reductions within the district, and to reduce the likelihood of additional AQMAS being declared.
- Raise the profile of electric vehicles and aid/promote installation of electric vehicle charge points within the district. Promotion and uptake of electric vehicles is vital for future road transport emission reductions to be realised and is one of the main directions in which central government are moving. Within Suffolk the electric vehicle charging network needs improvement and growth in order to facilitate the uptake of electric vehicles by local businesses and householders.
- Improve the air quality pages on the Council's website to assist with improving public awareness of air quality within Suffolk Coastal and the part that everyone needs to, and can, play in reducing emissions particularly in relation to road transport.
- Continue to raise the profile of air quality within our organisation, with other organisations, and with the Public. Raising the profile of air quality will help to get it into the correct arenas in order for progress to occur.

The principal challenges and barriers to implementation that Suffolk Coastal District Council anticipates facing are:

- Suffolk County Council competing priorities have often made it difficult in the past to obtain movement forward and funding for some measures. As both of our current AQMAs are transport related this could be a continuing area of challenge.
- Installation of electric vehicle charging infrastructure. Suffolk's electric vehicle network needs expanding but there are difficulties in finding potential sites and funding for installations, together with lack of internal resources to take projects forward.
- Raising awareness of air quality is bringing with it increasing demands on resources at the District Council in order to be able to answer enquiries and provide representation in the different arenas.
- Sign up for bus retro-fitting opportunities with local bus companies – we are trying to liaise with the 3 largest providers in Woodbridge but interest is low. Barriers include the need to ensure each bus is operated in an AQMA for a set number of years after the retro-fit, funding that the bus company needs to find, together with the manpower and knowledge needed in order to make a bid for funding and then take the project forward if successful.
- Improvement of cycling and walking within the district – due to the rural nature of most of the district this is a difficult task in many areas.
- Should the 1-week trial in Woodbridge prove successful and be taken forward to a 3-month trial the challenge will be to determine whether there is likely to be detrimental impacts on any additional properties in respect of air quality, noise and vibration as queueing vehicles will be displaced in the vicinity of other residential properties.

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

- Production and consultation on the updated Action Plan for Woodbridge – a draft plan is currently with the Steering Group for approval. There are some differences of opinion currently regarding some of the wording which we are working to resolve with advice from Defra.
- Measure 2 - investigations into impacts of local schools on the Woodbridge junction to determine any particular schools that require our focus. This is proving difficult as the postcode plot information is not available from Suffolk County Council in an easy format due to Data Protection issues.
- Measures 3 and 4 – Woodbridge TC to change the Traffic Regulation Order (TRO) for the Thoroughfare. Progress has been slower than expected due to the number of stakeholders involved, together with the fact that due to parking decriminalisation in 2019 no new TROs will be processed by Suffolk County Council until then. It is intended that the TRO will be consulted on and ready for approval as soon as it is able to be given in 2019.
- Measure 33 – redesign the Suffolk Coastal website. Progress slow due to the need to combine the air quality pages of both Suffolk Coastal and Waveney together and a lack of manpower hours available. The new format has been drafted and is nearly ready for completion.
- Measure 37 – 20mph zone implementation in Woodbridge. The 20mph zone must be self-enforcing and an initial study is required to outline the physical measures needed

for this to happen before costings can be drawn up for the scheme. Funding for the initial study has proven difficult to obtain.

Suffolk Coastal District Council anticipates that the measures stated above, in Table 2.2, and in the draft Action Plan for Stratford St. Andrew will achieve compliance in both the Woodbridge and Stratford St. Andrew AQMAs.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
Woodbridge Action Plan Measures to be taken forward in Updated Plan											
1 (Woodbridge 15c)	Travel Plan for the District Council Offices	Promoting Travel Alternatives	Workplace Travel Planning	Lead and funded SCDC Environmental Health	n/a	2009	Travel Plan adopted. Key actions completed.	2% for 15a, b & c combined	Original Travel Plan adopted 2009, Key actions complete 2010. Offices now moved to Melton. 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. 2016 new Travel Plan adopted for new Council Offices. Additional Travel Plan details in General Measures section - measures 17, 20, 21 and 22.	Completed. Reporting on success of Travel Plan will be taken into new Updated Action Plan.	The Council offices have moved to Melton. Need to determine the Council's new impact on the AQMA together with impacts from the new use of the original site.
2 (Woodbridge 15b)	School Travel Plans	Promoting Travel Alternatives	School Travel Plans	Suffolk County Council originally. Now lead and funded SCDC Environmental Health	n/a	2010	Contact schools to remind them about Travel Plan. Contact Woodbridge School re adopting a	2% for 15a, b & c combined	All schools in Woodbridge historically adopted a Travel Plan. Exception is Woodbridge School who have been encouraged to	Re-word measure in updated Action Plan. Investigate whether any schools have a significant	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

							Travel Plan		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 the County Council to date so will need to re-assess a way forward.	impact on the AQMA junction and work with those to look at reducing car usage.	who potentially have significant pupil vehicular traffic through the AQMA for further work. This is proving difficult to determine for Data Protection reasons.
3 (Woodbridge 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	Suffolk County Council, Woodbridge Town Council. Funding unknown possible bid for Community Infrastructure Levy (CIL) money in future	2013 - 2014	2014 - 2015 originally, now unknown but possibly 2018 for Town Council to enforce Thoroughfare restrictions	Reduction in peak queue lengths on Melton Hill	Recent air quality modelling shows max reduction of 0.1µg/m3 in AQMA.	Feasibility study undertaken. Negligible impact on AQMA NO2 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	Originally 2014 - 2015 Now possibly 2019 for Town Council to enforce restrictions	Feasibility study shows reduction of only 0.1µg/m3 in AQMA = negligible. Shows increase in conc. on Lime Kiln Quay Road of 0.5µg/m3. Town Council wish to alter and enforce the TRO but unable to do so until decriminalisation act in force in 2019. See Measure 4 below for further detail.

									Action Plan as 'aspirational' for Woodbridge Town Council but re-word. See also measure 4 below.		
4 (Woodbridge 21)	Remove the ability of traffic to go straight on from Melton Hill to Thoroughfare	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	Suffolk County Council, Woodbridge Town Council. Joint funding.	2013 - 2014	2014 - 2015 originally, now 2018 to enforce Thoroughfare restrictions	Reduction in peak queue lengths on Melton Hill	Recent air quality modelling shows max reduction of 0.1µg/m3 in AQMA	Feasibility study undertaken. Negligible impact on AQMA so no further work on this measure by SCDC. Woodbridge Town Council wish to change the TRO for the Thoroughfare with stricter enforcement – this would potentially reduce number of vehicles travelling straight over from Melton Hill. These vehicles can hold up the left hand filter lane at the lights thereby increasing congestion in the AQMA locality. Consultation on 3 options for new TRO underway in September 2017. TRO will be consulted on and ready to go for approval in 2019. Measure to remain in updated Action Plan as 'aspirational' for Woodbridge Town Council combined with the above measure	2014-15 originally. Now 2019 for new TRO and additional enforcement	Feasibility study shows reduction of only 0.1µg/m3 in AQMA = negligible. Shows increase in conc. on Lime Kiln Quay Road of 0.5µg/m3. Town Council wish to alter the TRO but unable to do so until decriminalisation act in force in 2019 as no new TROs can be processed before then. Enforcement of new TRO will then be in Town Council's remit via the District Council after decriminalisation so easier to control enforcement.
5 (Woodbridge 17)	Integration with Planning System	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	SCDC Environmental Health and Planning Local Authority Funded	2010/2011	2011	Produce supplementary Planning Document for Suffolk and consult.	1%	Supplementary Planning Document produced. Not adopted formally but historically used as guidance for planning	2012/2013 Completed SPD	Ensure air quality reports are produced for planning applications when they require one. Unsure how we can measure

									applications. Now superseded by EPUK & IAQM guidance on Planning & Development Control. No planning applications received related to this AQMA where S106 funding would be appropriate. Woodbridge Steering Group joined by members of Planning. Environmental Health and Development Control are working together to ensure Air Quality is considered during both the planning application process, and during policy development. Updated Action Plan will retain a measure for assessment of planning applications		emission reductions due to this unless application is closely associated with AQMA. Assess as and when relevant application(s) received. Air quality is on the Community Infrastructure Levy (CIL) "shopping list" for any relevant projects to be bid for.
6 (Woodbridge 16)	Promotion of cycling and walking in Woodbridge	Promoting Travel Alternatives	Promotion of cycling	Suffolk County Council - funding unknown	2010	On-going	None currently	1%	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	On-going	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.

									in updated Action Plan as 'aspirational'		
7 (Woodbridge 18)	Raise air quality awareness	Public Information	Via the Internet	SCDC Environmental Health Local Authority Funded	n/a	on-going	Promotion of air quality and reports on website	n/a	Articles published in local magazines and papers. SCDC website air quality pages due to be redesigned and updated in 2017 (see Measure 28). Updated Action Plan to retain this measure	On-going	No emission reduction targets possible for this measure although it can only have a positive effect.
8 (Woodbridge 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	Suffolk County Council. Funding not secured but likely LTP.	2011-2012	Unknown	Reduction in peak queue lengths	5%	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'	Not progressed to date	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.
General measures within the District											
9	Evaluate and implement efficient power technologies (e.g. hybrid-electric) for cargo handling equipment	Promoting low emission plant	Other measure for low emissions fuels for stationary and mobile sources	Lead and funded Port of Felixstowe	On-going	On-going	Number of RTG Cranes using improved efficiency power source	n/a	The Port has purchased 22 ECO-RTGs – 40% reduction in fuel use and therefore emissions. 2 more are being purchased for the Landguard terminal later this year (2017). The Port has converted two sections of the	0n-going. Plan to convert more RTGs over the coming years up to 2020	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. Once all 54 RTGs are switched

	(rubber tyre gantry (RTG) cranes) in the Port of Felixstowe.								Trinity Terminal to accommodate four fully electric RTGs. In 2014 the first 4 diesel/electric RTGs were converted to electric (ERTG) - trial successful. Infrastructure now in place and the programme of electric RTG conversions has continued with 10 new conversions in 2016/17, totalling 38 in place as of June 2017. The Port plans to increase the numbers in use up to 54 (out of a total of 85) by 2020.		over from diesel to electric a 30% reduction in diesel use at the Port is targeted.
10	Adopt NOX abatement technologies on Internal Movement Vehicales (IMVs) in the Port.	Promoting Low Emission Transport	Company Vehicle Procurement – Prioritising uptake of low emission vehicles	Lead and funded Port of Felixstowe	2010	On-going replacement plan	Emissions monitoring of NO2 and SO2 at the Port	n/a	83 older IMVs were replaced between 2011 and end of 2016. The Port plan to replace a further 28 in 2017. Totalling 111 of the 260 units in use on the Port. All new IMVs utilise Adblue as part of exhaust gas recirculation technology and currently comply to Euro IIIa emissions standards. The most recent IMVs purchased (27 in 2016) are fitted with start/stop technology. IMVs are replaced on a 15 year cycle. Emissions monitoring of NO2 within the Port boundary shows reductions at all sites in 2016. Concentrations of	On-going	Replacement IMVs comply with Euro IIIa emission standards instead of Euro I. The recently purchased 27 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

									SO2 have reduced dramatically since 2009, sites show either small continued reductions or plateau between 2015 and 2016.		
11	Increased use of rail transport for movement of goods at the Port of Felxlistowe	Freight and Delivery Management	Other	Lead and funded Port of Felixstowe	2017	2019	Number of daily freight services. Percentage rail modal share	unknown	There are currently 33 daily freight services from the Port - the maximum that the network can handle. No further increase in anticipated until Branch Line capacity works are undertaken in 2019. Port continues to maximise length of each rail service. Rail modal share was 28% in 2016.	2019/2020	No further increase in number of services anticipated until Branch Line capacity works are undertaken in 2019.
12	Move the location of the southern 30mph speed limit sign at Long Row, Main Road, Stratford St. Andrew (AQMA) southwards	Traffic Management	Reduction of speed limits	Lead SCC - LTP funded	2016	2017	Reduction in NO2 concentrations in Stratford St. Andrew AQMA. Reduction in vehicle speeds.	Reduction in concentration by up to 2 µg/m3	Speed limit panel agreed Traffic Regulation Order (TRO) to move sign. Suffolk County Council (SCC) has undertaken Public Consultation on moving the signs. No Objections received. Scheme design now going through the ordering process at SCC.	End of 2017	Capital funding has been agreed to amend the TRO at approx. £20,000 (£6,000 for design and £14,000 for construction)
13	Travel Plan for new Council Offices at Riduna Park	Promoting Travel Alternatives	Travel plans	SCDC Environmental Health Local Authority Funded	2016	On-going	Reduction in % pf employees driving to work alone. Reduction in staff business mileage	Unknown	Final Travel Plan in place end 2016. Car sharing scheme promoted with 5 car sharing dating days before the Council moved site. Tele and video conferencing facilities installed.	2016 Completed	Aim of the plan is to reduce commuting by single occupancy car journey by 10% by 2017, reduce car use for business mileage, and reduce impact from site on Woodbridge AQMA

									Flexible working and working from home encouraged. Discount on public transport (rail and bus) for Staff. Pool bikes available. Preliminary results from 2017 Travel Survey shows Driving to work alone has reduced from 92% in 2016 to 85% in 2017. Business mileage reduced from 456,898 in 2016/16 to 407, 513 miles in 2016/17. Travel Survey indicates number of staff commuting to work via Woodbridge AQMA has now reduced by 38. This is a good indication and actual figure will be higher as not all staff completed the survey.		and within Melton. Travel Driving and Subsistence Policy includes business mileage rate for cycling and also passengers in vehicles. Travel decision making with preference for no travel or video-conferencing included.
14	MOVA traffic signal technology installed at junctions within the district	Traffic Management	UTC, Congestion management traffic reduction	SCC lead and funded	n/a	on-going	MOVA installed	n/a	MOVA system installed to maximise the flow of trafic through junctions. Installed in the last few years at Melton crossraods, Beach Station/Langer Road Felixstowe, Garrison Rd/High Rd West Felixstowe and Church St/High St Saxmundham. Installastions in 2016/17 at Bell Lane/Main Rd Kesgarve and Beech Rd/Woodbridge Rd Rushmere St Andrew.	On-going	No new installations planned for 2017/18

15	Provision of Electric Vehicle charge points and Electric pool vehicle at Riduna Park (new Council Offices)	Promoting Low Emission Transport	Other	Lead and funded SCDC	2016	2017	Number of miles undertaken by electric vehicles	Unknown	Charging infrastructure in place. Electric pool car has beeen in use from January 2017. 2,560 miles travelled by electric pool car up to 1st June 2017.	Completed	Charging infrastructure provided for 2 vehicles and 1 electric pool car provided.
16	Electric vehicle trial at the Port of Felixstowe	Promoting Low Emission Transport	Company Vehicle Procurement -Prioritising uptake of low emission vehicles	Lead and funded Port of Felixstowe	2017	2017	Number of miles undertaken by electric vehicles	n/a	The Port is about to embark on an electric vehicle trial procuring 2 electric vehicles to see how they fit in with the Port operations	2017/18	The trial will inform the Port whether electric vehilce use is a way forward for them.
17	HGV signage at Woodbridge junction	Traffic Management	Other	Lead and funded Suffolk County Council	2017	2017	Reduction in HGVs using St. John's Street	unknown	New signs to be erected at Woodbridge Junction at Sun Lane as you come from Melton - no right turn for lorries/HGVs (left only). Same from direction of Lime Kiln – will say no straight on. This will help air quality if fewer people queuing to turn right near to AQMA from direction of Melton Hill. Signs in place 2017.	Completed	Reduction in vehicles queuing to turn right will free up left hand filter lane more often and reduce time that vehicles queue in AQMA.
18	Environmental Management System (EMS) in place at the Port of Felixstowe. Accredited to ISO	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Lead and funded Port of Felixstowe	On-going	On-going	No direct indicator. Continued certification to ISO 14001	n/a	EMS Implemented and certified to Port Environmental Review System in 2006. EMS certified to ISO14001:2008 in 2011. Port are currently in the middle of on-going transition to the latest version - ISO14001:2015.	Completed	Once all 54 RTGs are switched over from diesel to electric this will see a 30% reduction in diesel use at the Port.

	14001. Incudes employee and tenant education in best practice covering emissions reduction								Delivered training on EMS and individual responsibilities to approx. 200 employees in 2011/12 and all new port staff undertake a one day health, safety and environment day, of which one hour is dedicated to environmental training and induction.		
19	Energy Management System (EnMS) in place at The Port of Felixstowe. Certified to ISO 50001	Policy Guidance and Development Control	Other policy	Lead and funded Port of Felixstowe	On-going	On-going	No direct indicator. Continued certification to ISO 5001	n/a	Energy Management system implemented (EnMS) successfully in 2013 certified to ISO 5001. The EnMS is regularly reviewed and forms the backbone of the Environmental Management System. In 2017, the port's 5 year energy plan will be reviewed for the next 5 year period. The port passed its last 3 year energy accreditation period in September 2016. 8 Solar PV panel installations on roof surfaces at the Port help to mitigate additional energy needs from electrified RTGs. 473,581 kWh generated 2016.	Completed	Port's five year carbon reduction plan is an annual reduction of approximately 4000 tonnes CO2. Plan reviewed annually and now part of EnMS. Plan will be evaluated and re-drawn for a further 5 year period in 2019.
20	Home working policy	Promoting Travel Alternatives	Encourage/ Facilitate home - working	SCDC and WDC Local Authority Funded	-	On-going	Home working policy produced	Unknown	Policy in place. Technology in place to allow more people to work from home. Home working actively encouraged.	Completed	Policy in place and encouraged.

21	Reducing the emissions of the Councils during service delivery via the Environmental Policy	Policy Guidance and Development Control	Sustainable Procurement guidance	SCDC & WDC Local Authority Funded	2016	2017	New document to be drafted with the additional focus placed on reducing NO2 and PM2.5 emissions	Unknown	Input from air quality officer and initial meeting with the Council's Sustainability Officer. East Suffolk Environmental Policy adopted February 2017 and runs until 2023. Includes Objectives to support growth of active travel methods, allow cycling on Felixstowe promenade (see Measure 32 below) and for sustainable procurement by the District Council in order to reduce environmental impact of contractors. All refuse collection vehicles (supplied by Norse) are Euro 5, Euro 5 EEV or Euro 6	Completed	To ensure that WDC and SCDC show community leadership as well as taking positive steps to reduce emissions
22	Suffolk Car share	Alternatives to private vehicle use	Car and lift sharing schemes	Lead and funded Suffolk County Council, SCDC promoting	-	Completed	Annual increase in users of the site	Unknown	We have been promoting this site as part of the Woodbridge Action Plan since 2010. No. site users has increased from 1,599 in 2010 to 2,643 In May 2017. Increase between Nov 2016 and May 2017 is 2,556 to 2,643 = 87 new users. SCC Travel Plan Advisors hosted in Council Offices in June 2017 to promote Suffolk Car Share.	On-going	www.suffolkcarshare.com. Free web based contact data base.

23	Suffolk Walking Strategy	Promoting Travel Alternatives	Promotion of walking	Lead and funded Suffolk County Council	-	On-going	Reverse the trend of walking less. 10% fall in walking between 2003 and 2012 in Suffolk. Increase in number of people walking and cycling - Department of Trade & Indsutry Local Area Walking and Cycling Statistics	Unknown	Department for Transport statistics show that % of the population in the Suffolk Coastal District walking at least once a week for a minimum duration of 10 minutes increased from 82.5% in 2012/13 to 84.3% in 2014/15 - 3.7% above the national average and 3.5% above the average for Suffolk. Public Health England has also launched a new physical activity campaign to encourage people to walk briskly for 10 minutes with the Active 10 app which will help to increase walking.	2020	
24	Suffolk Cycling Strategy	Promoting Travel Alternatives	Promotion of cycling	Lead and funded Suffolk County Council	-	On-going	Increase in number of people walking and cycling - Department of Trade & Indsutry Local Area Walking and Cycling Statistics	Unknown	Cycle towns review complete and the 2015 a year of cycling programme launched promoting events in suffolk	n/a	Subject to periodic review
25	Promotion of travel alternatives for staff at SCDC	Promoting Travel Alternatives	Promotion of cycling and walking	Lead and funded SCDC	N/A	N/A	Council promotes cycling and walking as a positive alternative form of travel for its staff	Unknown	Staff have been encouraged to use cycles for a number of years. Cycle to work scheme started in 2013 - 28 bicycles purchased. Business mileage rate for cycling in place. Emergency Ride Home scheme in place. Travel Survey	On-going	New Riduna Park building has following facilities: Covered and secure cycle parking/racks for 40 bikes, shower/changing/ drying facilities and lockers. 4 pool bikes provided for use.

									in 2017 indicates increased number of staff who cycle to work.		
26	Fleet emissions improvements for freight haulage companies based in Felixstowe	Vehicle Fleet Efficiency	Other	Lead and funded SCDC Environmental Health	2017	2018	Number of haulage firms engaged in the process	Unknown	The haulage firm Maritime has a head office is in Felixstowe. They have 1,000 HGVs operating across the UK from 23 depots and of these 90% are Euro V and VI. They have a program of vehicle replacement every 3 years and old engines are sold on. We will contact other haulage companies based in and around the Port of Felixstowe to ascertain fleet make up and any emission reduction programs they currently have. We will then investigate promotion of emission improvements that could be made such as driver training, fleet replacement.	2018	Until we begin contacting haulage companies we cannot know what is currently in place and what level of engagement there will be.
27	Assessment of planning applications for impact on air quality	Policy Guidance and Development Control	Air Quality Planning	SCDC Environmental Health and Planning Local Authority Funded	Ongoing	Ongoing	Number of Planning applications considered.	Unknown	Officers in Environmental Protection work with Planning to ensure that each relevant application is appropriately assessed for air quality.	On-going	The assessment process takes account of national guidance (including EPUK) and local procedures
28	Construction Dust mitigation condition recommen	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	SCDC Environmental Health and Planning Local Authority	2016	2016	Number of dust complaints received associated	Unknown	It is recommended to the planning Department for all relevant planning applications that a	On-going	Aim to increase awareness of construction dust issues for smaller developments. Larger

	ded for relevant Planning Consents			Funded			with development sites		Construction Dust Condition is included in the consent. 5 complaints were received regarding construction sites between 1/6/16 and 28/6/17 - each site has been / is being dealt with under statutory nuisance provisions.		developments will have more awareness of this issue – Conditions will help to focus their mitigation.
29	Air quality included in the SCDC Local Plan - Site Specific Allocations and Felixstowe Area Action Plan	Policy Guidance and Development	Air Quality Planning and Policy Guidance	SCDC Environmental Health and Planning Local Authority Funded	2016	2017	Air quality considered in relevant planning applications	Unknown	Consulted on Site Specific Allocation document and recommendations suggested. Public Hearing completed. Proposed Main Modification undertaken. Site Allocations and Area Specific Policies document and Felixstowe Area Action Plan adopted January 2017. Issues and Options Consultation for the Local Plan Review runs 18th August to 30th October 2017. Air quality will be embedded in the Local Plan Review.	Completed Local Plan Review started first draft due 2018 to be adopted 2019	To ensure that developments are appropriate and the air quality impacts are adequately assessed.
30	Promotion of travel alternatives in the Local Plan	Promoting Travel alternatives	Promotion of walking and cycling	SCDC Environmental Health and Planning Local Authority Funded	n/a	n/a	Inclusion in the Local Plan	Unknown	Local Plan adopted in 2013. Local Plan review has begun with first draft due 2018 to be adopted 2019. Sustainable travel alternatives will be included in the Local Plan review.	Completed. Local Plan Review started first draft due 2018 to be adopted 2019	Includes Strategic Policy SP11 – accessibility to promote the use of travel alternatives and also Development Management Policy DM20 on Travel Plans for developments.

31	Production of Travel Plan Guidance for Suffolk	Policy Guidance and Development Control	Other policy	SCC lead and funded	2017	2018	Travel Plan guidance produced	Unknown	Draft Travel Plan guidance produced for consultation, Guidance to encourage greater level of Travel Plan consistency across Suffolk for Developers and Local Authorities.	2018	Local Authorities will need to sign up to guidance once produced.
32	Electric Vehicle charge point provision request placed on relevant Planning Consents	Promoting Low Emission Transport	Other	SCDC Environmental Health and Planning Local Authority funded	2016	2016/17	Number of applicants installing electric vehicle charging points.	Unknown	Electric Vehicle charge point provision request placed on all new residential planning applications.	On-going	Aim is to encourage developers to consider mitigation for emission increases.
33	Redesign and update the air quality section on the Council Website	Public information	Via the internet	SCDC and WDC joint lead. Local Authority Funded	2016	2017	Updated Web page	Unknown	Working party set up to look at website. Some minor alterations made. First draft of new website produced. Final alterations being made ready for launch towards the end of 2017.	2017	Air Quality intern appointed to run this project from June 2017
34	Greener travel information	Public Information	Via the internet	Lead and funded Suffolk County Council	~	Complete	Number of hits on website	Unknown	SCC website updated - greener travel; https://www.suffolk.gov.uk/roads-and-transport/public-transport/local-links/. Travel Planning; https://www.suffolk.gov.uk/planning-waste-and-environment/planning-and-development-advice/travel-plans/. In 2016 - 3,658 hits on Local Links website and 784 on Travel Planning site (both include internal	On-going	Public information on greener travel and advice on Travel Planning for workplaces, schools and new or expanding developments available on Suffolk County Council website.

									and external hits)		
35	SCC adoption of national award scheme for School Travel Plans	Promoting Travel alternatives	School Travel Plans	SCC lead and funded	2017	2017	Adoption of scheme	Unknown	Modeshift STARS scheme adopted by SCC. 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.	Completed.	No schools in Suffolk Coastal are registered on the website as yet
36	Trial to allow cycling on the promenade at Felixstowe	Transport Planning and Infrastructure	Cycle network	SCDC Senior Management Team Projects Officer and Environmental Health Local Authority Funded	2016	2016	Trial implemented and cycling allowed to ccontinue on promenade after 1 year trial	Unknown	Trial in place and 1 year will completed during October 2017. Recommendations from the trial to go to full Cabinte in November 2017	2017	Competing public uses of promenade - safety of pedestrians.
37	20 mph speed limit in Woodbridge	Traffic Management	Reduction of speed limits	Woodbridge Town Council and SCDC Funding unknown at this stage	2016	2017/18	Reduction in measured average speed along routes	Marginal benefit in terms of emission reductions due to through traffic reduction	Proposal taken by Woodbridge Town Council to the SCC Speed Limit Panel. Panel has agreed the proposals to progress 20mph zones/limits on the central B1438 and historic core roads in Woodbridge. This will include the AQMA. Proposal confirming physical measures required to make the 20mph zone on B1438 self-enforcing required. Funding being sought to take this forward. Once a scheme is in known with costings	Unknown at this point	Costings of physical works unknown. Potential success of any funding bid unknown.

									SCDC and Woodbridge TC can look to make a joint bid for funing - possibly from CIL money.		
Following measures are all to be removed from the Updated Woodbridge Action Plan going forward											
(Wood bridge 1)	Install queue detectors (MOVA) on traffic signals to reduce queuing at the junction	Traffic Management	UTC, Congestion management, traffic reduction	Suffolk County Council	2009	2011	Reduction in peak queue lengths	10%	Queue length survey 2009. MOVA functional June 2011. Post MOVA queue length survey 2013. Monitoring results 2010 – 2014 show NO2 concentrations have fluctuated at the junction so MOVA has not caused a sustained reduction. No significant changes in traffic flow or % HDV reductions. Measure to be removed from updated Action Plan	Completed. To be removed from Action Plan and as such will not be reported in future documents	Post MOVA queue survey shows average queue lengths have increased on all arms of the junction but that the extremes of queues have been reduced
(Wood bridge 4)	Remove ability to turn right from direction of Melton Hill	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	Suffolk County Council	2013 - 2014	2014 - 2015	Reduction in peak queue lengths on Melton Hill	Recent air quality modelling shows max reduction of 0.1µg/m3 in AQMA.	Recent feasibility study concluded negligible impact on AQMA NO2 concentrations. Measure to be removed from updated Action Plan.	To be removed from Action Plan and as such will not be reported in future documents	Feasibility study shows reduction of only 0.1µg/m3 in AQMA = negligible. Shows increase in conc. on Lime Kiln Quay Road of 0.5µg/m3

(Woodbridge 5)	Relocate the on street parking currently in Melton Hill to opposite side of road	Traffic Management	Other	Suffolk County Council	2012 - 2103	2013	Reduction in peak queue lengths of traffic heading away from junction along Melton Hill	Originally estimated at 5%. Recent air quality modelling shows negative impact on AQMA	Recent feasibility study showed negative impact on AQMA NO2 conc. Measure to be removed from an updated Action Plan	To be removed from Action Plan and as such will not be reported in future documents	Feasibility study shows an increase in NO2 concentrations within the AQMA of 0.5µg/m3.
(Woodbridge 6)	Remove the on street parking currently in Melton Hill	Traffic Management	Other	Suffolk County Council	2012 - 2103	2014	Reduction in peak queue lengths of traffic heading away from junction along Melton Hill	Originally estimated at 5%. Recent air quality modelling shows max reduction of 0.1µg/m3 in AQMA	Recent feasibility study showed negative impact on AQMA NO2 conc. Measure to be removed from an updated Action Plan	To be removed from Action Plan and as such will not be reported in future documents	Feasibility study shows reduction of only 0.1µg/m3 in AQMA = negligible.
(Woodbridge 7)	Investigate Satellite Navigation (SatNav) system routes around town	Freight and Delivery Management	Other	SCDC	2010	2010	SatNav providers contacted. Peak queue lengths reduced.	1%	Most popular SatNav systems tested, Discussed with SCC who deal with SatNav providers. There are no real options or incentives for providers to alter their systems. Measure to be removed from updated Action Plan as completed.	Completed. To be removed from Action Plan and as such will not be reported in future documents	System testing showed some routes are via the junction but majority sent via the bypass. SCC has tried to liaise with SatNav companies in general but we do not have the buy-in locally to influence them
(Woodbridge 8)	Bus operators to use cleanest fleet in Woodbridge – contact them to request.	Promoting Low Emission Transport	Public Vehicle Procurement -Prioritising uptake of low emission vehicles	SCDC	2010	2010	Number of Euro IV buses operating in Woodbridge.	2%	List of bus operators compiled. 3 largest providers contacted. All buses maintained regularly. Cleanest fleet are used in main towns of Ipswich and Norwich. None willing to alter fleet as only very small service operating in Woodbridge. Measure to be removed from updated Action Plan and replace with investigating Clean	To be removed from Action Plan and as such will not be reported in future documents	Investigating a Clean Bus Technology Grant bid - whether larger providers would be interested in being part of a bid.

									Bus Technology Grant bid.		
(Wood bridge 9)	Demand Responsive Transport	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	Suffolk County Council	2009	2009	Increased bus patronage	2%	Scheme in place for the peninsula area (Hollesley, Bawdsey etc) as of 2009. Scheme doing well - will be retained until at least 2016. DRT has been revamped (June 2016) to help reduce vehicle emissions further. Measure to be removed from updated Action Plan as complete.	Completed. To be removed from Action Plan and as such will not be reported in future documents	DRT is to be revamped - minibuses likely to be at least euro IV rated. Specifying in the contract that a smaller vehicle should be used if the passenger numbers are lower. Where possible the passengers to be linked to an existing bus service to reduce mileage.
(Wood bridge 10)	Simplified Ticket Scheme	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	Suffolk County Council	2013	2014	None available	1%	Working group set up 2009. The Endeavour Card went live in October 2013 for 16-19 year olds.First buses rolling out 'M tickets'. Discussions for the future regarding contactless payments. Measure to be removed from updated Action Plan as complete.	Completed. To be removed from Action Plan and as such will not be reported in future documents	Business case submitted to roll out adult's smart card – has not been successful. On-line top up facility has not been successful. No real way to measure whether emission reduction target will be reached.
(Wood bridge 11)	Improve accessibility to bus timetable	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	Suffolk County Council	2009	2009	None	1%	Website launched. New leaflets delivered. New style of timetable developed – more accessible and 'stick' style timetables -easier to read. Real time information rolled out in 2014/15 available for some services on smart phone apps. Measure to be removed from	Completed. To be removed from Action Plan and as such will not be reported in future documents	No real way to measure whether emission reduction target has been reached.

									updated Action Plan as complete.		
(Woodbridge 12)	Turban Centre new bus station/ interchange	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	Suffolk County Council	2010/ 2011	2012	Opening of new bus shelter.	2%	Design not agreed in time for budget cuts. Funding withdrawn. Bus shelters upgraded December 2012. Measure to be removed from updated Action Plan.	Completed. To be removed from Action Plan and as such will not be reported in future documents	May be some positive influence on bus patronage due to new bus shelters. Not possible to predict what reduction in emissions this may give.
(Woodbridge 13)	Procurement of bus contracts to include fleet upgrade	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	Suffolk County Council	2009	2009	Quality assessment process In place. Buses to be Euro III standard	2%	Quality assessment process 2009. New Quality Scoring System Jan 2013. First buses - major refurbishment- can carry more people and new style should encourage people onto buses. Average fleet age for First buses reduced June 2016, replaced many older buses. All vehicles now fitted with 'Drive Green' system for driver behaviour. Measure to be removed from updated Action Plan as complete.	Completed. To be removed from Action Plan and as such will not be reported in future documents	New low emission vehicles added to SCC's fleet are compliant for the London Low Emission Zone and the London 2012 Olympics. However, impacts on AQMA likely to be very small.
(Woodbridge 14)	Car sharing scheme	Promoting Travel Alternatives	Workplace Travel Planning	SCDC	n/a	2010 and on-going	Increase in registered users of scheme.	2%	No. site users increased from 1,599 in 2010 to 2,556 in 2016. SCDC website updated. Articles published. Steering Group decision to remove from updated Action Plan	Completed. To be removed from Action Plan and as such will not be reported in future documents	Increased number of users can only have a positive effect.

(Woodbridge 15a)	Business Travel Plans	Promoting Travel Alternatives	Workplace Travel Planning	Suffolk County Council, SCDC	n/a	2010 - 2011	Businesses contacted. Number of Travel Plans adopted by businesses	2% for 15a, b & c combined	List of businesses in Woodbridge with > 20 employees sent to SCC . SCC funding has now been cut - no longer be possible. Unlikely to be progressed due to lack of funding. Commercial Travel Plans to be requested through the Planning System where possible. Remove from Updated Action Plan	To be removed from Action Plan and as such will not be reported in future documents	Not really any large businesses within Woodbridge except SCDC. Potential to adopt Travel Plans much smaller and any impact from them within Woodbridge also minimal.
(Woodbridge 19)	Monitor air quality	Public Information	Via the Internet	SCDC	n/a	on-going	Continue monitoring	n/a	Monitoring on-going. This is not really an Action Plan measure as such. Remove from updated Action Plan	To be removed from Action Plan and as such will not be reported in future documents	Monitoring is main way to inform us whether Measures are being successful.
(Woodbridge 20)	Undertake identified feasibility studies	Other	Other	SCDC, Suffolk County Council	n/a	2013	Feasibility studies for measures 3, 4, 5, 6 and 21 undertaken	n/a	Feasibility studies for measures 3, 4, 5, 6 and 21 completed. Recommends siting weather station for 3 months to monitor wind speed and direction, and to also trial holding back the traffic from the lights (and the AQMA) on both Melton Hill and Lime Kiln Quay Rd. Weather station investigations completed 2015/16. Traffic trial to be undertaken 2017 and in updated Action Plan.	To be removed from Action Plan and as such will not be reported in future documents	Feasibility study indicates that Measure 5 will have a negative impact within the AQMA, Measures 3,4, 6 and 21 will have negligible impact within the AQMA. None of the measures will therefore be put forward for completion.

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

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that $PM_{2.5}$ has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Suffolk Coastal District Council is taking the following measures to address $PM_{2.5}$:

- The Suffolk Air Quality Group, of which Suffolk Coastal District Council is a member, has engaged Suffolk County Council (SCC) Public Health and Protection in order to move forward together with regard to $PM_{2.5}$. The Public Health and Protection team have used the Defra/Public Health England Air Quality Toolkit for Directors of Public Health to develop a self-assessment framework for understanding the Suffolk air quality situation. This will highlight where there are gaps and potentially areas to prioritise. The team are also working on the Joint Strategic Needs Assessment. Questionnaires have been sent out to relevant stakeholders for completion. Early results have indicated the need for strategic leadership on air quality across Suffolk.

- Action Plan measures to be taken forward into the updated Action Plan for the Woodbridge AQMA set out in table 2.2 will aid to reduce $PM_{2.5}$ emissions, in addition to NO_2, within Woodbridge. Measures can be split into 2 groups those that will impact at a local level:
  Measure 1 – Travel Plan for the District Council offices
  Measure 2 – School travel, identify schools that contribute to emissions at the junction and work with them to reduce car usage
  Measure 3 and 4 – Future traffic restrictions and improved enforcement to Thoroughfare will aid to reduce congestion at this junction by freeing up the left filter lane at the lights.
  Measure 6 – Promotion of walking and cycling in Woodbridge

  Those that will impact more widely, often across the entire district:
  Measure 1 – Travel Plan for the District Council offices
  Measure 5 – Better integration of air quality in the Planning system
  Measure 7 – Raising air quality awareness through better website, press releases, publicity.

- Emission reduction measures being undertaken by the Port of Felixstowe, set out in Table 2.2, will aid to reduce emissions of $PM_{2.5}$. The following actions will give reductions within the vicinity of the Port and also along the main access routes both locally and further afield (A14 trunk road):
  Measure 9 – Efficient power technologies fitted to Rubber-Tyred Gantry cranes (RTGs) – ECO-RTGs and electric RTGs now in use
  Measure 10 – Abatement technologies fitted to Internal Movement Vehicles
  Measure 11 – Increased use of rail transport, will decrease emissions related to use of HGVs on the road network

Measure 16 – Electric vehicle trial at the Port for staff – if successful, electric vehicles may increase in use and associated emission reductions will be realised.
Measure 18 – Environmental Management System in use at the Port
Measure 19 – Energy Management System will reduce PM emissions from within the Port boundary.

- There are a number of measures (included within the general measures section of Table 2.2) specific to the District Council which will reduce $PM_{2.5}$ emissions both locally to the current and new Council Offices and more widely across the district:
  Measure 13 – Travel Plan for the new Council offices in Melton
  Measure 15 – Provision of electric vehicle charging points and electric pool vehicle at the new Council offices.
  Measure 20 – Home Working Policy
  Measure 21 – Reducing the emissions of the Council during service delivery through the East Suffolk Environmental Policy
  Measure 25 – Promotion of travel alternatives for staff
  Measure 33 – Redesign and update air quality on the Council website

- Reductions in $PM_{2.5}$ emissions are also targeted by the following measures related to Planning within the District Council;
  Measure 27 – Assessment of planning applications for impact on air quality.
  Measure 28 – Construction dust mitigation condition is being recommended for all relevant planning consents.
  Measure 29 – Air quality is included in the Local Plan Site Allocations Document and Felixstowe Area Action Plan.
  Measure 30 – The Local Plan promotes travel alternatives for the district which aims to reduce emissions from motor vehicle use. This is being embedded further in the Local Plan review which has recently begun.
  Measure 32 – Electric vehicle charge point provision is being requested by the Environmental Protection Team as part of the planning consultation response for major applications of residential developments, and also suggested for other significant planning applications.

- 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. 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 congestions and vehicle emissions:
  Measure 22 - Suffolk car and lift sharing scheme
  Measure 23 – Suffolk Walking Strategy
  Measure 24 - Suffolk Cycling Strategy
  Measure 31 - production of Travel Plan guidance for Suffolk
  Measure 34 - provision of Greener Travel Information
  Measure 35 - adoption of a national award scheme to assist schools with Travel Plans

- Suffolk County Council has installed traffic signal technology (MOVA) at a number of busy and congested roads junctions within the district over the last few years (Measure 14 and historic measure 1 in Woodbridge Action Plan). The most recent junctions to have

this technology fitted are both on the A1214 - Bell Lane/ Main Road in Kesgrave and Beech Road/Woodbridge Road in Rushmere St. Andrew. Traffic signal technology will allow a junction to operate in the most efficient way thereby reducing congestion and vehicle idling and emissions of both Oxides of Nitrogen (NOx) and Particulate Matter.

- Suffolk County Council has indicated, with regard to electric vehicle charging in the UK, that Motor Fuels Group and Chargemaster will be rolling out 400 rapid EV chargers across their PFS network. In addition, Highways England is looking to install rapid chargers in 'blackspots' on their strategic network which will include Suffolk. The electric vehicle charging network in Suffolk needs further development if we are to increase the amount of vehicles in use on Suffolk's roads. Any areas/sites identified within Suffolk Coastal will receive any necessary support from Suffolk Coastal to enable their installation.

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

Suffolk Coastal District Council undertook automatic (continuous) monitoring at 1 site in Woodbridge during 2016. Table A.1 in Appendix A shows the details of the site. National monitoring results are available at; https://uk-air.defra.gov.uk/networks/find-sites

A map showing the location of the monitoring site is provided in Appendix D (Map 8). 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

Suffolk Coastal District Council undertook non-automatic (passive) monitoring of NO_2 at 54 sites during 2016. Table A.2 in Appendix A shows the details of the sites.

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

There were 4 new NO_2 monitoring locations added in 2016, as follows:

- 3 sites within the town of Leiston (LEI 1, 2 and 3) – see Map 16 in Appendix D. In 2016 Leiston had a number of planning applications approved for residential development within the town, which will lead over time to increased traffic movements at key road junctions. Monitoring sites have been established at 2 junctions of concern to record NO_2 concentrations before development begins. These sites will remain in place for the foreseeable future so that we can assess NO_2 concentrations as we move into the future.

- 1 site in Martlesham which backs onto the A12 trunk road – see Map 11 in Appendix D. This site was located at the request of, and part-funded by, Martlesham Parish Council in order to confirm NO_2 levels at the rear of Lancaster Drive due to traffic emissions from the A12. This section of the A12 could be subject to increased traffic due to a possible large development in the future. This site was in place for 2016 and has now been removed as NO_2 levels were confirmed to be low (17µg/m^3) at this location.

There have been 6 new sites added to our NO_2 monitoring network in 2017, and 1 site has been relocated. All sites will be reported on in the 2018 Annual Status Report. The sites are as follows:

- 2 sites at Anzani House in Felixstowe. This is a vacant office block which is a Permitted Development from offices into residential. This site is very close to the A14 trunk road together with a number of warehouses and container handling facilities near to the Port of Felixstowe. Monitoring will establish current NO_2 concentrations at the site to determine any potential exceedances of the Air Quality Objectives should the residential development go ahead.
- 1 site in High Road, Trimley St. Martin at a location where vehicles are stopping to use a local shop near to a number of residential properties with facades very close to the kerb. In addition, High Road will experience an increase in future traffic due to a number of approved residential developments in this area. This site will determine current levels and be kept in place for the foreseeable future.
- 3 sites in Kesgrave located at the request of, and part-funded by, Kesgrave Town Council in order to confirm NO_2 levels in Dobbs Lane, Bell Lane and Main Road (A1214) near to the junction with Bell Lane.
- The monitoring site at Little Glemham (LGM 1) has been removed as the NO_2 concentrations recorded were very low (14µg/m^3). A new site has been located within the village of Little Glemham at a receptor close to the A12 trunk road in order to determine concentrations in this area.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, "annualisation" and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3.

For diffusion tubes, the full 2016 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

The results from the continuous analyser, located at a relevant receptor within the Woodbridge AQMA, shows the 2016 annual mean NO_2 concentration at 37µg/m^3 to be slightly higher than in 2015 (35µg/m^3) but still within the objective (40µg/m^3) for the third year running. The 1-hour objective is set at 200µg/m^3 not to be exceeded more than 18 times per year. During 2016 there were 0 exceedances of 200µg/m^3 recorded.

The results from diffusion tube monitoring show that there are 4 sites across the district with annual mean concentrations at or above the objective level of 40µg/m^3 in 2016;

- Three of these sites are in Felixstowe (FLX 33, 34 and 37) and are not located at or near to relevant receptors - they are in place to determine concentration gradients along Ferry Lane and there is therefore no need to consider them further.
- The fourth site is located within the AQMA declared at Stratford St. Andrew (STA 8). The previous year, in 2015, both monitoring sites within the Stratford St. Andrew AQMA (STA 1 and STA 8) were above the objective at 42µg/m^3 and 44µg/m^3 respectively. NO_2 concentrations at both sites have reduced in 2016 with STA 8 reducing slightly to 43µg/m^3 and STA 1 reducing significantly, now below the objective at 38µg/m^3.

There are 2 sites which are classed as 'borderline' (any site above 36µg/m^3 and therefore close to, but not above, the objective level of 40µg/m^3);

- A site within the Woodbridge AQMA (WBG 1) measuring 37 µg/m^3. This site shows an increase from 35µg/m^3 in 2015.
- A site within the Stratford St. Andrew AQMA measuring 38µg/m^3. This site shows a significant decrease from 42µg/m^3 in 2015.

There are no instances of the annual mean exceeding 60µg/m^3 in 2015 in the Suffolk Coastal district and therefore the risk of exceeding the 1-hour objective at any locations is very low.

Trend graphs showing annual mean NO_2 concentrations at all diffusion tube sites within the district with 5 or more years of data are presented in Appendix A, Figure A.1 to A.4. Monitoring has been carried out within the district since 2000 and the majority of sites show a reduction in concentrations over time to 2016.

Sites in Felixstowe (Figure A.1) show marked reductions since 2011. An AQMA was declared near to the Port of Felixstowe in 2009 and an Action Plan put in place. The Port of Felixstowe has undertaken significant emission reduction projects and emissions from and associated with their site have decreased. This has been borne out in the reducing NO_2 concentrations in this locality. Due to the reduction in NO_2 concentrations below the annual mean Air Quality Objective the AQMA was revoked in 2016.

Sites in Woodbridge (Figure A.2) show reductions over time from 2000 to 2015 and all sites in Woodbridge, including those within the AQMA, have been below the annual mean Air Quality Objective since 2014. There was a slight increase at all sites between 2015 and 2016, which was also seen at the background site (WBG 3). The reason for this slight increase is not known. We will be looking carefully at the results for 2017 once they are completed.

Sites in Kesgrave and Melton (Figure A.3) have fluctuated since monitoring began in 2002/03 with the most recent trend from 2011/12 to 2016 being a decline in measured concentrations.

Monitoring began in Martlesham in 2010 and NO_2 concentrations decreased until 2012. Since that time concentrations have risen slightly but continue to be well below the annual mean Air Quality Objective.

Monitoring sites along the A12 trunk road in the villages of Little Glemham, Farnham and Stratford St. Andrew (Figure A.4) show slightly fluctuating annual mean NO_2 concentrations between 2011 and 2016 with an overall reduction in concentrations over this period, albeit only slight at some locations.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
WBG	Woodbridge	Kerbside	627596	249261	NO2	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

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
FLX 12	Felixstowe 12	Roadside	630363	234890	NO2	NO	0	5	NO	2.3
FLX 14	Felixstowe 14	Other - Port	628604	232847	NO2	NO	0	5.8	NO	2
FLX 17	Felixstowe 17	Suburban	628817	236323	NO2	NO	0	31	NO	2
FLX 20	Felixstowe 20	Suburban	628669	233979	NO2	NO	10	54	NO	2
FLX 21	Felixstowe 21	Suburban	629253	234431	NO2	NO	9.5	1.5	NO	2.3
FLX 22	Felixstowe 22	Other - Port	629172	233446	NO2	NO	0	9	NO	1.8
FLX 23	Felixstowe 23	Suburban	628542	236592	NO2	NO	0	25	NO	2
FLX 24	Felixstowe 24	Suburban	628358	234634	NO2	NO	0	32	NO	2.5
FLX 26 a,b,c	Felixstowe 26	Other – Port	627959	234246	NO2	NO	0	13	NO	3.4
FLX 27 a,b,c	Felixstowe 27	Other – Port	627960	234238	NO2	NO	0	23	NO	2.8
FLX 29	Felixstowe 29	Other – Port	628712	232892	NO2	NO	0	12	NO	2
FLX 31	Felixstowe 31	Other – Port	628640	232795	NO2	NO	0	13	NO	2
FLX 32	Felixstowe 32	Other – Port	627971	234242	NO2	NO	0	18	NO	2
FLX 33	Felixstowe 33	Roadside	627884	234238	NO2	NO	n/a	5	NO	1.8
FLX 34	Felixstowe 34	Roadside	627934	234257	NO2	NO	n/a	3	NO	1.9
FLX 35	Felixstowe 35	Roadside	627959	234258	NO2	NO	10	3	NO	1.8
FLX 36	Felixstowe 36	Roadside	627989	234279	NO2	NO	n/a	3	NO	1.9

FLX 37	Felixstowe 37	Roadside	628012	234272	NO2	NO	n/a	3.5	NO	1.7
FLX 38	Felixstowe 38	Roadside	628130	234280	NO2	NO	n/a	1.5	NO	1.7
FLX 39	Felixstowe 39	Roadside	628760	236071	NO2	NO	0	11	NO	1.6
MEL 5	Melton 5	Roadside	628145	250418	NO2	NO	0.5	3.6	NO	1.9
MEL 7	Melton 7	Kerbside	628177	250478	NO2	NO	0	0.3	NO	1.7
KSG 9	Kesgrave 9	Roadside	621680	245796	NO2	NO	n/a	2.6	NO	1.9
WBG 1 a,b,c	Woodbridge 1	Roadside	627596	249261	NO2	YES	0	1.3	YES	2.4
WBG 3	Woodbridge 3	Suburban	626997	248488	NO2	NO	9	1	NO	1.9
WBG 5	Woodbridge 5	Roadside	627604	249243	NO2	NO	0	2.5	NO	2.3
WBG 6	Woodbridge 6	Roadside	627593	249255	NO2	YES	0	2	NO	2.2
WBG 8	Woodbridge 8	Roadside	627601	249283	NO2	YES	0	3	NO	2.4
WBG 10	Woodbridge 10	Roadside	627570	249240	NO2	NO	0.5	2	NO	2.1
WBG 12	Woodbridge 12	Roadside	627664	249203	NO2	NO	0.5	5	NO	1.8
WBG 13	Woodbridge 13	Roadside	627585	249239	NO2	NO	2.5	2.5	NO	1.9
WBG 15	Woodbridge 15	Roadside	627590	249249	NO2	YES	0	2	NO	2.5
WBG 17	Woodbridge 17	Roadside	627614	249271	NO2	NO	0	7	NO	1.9
WBG 18	Woodbridge 18	Roadside	627627	249339	NO2	NO	0	1.5	NO	2.2
WBG 20	Woodbridge 20	Roadside	627604	249295	NO2	YES	0	1.5	NO	1.5
WBG 22	Woodbridge 22	Roadside	627633	249233	NO2	NO	0	8	NO	2.2
WBG 23	Woodbridge 23	Roadside	627562	249235	NO2	NO	1	1	NO	2.1

MRT 1a,b	Martlesham 1	Suburban	624633	245447	NO2	NO	0	21	NO	1.7
MRT 2	Martlesham 2	Suburban	624499	245777	NO2	NO	0	65	NO	1.6
MRT 3	Martlesham 3	Suburban	624777	244643	NO2	NO	8	28	NO	1.6
LGM 1	Little Glemham 1	Roadside	634203	258820	NO2	NO	0	19	NO	1.5
FAR 1	Farnham 1	Roadside	636273	260134	NO2	NO	0	3	NO	1.8
FAR 2 a,b,c	Farnham 2	Roadside	636274	260120	NO2	NO	0	2	NO	1.9
STA 1 a,b,c	Stratford St Andrew 1	Roadside	635753	260002	NO2	YES	0	2	NO	1.6
STA 2	Stratford St Andrew 2	Roadside	635732	259995	NO2	NO	n/a	1.7	NO	1.8
STA 4	Stratford St Andrew 4	Roadside	635878	260117	NO2	NO	n/a	3.8	NO	1.8
STA 5	Stratford St Andrew 5	Roadside	635750	260018	NO2	NO	n/a	1.5	NO	1.2
STA 6	Stratford St Andrew 6	Roadside	635794	260042	NO2	NO	0	7	NO	1.3
STA 7	Stratford St Andrew 7	Roadside	635736	259984	NO2	NO	n/a	1.9	NO	1.7
STA 8 a,b,c	Stratford St Andrew 8	Roadside	635743	259992	NO2	YES	0	2	NO	1.6
SAX 1	Saxmundham 1	Roadside	638683	263014	NO2	NO	0	1	NO	1.8
LEI 1	Leiston 1	Roadside	644528	262463	NO2	NO	0.4	2.5	NO	2.2
LEI 2	Leiston 2	Roadside	644557	262464	NO2	NO	0.5	1.4	NO	2.2
LEI 3	Leiston 3	Roadside	644325	262634	NO2	NO	0	2.3	NO	1.9

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2016 (%) (2)	NO_2 Annual Mean Concentration (µg/m^3) (3)				
					2012	2013	2014	2015	2016
WBG	Roadside	Automatic	99.6	99.6	**44**	**42**	39	35	37
FLX 12	Roadside	Diffusion Tube	100	100	30	28	25	26	24
FLX 14	Industrial	Diffusion Tube	100	100	25	25	22	23	23
FLX 17	Roadside	Diffusion Tube	100	100	24	25	23	22	22
FLX 20	Industrial	Diffusion Tube	100	100	23	22	22	22	21
FLX 21	Suburban	Diffusion Tube	100	100	22	22	19	21	20
FLX 22	Industrial	Diffusion Tube	100	100	23	22	20	21	20
FLX 23	Roadside	Diffusion Tube	100	100	26	28	27	26	26
FLX 24	Roadside	Diffusion Tube	100	100	28	28	27	26	25
FLX 26	Roadside	Diffusion Tube	100	100	36	37	36	37	34
FLX 27	Roadside	Diffusion Tube	100	100	33	32	32	31	30
FLX 29	Industrial	Diffusion Tube	100	100	23	22	20	22	21
FLX 31	Industrial	Diffusion Tube	100	100	26	25	23	26	23
FLX 32	Roadside	Diffusion Tube	100	58.3	34	32	29	32	33

FLX 33	Roadside	Diffusion Tube	100	100	**60**	**58**	**55**	**54**	**53**
FLX 34	Roadside	Diffusion Tube	100	100	**46**	**42**	**45**	**42**	**40**
FLX 35	Roadside	Diffusion Tube	100	100	37	33	34	32	31
FLX 36	Roadside	Diffusion Tube	n/a	n/a	37	36	36	removed	
FLX 37	Roadside	Diffusion Tube	100	100	**43**	**41**	**42**	**41**	**40**
FLX 38	Roadside	Diffusion Tube	n/a	n/a	34	32	33	removed	
FLX 39	Roadside	Diffusion Tube	100	100		21	28	23	22
MEL 5	Roadside	Diffusion Tube	91.6	91.6	30	28	27	27	25
MEL 7	Kerbside	Diffusion Tube	91.6	91.6				25	25
KSG 9	Roadside	Diffusion Tube	91.6	91.6	31	28	29	28	28
WBG 1	Roadside	Diffusion Tube	100	100	**44**	**41**	39	36	37
WBG 3	Suburban	Diffusion Tube	100	100	15	14	13	12	14
WBG 5	Roadside	Diffusion Tube	100	100	26	26	22	20	23
WBG 6	Roadside	Diffusion Tube	100	100	**40**	38	35	33	34
WBG 8	Roadside	Diffusion Tube	100	100	**43**	30	33	31	35
WBG 10	Roadside	Diffusion Tube	100	100	30	30	28	25	25
WBG 12	Roadside	Diffusion Tube	100	100	24	23	21	20	22
WBG 13	Roadside	Diffusion Tube	100	100	33	31	28	26	28

WBG 15	Roadside	Diffusion Tube	100	100	**42**	**41**	37	33	35
WBG 17	Roadside	Diffusion Tube	100	100	28	27	25	23	25
WBG 18	Roadside	Diffusion Tube	100	100	34	35	34	27	32
WBG 20	Roadside	Diffusion Tube	91.6	91.6		31	32	30	32
WBG 22	Roadside	Diffusion Tube	100	100	22	22	20	16	20
WBG 23	Roadside	Diffusion Tube	100	100	24	23	24	22	23
MRT 1	Roadside	Diffusion Tube	100	100	21	21	22	24	24
MRT 2	Roadside	Diffusion Tube	n/a	n/a			16	removed	
MRT 3	Roadside	Diffusion Tube	83.3	83.3					17
LGM 1	Roadside	Diffusion Tube	100	100	14	15	14	13	14
FAR 1	Roadside	Diffusion Tube	100	100	26	29	27	24	25
FAR 2	Roadside	Diffusion Tube	100	100	31	31	29	30	29
STA 1	Roadside	Diffusion Tube	100	100	**42**	**41**	**42**	**43**	38
STA 2	Roadside	Diffusion Tube	100	100	26	27	25	28	25
STA 4	Roadside	Diffusion Tube	n/a	n/a	24	17	15	removed	
STA 5	Roadside	Diffusion Tube	n/a	n/a	18	removed			
STA 6	Roadside	Diffusion Tube	100	100		24	23	24	23
STA 7	Roadside	Diffusion Tube	100	100		34	30	34	34

STA 8	Roadside	Diffusion Tube	100	100				**44**	**43**
SAX 1	Roadside	Diffusion Tube	100	100			27	29	32
LEI 1	Roadside	Diffusion Tube	100	50					23
LEI 2	Roadside	Diffusion Tube	100	50					18
LEI 3	Roadside	Diffusion Tube	80	33.3					20

☒ **Diffusion tube data has been bias corrected**

☒ **Annualisation has been conducted where data capture is <75%**

☒ **If applicable, all data has been distance corrected for relevant exposure**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

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

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

(3) Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A.1 – Trends in Annual Mean NO_2 Concentrations in Felixstowe

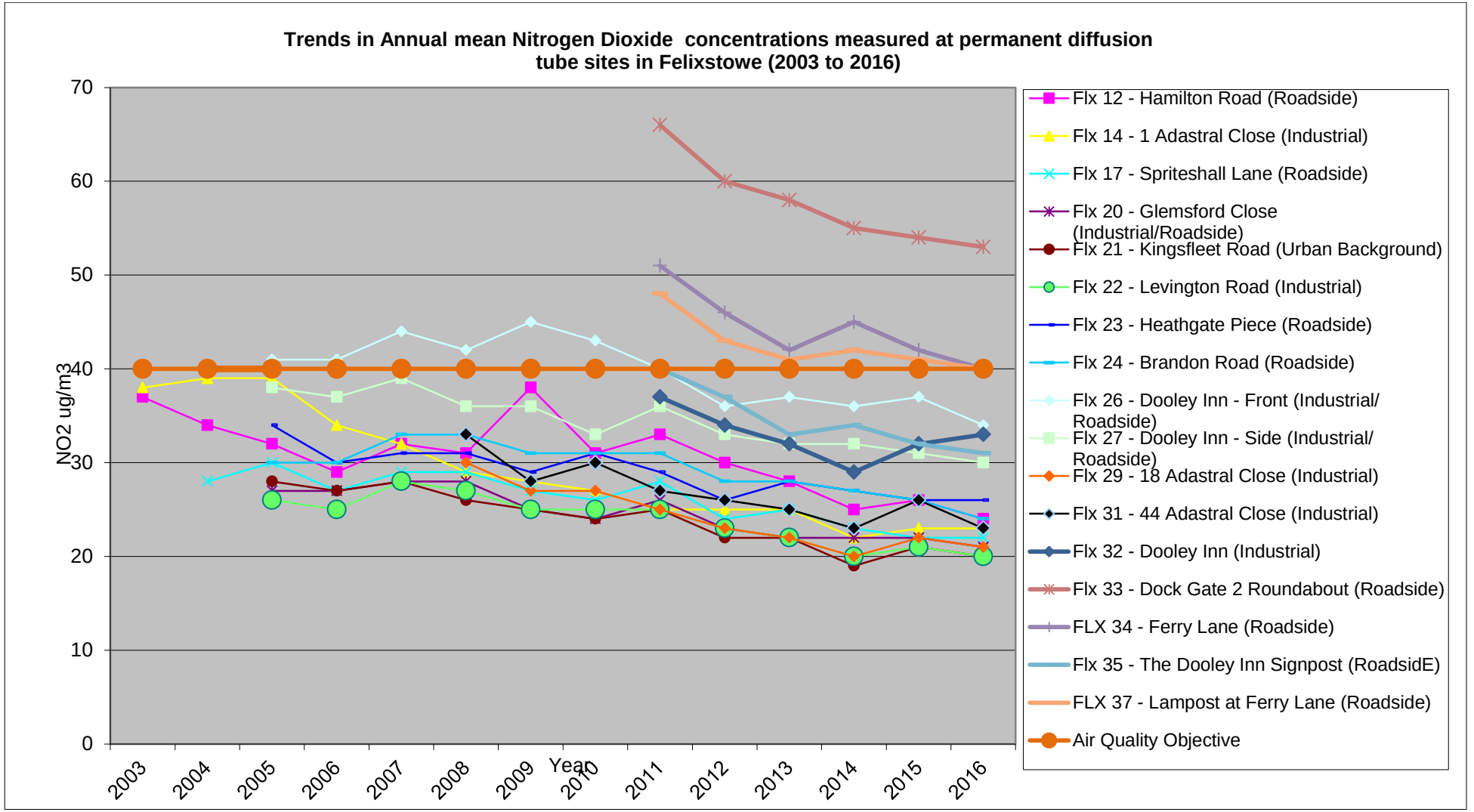


Figure A.2 – Trends in Annual Mean NO_2 Concentrations in Woodbridge

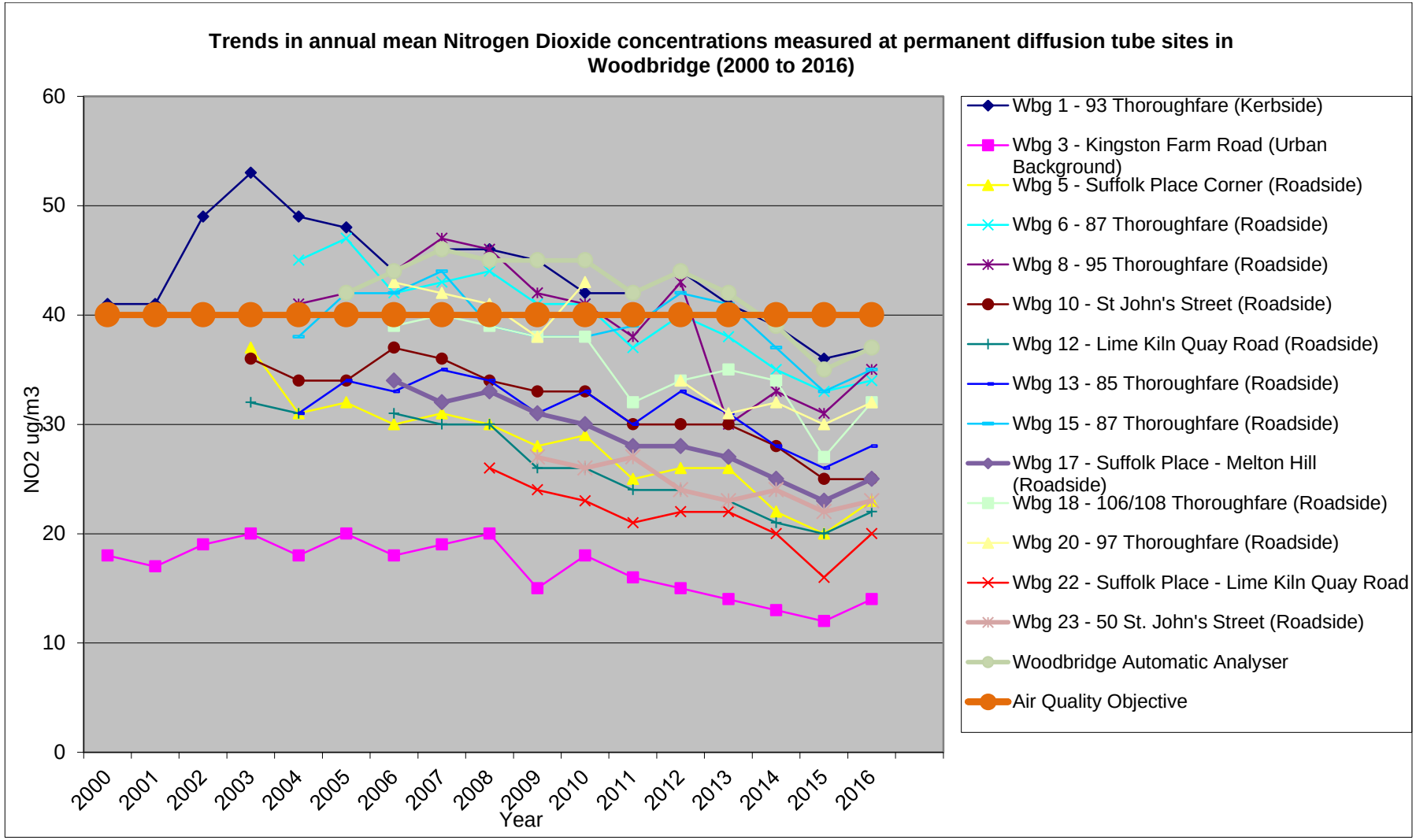


Figure A.3 – Trends in Annual Mean NO_2 Concentrations in Martlesham, Melton and Kesgrave

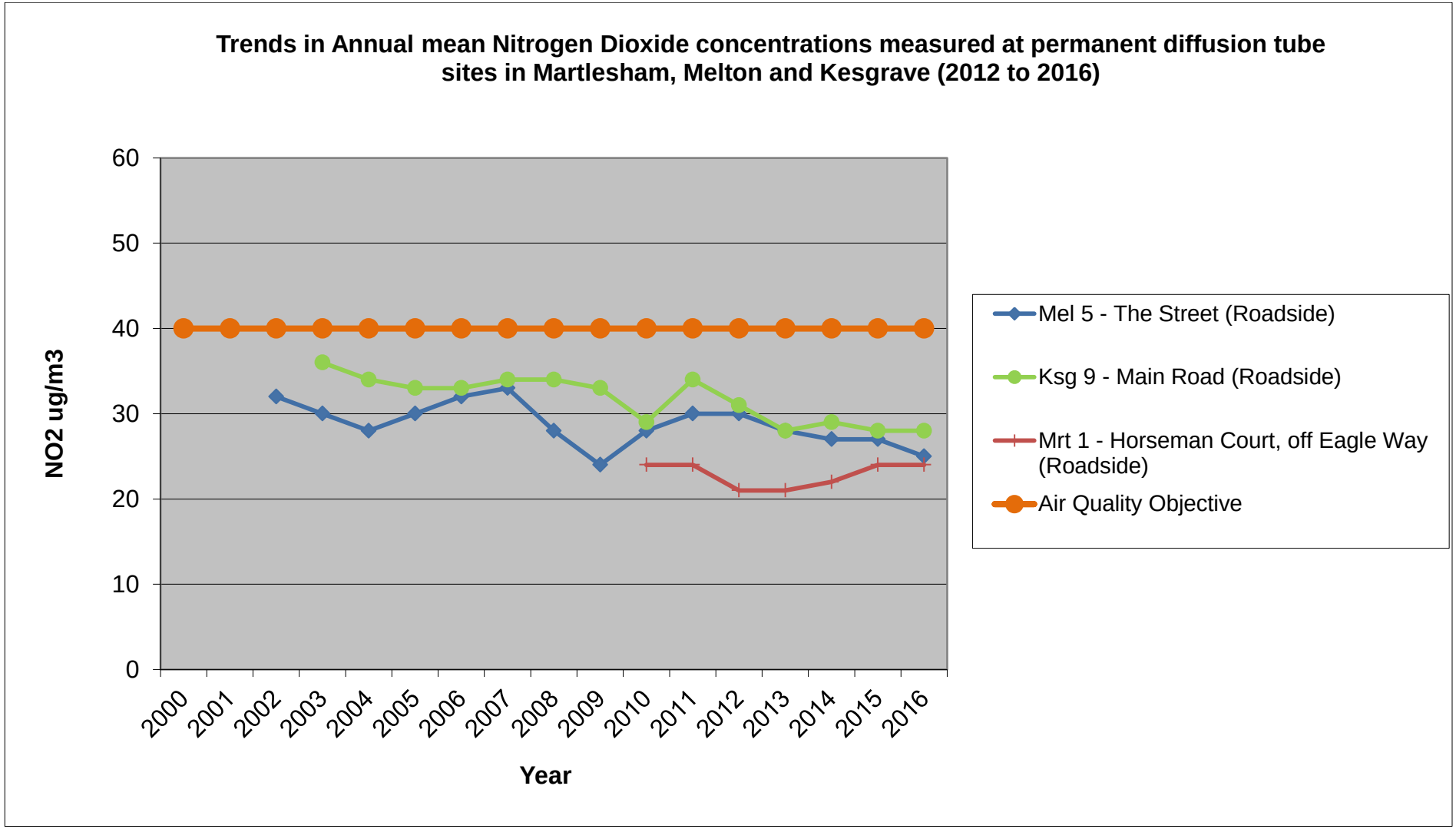


Figure A.4 – Trends in Annual Mean NO_2 Concentrations in Little Glemham, Farnham and Stratford St. Andrew

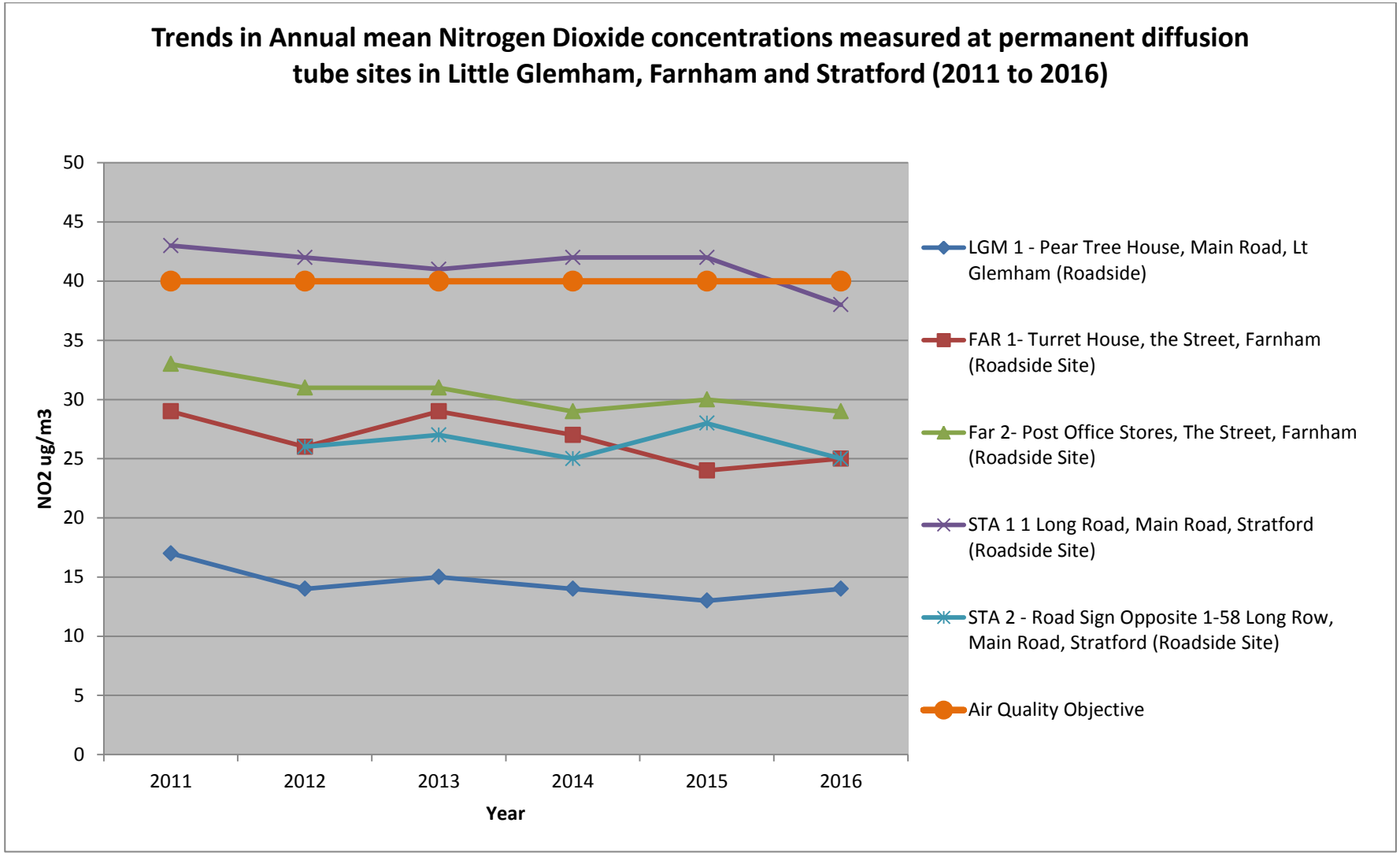


Table A.4 – 1-Hour Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2016 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
					2012	2013	2014	2015	2016
WBG	Roadside	Automatic	99.6	99.6	1	0	0	5	0

Notes:

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold.**

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

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

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

Appendix B: Full Monthly Diffusion Tube Results for 2016

Table B.1 – NO_2 Monthly Diffusion Tube Results – 2016

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (factor) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
FLX 12	35.7	35.4	13.1	33.8	29.5	24.8	30.2	26.8	27.2	27.8	39.9	41	30.4	23.7	23.7
FLX 14	39.6	35	20.5	31.2	27.8	19.4	27.1	24.4	28.3	28.8	32.9	36.3	29.3	22.8	22.8
FLX 17	29.3	31.5	27.1	28.5	27.7	22.8	23.5	21.8	28.8	30.2	32.5	35.2	28.2	22.0	22.0
FLX 20	39.9	33.9	22.7	30.0	17.1	17.6	27.6	24.0	25.7	20.9	29.2	30.6	26.6	20.7	20.7
FLX 21	35.9	22	21.3	28.1	20	15.7	20.9	21.7	25.5	24.0	31.4	35.8	25.2	19.6	19.6
FLX 22	34.5	30.3	22.9	26.0	22.9	16.7	25.1	20.4	23.36	20.8	32.1	34.7	25.8	20.1	20.1
FLX 23	27.6	33.3	33.4	33.4	39.7	35.6	26.3	26.7	31.7	40.4	35.2	36.2	33.3	26.0	26.0
FLX 24	35.6	36.5	28.7	32.6	26.9	26.3	29	27.5	31	28.4	40.1	37.7	31.7	24.7	24.7
FLX 26a	41.5	36.8	40.9	42.8	47.8	31.9	39.0	40.6	46.3	43.5	52.6	48.6	n/a	n/a	n/a
FLX 26b	53.5	53.6	41.2	45.4	41.9	36.4		37.7	46.1	33.2	49.7	49.9	n/a	n/a	n/a
FLX 26c	53.8	50.9	38.9	47.9	41.7	29.4	43.0	37.3	46.3	40.9	50.6	48.3	n/a	n/a	n/a
FLX 26 a,b,c - mean	49.6	47.1	40.3	45.4	43.8	32.6	41.0	38.5	46.2	39.2	51.0	48.9	43.6	34.0	34.0
FLX 27a	46.6	40.6	36.1	37.2	37.7	29.6	36.9	32.0	39.7	34.0	40.3	42.7	n/a	n/a	n/a
FLX 27b	45.5	45.6	35.1	40.7	38.4	31.2	35.7	30.2	35.8	36.0	38.7	42.3	n/a	n/a	n/a
FLX 27c	46.5	42.7	35.4	39.8	38.4	30.2	36.5	31.5	39.3	34.2	43.2	40.3	n/a	n/a	n/a

FLX 27 a,b,c-mean	46.2	43.0	35.5	39.2	38.2	30.3	36.4	31.2	38.3	34.7	40.7	41.8	38.0	29.6	29.6
FLX 29	34.4	30.8	22.8	26.7	24.5	17.3	25.1	22.0	23.9	21.8	33.7	35.4	26.5	20.7	20.7
FLX 31	36.1	35.4	27.1	27.7	28.4	18.9	28	23.4	29.7	23.6	38.7	33.3	29.2	23.0	23.0
FLX 32a	50.6	46.3	32.5	35.7	38	30.3	25.2	removed					n/a	n/a	n/a
FLX 32b	50.9	47.1	37.8	35.0	38.8			removed					n/a	n/a	n/a
FLX 32c	45.7	49.7	39.0	44.1	38			removed					n/a	n/a	n/a
FLX 32 a,b,c-mean	49.1	47.7	36.4	38.3	38.3	30.3	25.2	removed					37.9	33.2	33.2
FLX 33	80.3	66.6	69.1	66.7	63.8	61.5	69.8	61	73.8	65.5	81.8	60.8	68.4	**53.3**	**53.3**
FLX 34	56.4	54.6	53.5	50.7	53.6	48.3	48.3	46.7	52.8	51.2	57.8	41.8	51.3	**40.0**	**40.0**
FLX 35	46.6	60.6	48.5	50.8	48.7	43.4	46.8	44.8	51.2	48.1	52.7	48.4	49.2	38.4	30.9
FLX 37	63.4	56.7	44.1	54.1	49.9	42.5	52.6		51.6	43.1	48.3	57.7	51.3	**40.0**	**40.0**
FLX 39	32.6	32.5	11.6	30.2	31.9	25	26.7	23.8	33.3	28	29.3	36.5	28.5	22.2	22.2
KSG 9		33	25.7	36.3	33.5	25.0	37	32.6	39.4	28.0	47.5	55.3	35.8	27.9	27.9
WBG 1a	45.7	47.0	44.3	43.4	38.7	37.7	41.3	40.0	40.8	33.1	55.9	49	n/a	n/a	n/a
WBG 1b	51.0	46.8	44.2	47.5	40.7	36.5	40.4	42.9	44.8	39.8	53.9	47.2	n/a	n/a	n/a
WBG 1c	48.1	45.0	45.5	47.2	40.9	31.6	28	41.2	49.5	35.4	44.4	52.5	n/a	n/a	n/a
WBG 1 a,b,c - mean	48.3	46.3	44.7	46.0	40.1	35.3	36.6	41.4	45.0	36.1	51.4	49.6	43.4	36.9	36.9
WBG 3	21.3	18.1	14.7	17.3	13	10.5	13	11.7	15.8	14	23.1	21.9	16.2	13.8	13.8
WBG 5	29.2	29.2	27.0	26.9	26.2	20.1	20.5	21.3	23.6	27.9	32.4	35.8	26.7	22.7	22.7
WBG 6	45.7	41.6	37.9	40.8	32.3	35.1	35.3	35.1	43.4	39.5	48.7	45.2	40.1	34.0	34.0
WBG 8	67.3	42.3	30.6	38.7	36.8	33.7	38.2	32.5	41.7	37.3	49.5	43.9	41.0	34.9	34.9
WBG 10	33.4	34.9	31.9	33.6	33.1	28.6	12.5	25.1	33.5	28.8	32.7	29	29.8	25.3	24.6
WBG 12	31.6	30.4	21.2	26.2	22.9	17.9	24.3	23.8	25.8	22.3	32.4	32	25.9	22.0	21.7

WBG 13	36.2	38.4	34.8	36.4	36	32.3	44	29.7	34.7	36.1	42.8	44.1	37.1	31.6	28.1
WBG 15	39.3	44.2	39.6	42.8	35.4	39.6	37.8	37.7	42.3	39.7	45.6	51.7	41.3	35.1	35.1
WBG 17	32.7	32	27.4	32	31.2	22	25	23.8	31.5	27.7	35.2	36.2	29.7	25.3	25.3
WBG 18	36.1	34.6	36.3	39.1	40.7	34.7	28.1	31.1	41.4	38.5	43.7	49.1	37.8	32.1	32.1
WBG 20	44.5	41.2	32.8	37.9	32.8	29.4	36	36.2	39.8	33.2		47.8	37.4	31.8	31.8
WBG 22	23.7	21.9	26.2	27.1	24.5	20.2	16.4	17.9	22.6	26.1	26.3	31.4	23.7	20.1	20.1
WBG 23	36.3	30.9	24.2	28.2	26.5	36.5	23.9	22.8	28.7	23.8	34.5	42.2	29.9	25.4	23.4
MEL 5	40.2	36.9	29.3		28.5	24.0	31.1	28.7	33	28.6	37.1	35.8	32.1	25.0	24.5
MEL 7	40	30.6	30.1		28.1	26.5	29.7	24.6	36	26.4	40	45.2	32.5	25.3	25.3
MRT 1a	32.6	28	29.6	35.9	25.9	23.8	28.9	26.7	30.7	27.3	32.9	33.7	n/a	n/a	n/a
MRT 1b	36.5	30.7	39.6	29.9	29.2	24.1	28.3	25.2	29.9	27.0	32.7	35.8	n/a	n/a	n/a
MRT 1a,b,-Mean	34.6	29.4	34.6	32.9	27.6	24.0	28.6	26.0	30.3	27.2	32.8	34.8	30.2	23.6	23.6
MRT 3	23.9	25.6	22.3			20.1	16.5	17.0	23.7	21.9	28.6	30.4	23.0	17.9	17.0
LGM 1	16.4	17.2	16.9	17.5	18.6	13.8	13.5	14.4	20.3	17.6	20.7	21	17.3	13.5	13.5
FAR 1	27.2	32.7	34.3	33.6	32.0	29.9	26.4	29.1	31.6	34.2	36.6	35.0	31.9	24.9	24.9
FAR 2a	33.4	38.6	35.9	35.8	54.5	30.9	35.5	35.9	41.1	36.5	40.5	40.3	n/a	n/a	n/a
FAR 2b	33.5	36.1	37	30.0	33.3	32.2	36.9	36.7	40.8	34	40.4	42.6	n/a	n/a	n/a
FAR 2c	31.6	34.4	35.8	37.3	35.3	31.3	36.3	33.6	40.1	35.8	43.8	45.7	n/a	n/a	n/a
FAR 2a,b,c-mean	32.8	36.4	36.2	34.4	41.0	31.5	36.2	35.4	40.7	35.4	41.6	42.9	37.0	28.9	28.9
STA 1a	46.3	44	46.2	48.3	49	38.4	52.2	44.4	58.3	49.3	53.6	59.3	n/a	n/a	n/a
STA 1b	48.6	47.7	20.2	51.6	41.9	41.6	48.4	44.8	59.6	47.6	56.6	52.9	n/a	n/a	n/a
STA 1c	52.4	43.1	45.1	50.4	47.8	40.2	53.37	45.4	57.9	47.5	45.4	53.1	n/a	n/a	n/a
STA 1a,b,c-mean	49.1	44.9	37.2	50.1	46.2	40.1	51.3	44.9	58.6	48.1	51.9	55.1	48.1	37.5	37.5

STA 2	35.8	33.3	29.1	34.1	29	30.2	37	31.6	33.4	13.9	40.5	34	31.8	24.8	24.8
STA 6	28.4	31.3	26	30.7	26.1	24.5	27.1	26.1	32.9	29.9	34.6	33.7	29.3	22.8	22.8
STA 7	34.8	46	44.2	35.0	36.2	49.4	42	42.5	47.9	49.2	52.9	39	43.3	33.7	33.7
STA 8a	52.9	52	53.6	59.0	57.2	43	56	50.6	56	50.4	55.7	49.3	n/a	n/a	n/a
STA 8b	59.6	56.9	52.4	62.8	52.7	45.9	57.3	51.7	65	51.2	53.5	60.6	n/a	n/a	n/a
STA 8c	57.2	56.2	53.5	63.0	57.8	42.5	57.8	52.7	62	50	57.5	64	n/a	n/a	n/a
STA 8a,b,c-mean	56.6	55.0	53.2	61.6	55.9	43.8	57.0	51.7	61.0	50.5	55.6	58.0	55.0	**42.9**	**42.9**
SAX 1	36.7	40.9	41.2	43.2	42.4	39.0	33.9	34.5	41.9	39.7	47.9	43.5	40.4	31.5	31.5
LEI 1							29.2	31.1	27.8	32.9	30.3	38.2	31.6	23.4	22.9
LEI 2							21.4	21.8	21.7	25.6	27.4	34.7	25.4	18.8	18.1
LEI 3								25.2		28.2	32.5	37.8	30.9	20.0	20.0

☒ **Local bias adjustment factor used (for Woodbridge sites)**

☒ **National bias adjustment factor used (for all other locations)**

☒ **Annualisation has been conducted where data capture is <75%**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

(1) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to nearest relevant public exposure.

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

Air Quality Monitoring Data QA/QC

QA/QC of automatic monitoring

NO_2 concentrations were monitored by ozone chemiluminescence. 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. Calibrations were undertaken every 2-3 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 UKAS Quality Control Audits carried out by Ricardo-AEA. 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-AEA. They include accredited audit zero and span calibrations, linearity, NO_x converter efficiency, flow and leak checks as well as checks of the instruments sampling system. Data presented in this report have been fully ratified by Ricardo-AEA.

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-AEA 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%.

QA/QC of diffusion tube monitoring

Diffusive samplers, or diffusion tubes, (as described in paragraphs 7.178 - 7.198 of the Technical Guidance LAQM.TG(16)) are widely used for indicative monitoring of ambient nitrogen dioxide (NO_2) in the context of Review and Assessment. Diffusion tubes are particularly useful:

- when simple, indicative techniques will suffice;
- to give an indication of longer-term average NO_2 concentrations;
- for indicative comparison with the Air Quality Strategy Objectives based on the annual mean;
- for highlighting areas of high NO_2 concentration; and
- where installation of an automatic analyser is not feasible

They are useful for identifying areas of high NO_2 concentration, particularly when dealing with sources such as traffic emissions, which do not change much from day to day.

Diffusion tubes were deployed, and the data analysed, as set out in the Technical Guidance LAQM.TG(16) paragraphs 7.178-7.198, and in accordance with the "NO_2 Diffusion Tubes for LAQM:Guidance Note for Local Authorities". 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, any required distance correction calculations were undertaken. Further details of all stages are outlined in the following text.

Analytical laboratory

The analytical laboratory used for supply and analysis of NO_2 diffusion tubes is Environmental Scientifics Group (ESG) based in Didcot. The monitoring is undertaken using Palmes passive diffusion tubes exposed on a monthly basis. The tubes are prepared by spiking acetone:triethanloamine (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 the United Kingdom Accreditation Scheme (UKAS).

The samples were analysed in accordance with ESG standard operating procedure ANU/SOP/1015 issue 1, which meets the guidelines set out in Defra's 'Diffusion Tubes For Ambient NO_2 Monitoring practical Guidance'.

The results were initially calculated assuming an ambient temperature of 11^{o}C, and the reported values adjusted to 20^{o}C to allow for direct comparison with EU limits.

The diffusion tubes are stored and installed by Suffolk Coastal District Council in accordance with the "NO_2 Diffusion Tubes for LAQM:Guidance Note for Local Authorities"

ESG participates in the Defra promoted independent analytical proficiency testing (PT) scheme AIR-PT 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_2 diffusion tubes, the test sample types used are called AIR NO2 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

ESG Scientifics, at Didcot achieved the highest score of 'Satisfactory' during 2016.

Annualisation of diffusion tube data

Some diffusion tube sites failed to achieve full data capture in 2016, mainly due to stolen tubes. For sites with fewer than 9 months of data, and for some other sites of concern, the mean of the 2016 data has been "annualised" using the procedure set out in LAQM.TG(16) Box 7.9. 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. The two sites used here are St. Osyth (Rural) and Norwich Lakenfields (Urban background). Both sites are part of the UK Automatic Urban and Rural Network (AURN). Historically we have annualised our data using AURN sites at Wicken Fen and St. Osyth as the 2 closest sites to us. For 2016 Wicken Fen has data capture <85% so St Osyth and Norwich Lakenfields were used.
- Obtain the unadjusted (not corrected for bias) annual mean (Am) for the calendar year for these sites. As this calculation is to estimate the annual mean for a diffusion tube site, the diffusion tube calendar year for 2016 was based on the diffusion tube exposure periods rather than 1st Jan – 31st Dec 2016.
- Work out the period mean (Pm) 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 (Am:Pm) 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 2016.
- Calculations for R_a are set out in the table overleaf.

FLX32: the (unadjusted) measured period mean (M) was 37.9 µg/m^3: 37.9 µg/m^3 (M) x 1.12 (R_a) = **42.5 µg/m^3 (annualised mean)**
KSG 9: the (unadjusted) measured period mean (M) was 35.8 µg/m^3: 35.8 µg/m^3 (M) x 1 (R_a) = **35.8 µg/m^3 (annualised mean)**
MRT 3: the (unadjusted) measured period mean (M) was 23.0 µg/m^3: 23.0 µg/m^3 (M) x 1 (R_a) = **23.0 µg/m^3 (annualised mean)**
LEI 1: the (unadjusted) measured period mean (M) was 31.6 µg/m^3: 31.6 µg/m^3 (M) x 0.95 (R_a) = **30.0 µg/m^3 (annualised mean)**
LEI 2: the (unadjusted) measured period mean (M) was 25.4 µg/m^3: 25.4 µg/m^3 (M) x 0.95 (R_a) = **24.1 µg/m^3 (annualised mean)**
LEI 3: the (unadjusted) measured period mean (M) was 30.9 µg/m^3: 30.9 µg/m^3 (M) x 0.83 (R_a) = **25.7 µg/m^3 (annualised mean)**

- The annualised means will then be bias adjusted as for all other sites.

Calculations used in diffusion tube annualisation 2016

Site	Missing months	Annual mean NO_2, St Osyth µg m^{-3} (Am)	Annual mean NO_2, Norwich Lakenfields µg m^{-3} (Am)	Period mean NO_2, St Osyth µg m^{-3} (Pm)	Period mean NO_2, Norwich Lakenfields µg m^{-3} (Pm)	Ratio Annual: Period mean St Osyth (Am:Pm)	Ratio Annual: Period mean Norwich Lakenfields (Am:Pm)	Average Am:Pm of both sites (R_a)
FLX 32	Aug, Sept, Oct, Nov, Dec	13.26	14.25	12.18	12.39	1.09	1.15	1.12
KSG 9	Jan	13.26	14.25	13.29	14.06	0.99	1.01	1
MRT 3	Apr, May	13.26	14.25	12.92	14.68	1.03	0.97	1
LEI 1	Jan, Feb, Mar, Apr, May, Jun	13.26	14.25	13.47	15.50	0.98	0.92	0.95
LEI 2	Jan, Feb, Mar, Apr, May, Jun	13.26	14.25	13.47	15.50	0.98	0.92	0.95
LEI 3	Jan, Feb, Mar, Apr, May, Jun, Jul, Sept	13.26	14.25	15.87	17.50	0.84	0.81	0.83

N.B Annual mean for all sites runs 05/01/16 to 05/01/17.

Period mean dates:

Site	Month	On/Off dates
FLX 32	Jan–Jul	05/01/16–27/07/16
KSG 9	Feb–Dec	04/02/16–05/01/17
MRT 3	Jan-Mar + Jun-Dec	05/01/16–30/03/16 + 25/05/16–05/01/17
LEI 1 & 2	Jul–Dec	29/06/16-05/01/17
LEI 3	Aug + Oct-Dec	27/07/16–24/08/16 + 28/09/16-05/01/17

NO_2 Diffusion Tube Bias Adjustment

Diffusion tubes are useful low-cost method for indicative monitoring of ambient nitrogen dioxide (NO_2) concentrations. However, diffusion tubes are affected by several sources of interference which can cause substantial under or overestimation (often referred to as "bias") compared to the chemiluminescent analyser (defined within Europe as the reference method).

Any such "bias" is a problem where diffusion tube results are to be compared with air quality objectives. As a result, local authorities are required to quantify the "bias" of their diffusion tube measurements and apply an appropriate bias adjustment factor to the annual mean if required.

Local Authorities can either:

1. Carry out their own co-location study (in which the accuracy of the diffusion tubes is quantified by exposure alongside an automatic chemiluminescence analyser), and use the results to calculate a bias adjustment factor.

2. Use a combined bias adjustment factor, based on the result of many co-location studies (using the same laboratory and tube preparation method).

National Bias Adjustment Factor

Combined “national” bias adjustment factors for UK diffusion tube laboratories, based upon Local Authority co-location studies throughout the UK, are provided on behalf of Defra and the Devolved Administrations. A database of these bias adjustment factors is available at http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html. **The national bias adjustment factor** given for ESG, Didcot in 2016, in the 06/17 edition of ‘National Spreadsheet of Bias Adjustment Factors’ **was 0.78 using results from 38 different studies**. A copy of the output from the spreadsheet can be viewed overleaf.

NO_2 Diffusion Tube Bias Adjustment - Local Co-location Study

There is a kerbside chemiluminescent analyser recording NO_2 concentrations derived from road traffic emissions at the junction of Lime Kiln Quay Road, Thoroughfare, and St. John's Street in Woodbridge. The site is approximately 1 metre from the kerb and 14 metres from the traffic lights at the junction. This area of the junction is very narrow and enclosed by tall buildings, creating a canyon effect.

The bias adjustment factor was calculated using the Precision and Accuracy Spreadsheet available for download from http://laqm.defra.gov.uk/bias-adjustment-factors/local-bias.html The output from the spreadsheet can be seen below.

Precision is calculated based on diffusion tube data only. Diffusion tube precision can be described as the ability of a measurement to be consistently reproduced, i.e. how similar the results of duplicate or triplicate tubes are to each other. Unlike bias, poor precision cannot be adjusted for. It can only be improved by careful handling of the tubes in both the laboratory and the field.

For the purposes of Local Air Quality Management, tube precision is separated into two categories, "Good" or "Poor", as follows: tubes are considered to have "good" precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average CV of all monitoring periods is less than 10%. Tubes are considered to have "poor" precision where the CV of four or more periods is greater than 20% and/or the average CV is greater than 10%.

The precision results for our co-location study show 11 out of 12 periods with a CV smaller than 20% and the average CV of all monitoring periods (at 7%) is less than 10%. **The precision is therefore classed as "Good".**

Local authorities are advised to use the outputs from the blue box on the spreadsheet, in which diffusion tubes for which there is poor precision are automatically disregarded.

The results from our co-location study are as follows:

Bias calculated using 11 periods of data
Triplicate diffusion tube mean (2016) = 44µg/m^3 with a mean precision (expressed as the coefficient of variation - CV) of 6.
Automatic analyser annual mean (2016) = 37µg/m^3 with 99% data capture.
Adjusted tubes mean = 37 (35-39) µg/m^3
Bias adjustment factor (2016) = 0.85 based on 11 months data.

Discussion of Choice of Factor to Use

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 Woodbridge only. This location is unusual, being a street canyon: it is considered representative of the other diffusion tube monitoring sites within Woodbridge, but not of diffusion tube locations elsewhere within the district. **The 2016 bias adjustment factor of 0.85 obtained at Woodbridge has been applied to the other sites within Woodbridge only.**

All diffusion tube monitoring sites elsewhere on the district have been adjusted for bias using the combined or "national" bias adjustment factor of 0.78 from the June 2017 version of the National Diffusion Tube Bias Adjustment Factor Spreadsheet. These sites consist of tubes exposed over a range of settings which differ from the co-location site and it would not be relevant to use the local bias adjustment factor from Woodbridge for these sites.

Distance correction calculations

Monitoring sites are usually located in the areas of concern to represent the worst-case public exposure, but it is not always possible to measure concentrations at the desired location for practical reasons and in some cases the relevant public exposure is located a short distance away.

A calculator has been produced by Defra which estimates the annual mean NO_2 concentration at one distance from a road, using measurements made at a different distance from the same road. The calculator can be found at https://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html

This calculator has been used to predict concentrations at the nearest point of relevant public exposure for the following diffusion tube monitoring sites;

FLX 35 - signpost at front of The Dooley Inn PH, Felixstowe
WBG 10 - signpost in St. John's Street next to 85 Thoroughfare, Woodbridge
WBG 12 - 8 Lime Kiln Quay Road (tube on front fence), Woodbridge
WBG 13 - traffic lights at front of 85 Thoroughfare, Woodbridge
WBG 23 - Lamppost 50 St. John's Street, Woodbridge
MEL 5 - 6 The Street, Melton
MRT 3 - garden shed 32 Lancaster Drive, Martlesham Heath
LEI 1 – signpost on corner of Cross Street and High Street
LEI 2 – lamppost on corner of Station Road and Valley Road

Table A.3 in this report provides trend data for the previous 5 years and historic data must also all be distance corrected where applicable. Distance correction has been undertaken for the above sites for the previous 5 years in order to provide the data included in table A.3.

Those Felixstowe sites in place to determine whether there was a gradient between the roundabout and The Dooley have not been distance corrected as this is not applicable here.

The distance correction calculator requires background concentrations to be input for each location. Background concentrations were derived from the Defra Background maps which can be found at https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html.

All input and output figures for the distance correction calculator are shown in the tables below;

Background concentrations for use with the distance correction calculator (µg/m^3):

Site	Grid Square for site	2012	2013	2014	2015	2016
FLX 35	627 234	25.6	19.6	19.2	18.9	18.6
WBG 10	627 249	14.4	12.6	12.1	11.7	11.3
WBG 12	627 249	14.4	12.6	12.1	11.7	11.3
WBG 13	627 249	14.4	12.6	12.1	11.7	11.3
WBG 23	627 249	14.4	12.6	12.1	11.7	11.3
MEL 5	628 250	13.4	11.4	11.0	10.6	10.2
MRT 3	624 244	-	-	-	-	12.2
LEI 1	644 262	-	-	-	-	8.5
LEI 2	644 262	-	-	-	-	8.5

Input figures and results from distance correction calculator:

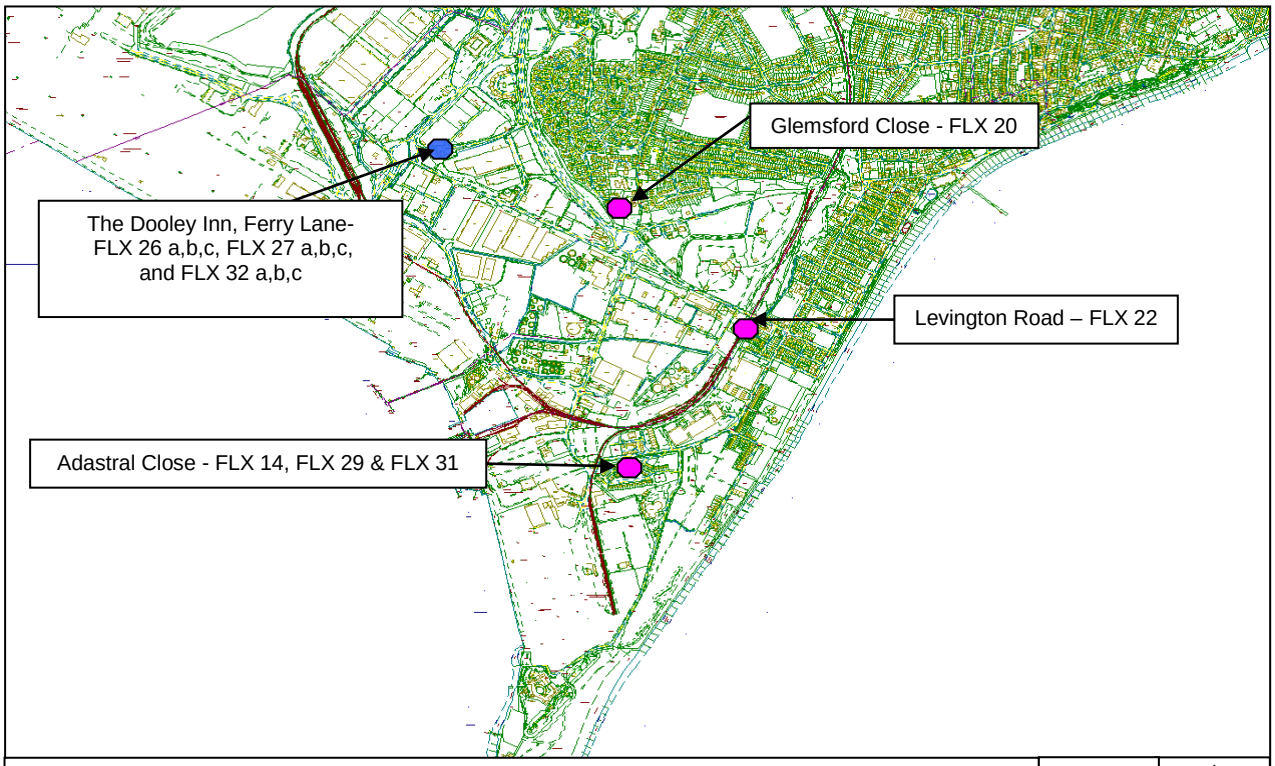
Site	Distance from kerb to monitoring site (m)	Distance from monitoring site to receptor (m)	2012 data (µg/m^3)		2013 data (µg/m^3)		2014 data (µg/m^3)		2015 data (µg/m^3)		2016 data (µg/m^3)	
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
FLX 35	3	10	44.3	**37.2**	41.4	**33.1**	42.7	**33.8**	39.2	**31.5**	38.4	**30.9**
WBG 10	2	0.5	30.8	**29.9**	30.4	**29.5**	28.6	**27.7**	25.7	**25.0**	25.3	**24.6**
WBG 12	5	0.5	24.7	**24.4**	22.8	**22.5**	21.4	**21.1**	20.6	**20.3**	22.0	**21.7**
WBG 13	2.5	2.5	36.5	**32.7**	35.0	**31.2**	31.0	**27.8**	29.0	**26.0**	31.6	**28.1**
WBG 23	1	1	25.8	**24.2**	25.1	**23.4**	25.3	**23.5**	23.4	**21.8**	25.4	**23.4**
MEL 5	3.6	0.5	30.6	**30.0**	28.6	**28.0**	28.0	**27.4**	27.4	**26.8**	25.0	**24.5**
MRT 3	28	8	-	**-**	-	**-**	-	**-**	-	**-**	17.9	**17.0**
LEI 1	2.5	0.4	-	**-**	-	**-**	-	**-**	-	**-**	23.4	**22.9**
LEI 2	1.4	0.5	-	**-**	-	**-**	-	**-**	-	**-**	18.8	**18.1**

Pre = uncorrected for distance
Post = corrected for distance using the Defra distance correction calculator

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

Felixstowe Maps

Map 1: Map showing location of a number of diffusion tubes at The Dooley Inn, Ferry Lane and Adastral Close, together with sites at Levington Road and Glemsford Close



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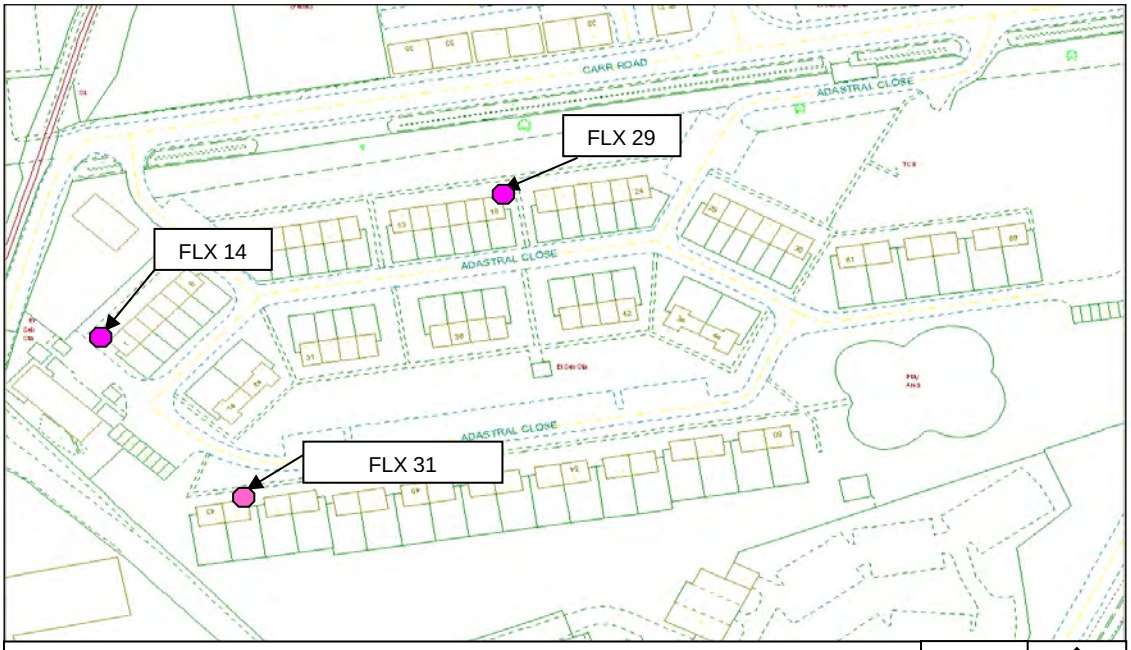
Not to scale

N

Single Diffusion tube site Triplicate diffusion tube site

Map 2 Detailed map of diffusion tube locations at Adastral Close



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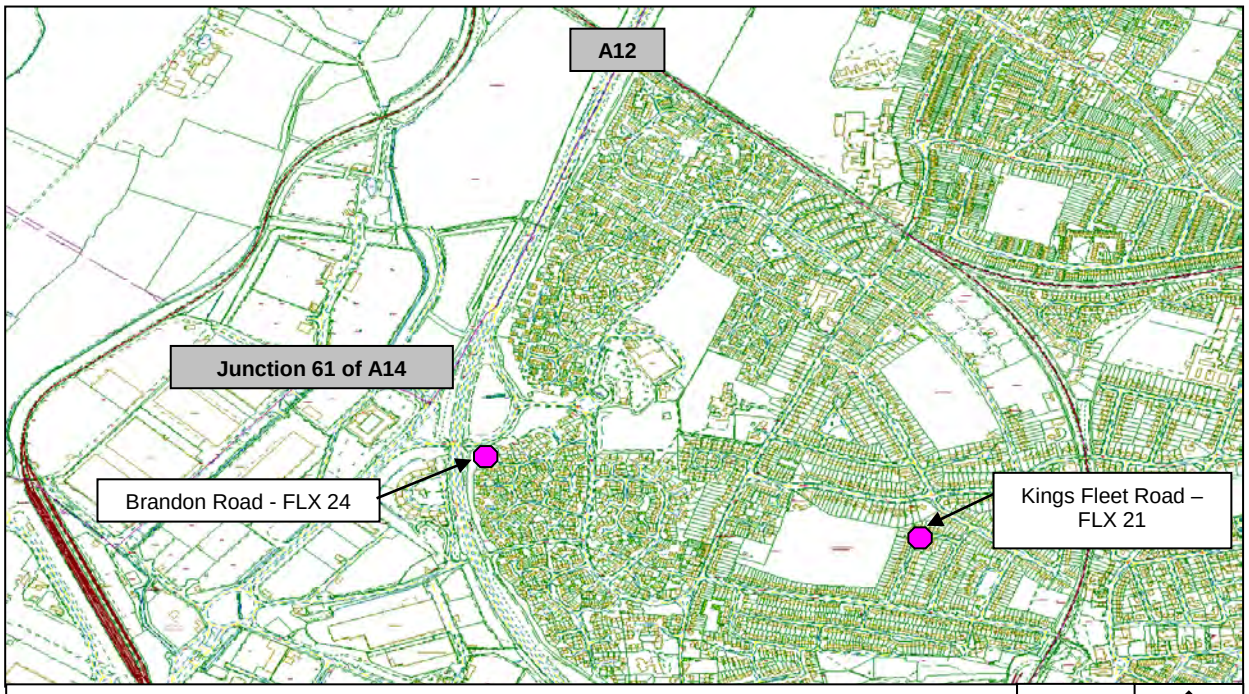
Single Diffusion tube site

Map 3 Map of diffusion tube locations at Kingsfleet Road and Brandon Road



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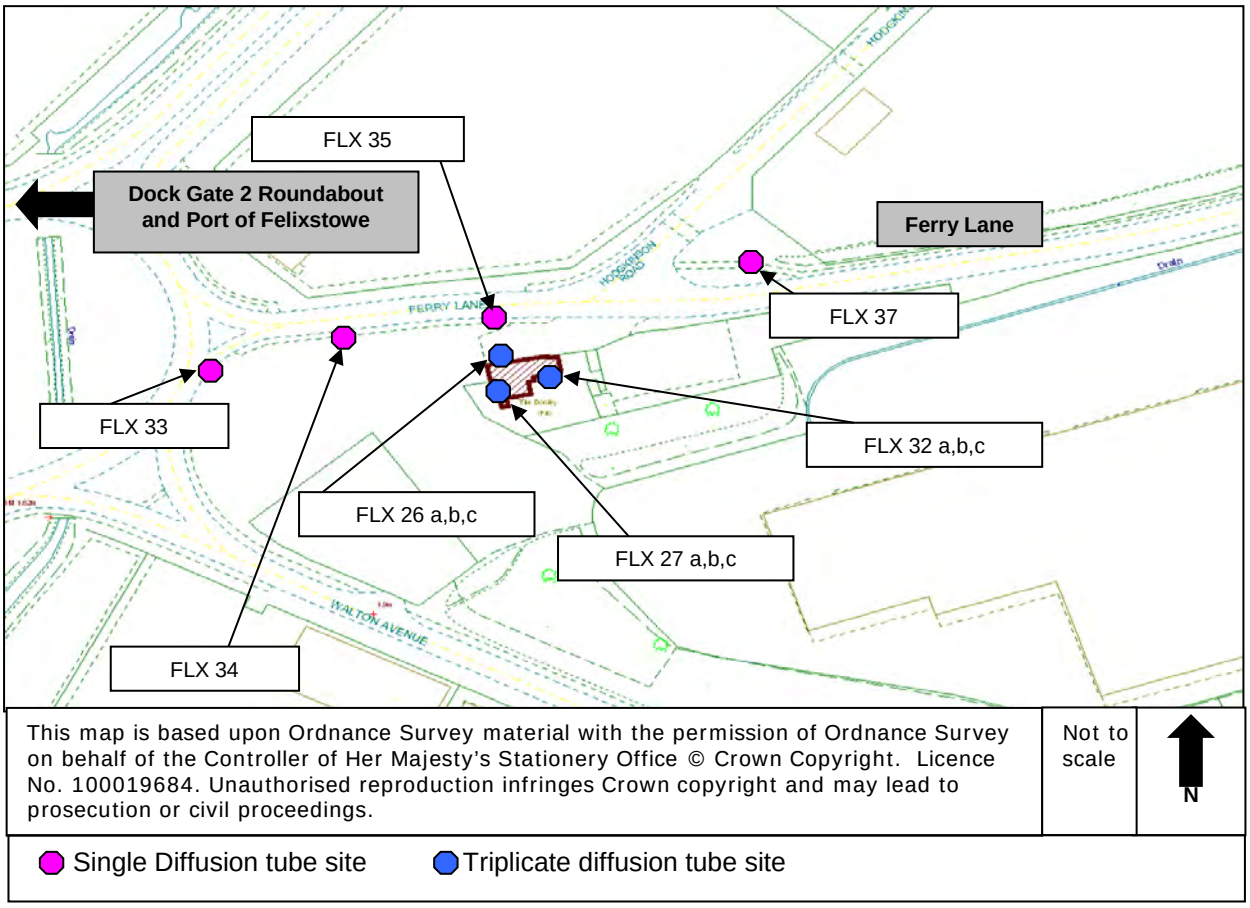
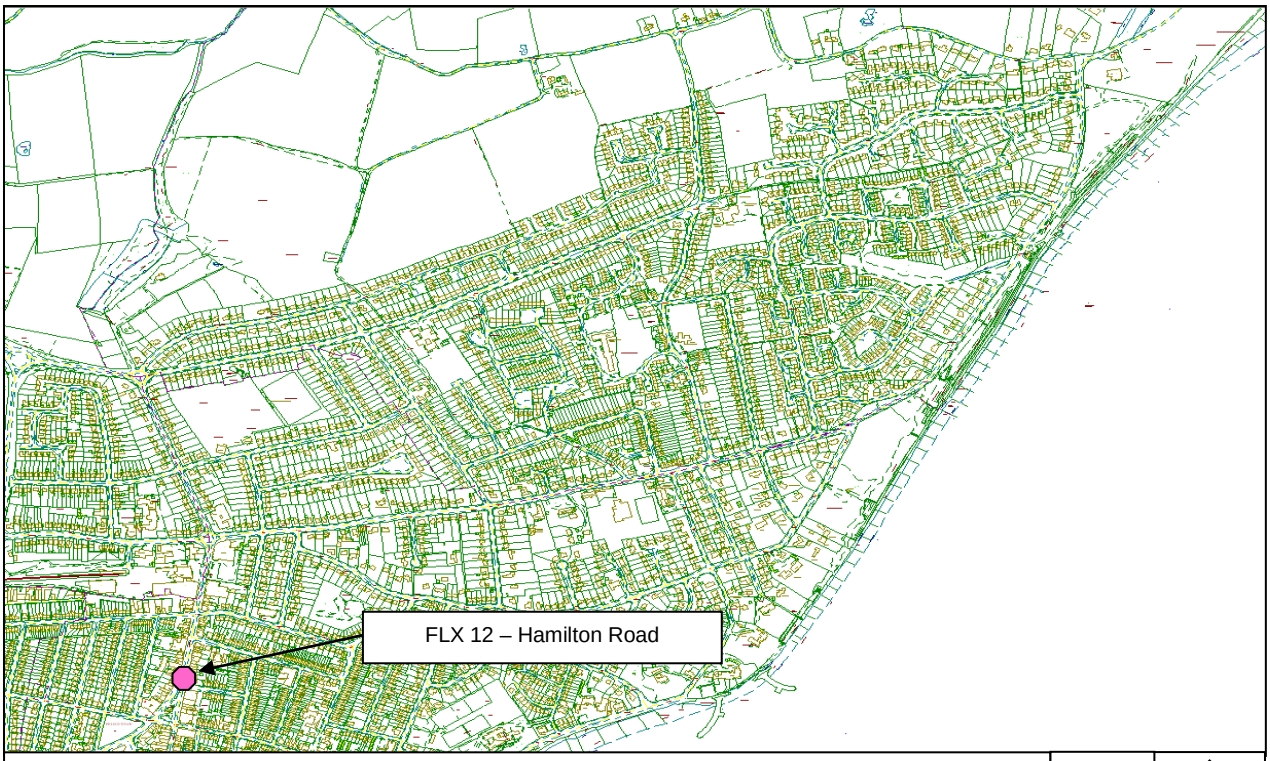
Single Diffusion tube site

Map 4 **Map of diffusion tube locations around the Dooley Inn, Ferry Lane (hatched in red is the location of the revoked AQMA at Ferry Lane, Felixstowe)**



Map 5 Map of diffusion tube location at Hamilton Road



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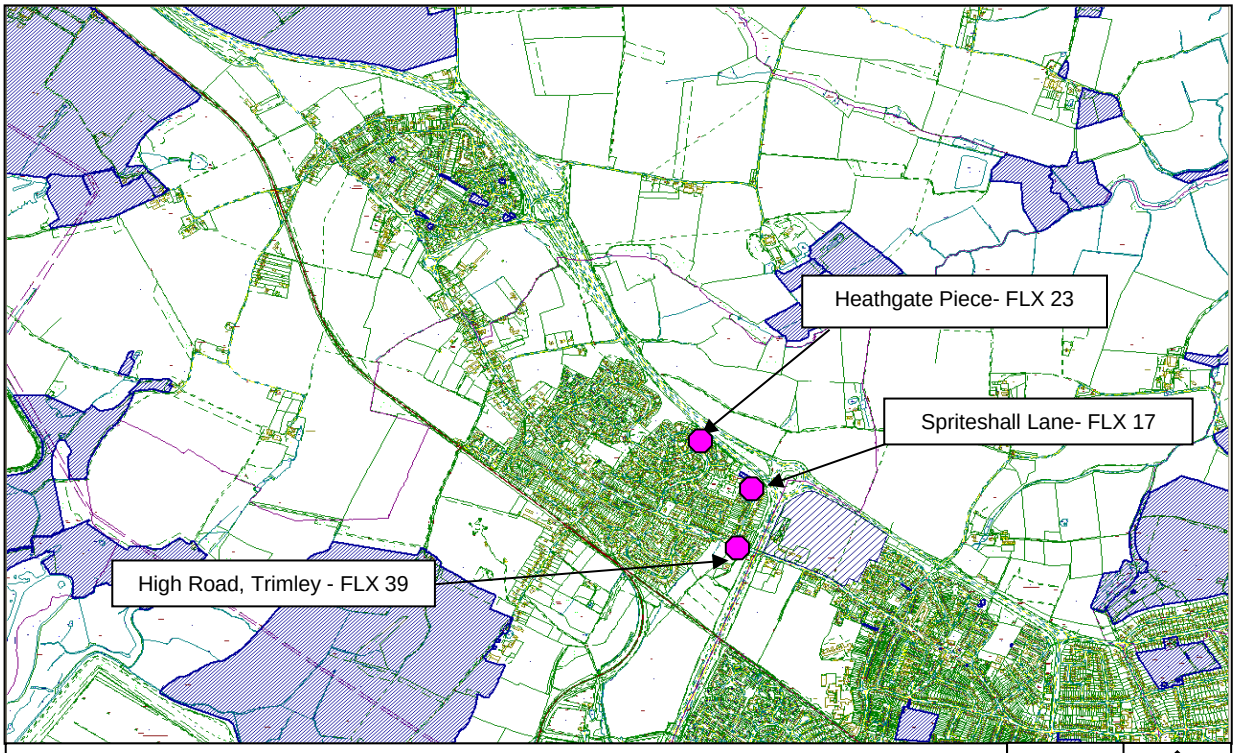
Single Diffusion tube site

Map 6 **Map of diffusion tube locations at Heathgate Piece, Spriteshall Lane and High Road, Trimley**



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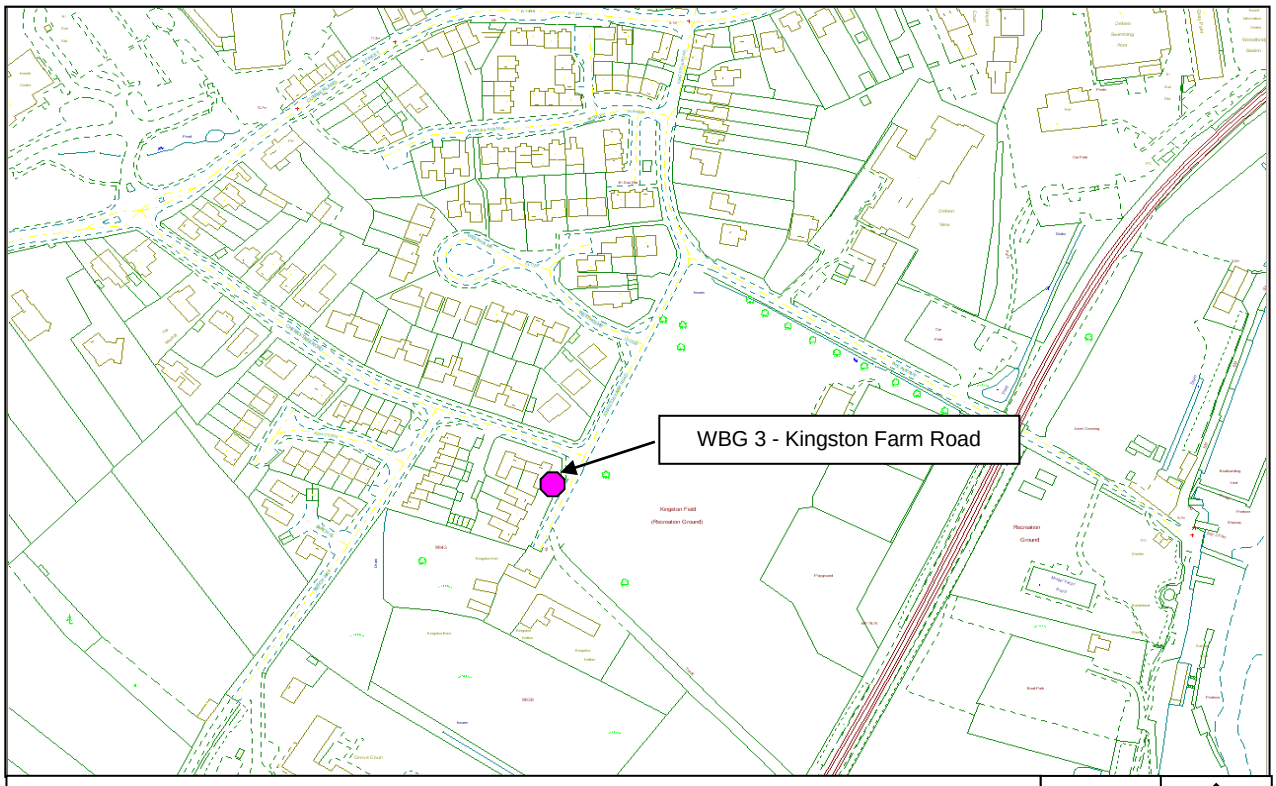
Single diffusion tube site

Woodbridge Maps

Map 7 **Map showing diffusion tube location at Kingston Farm Road**



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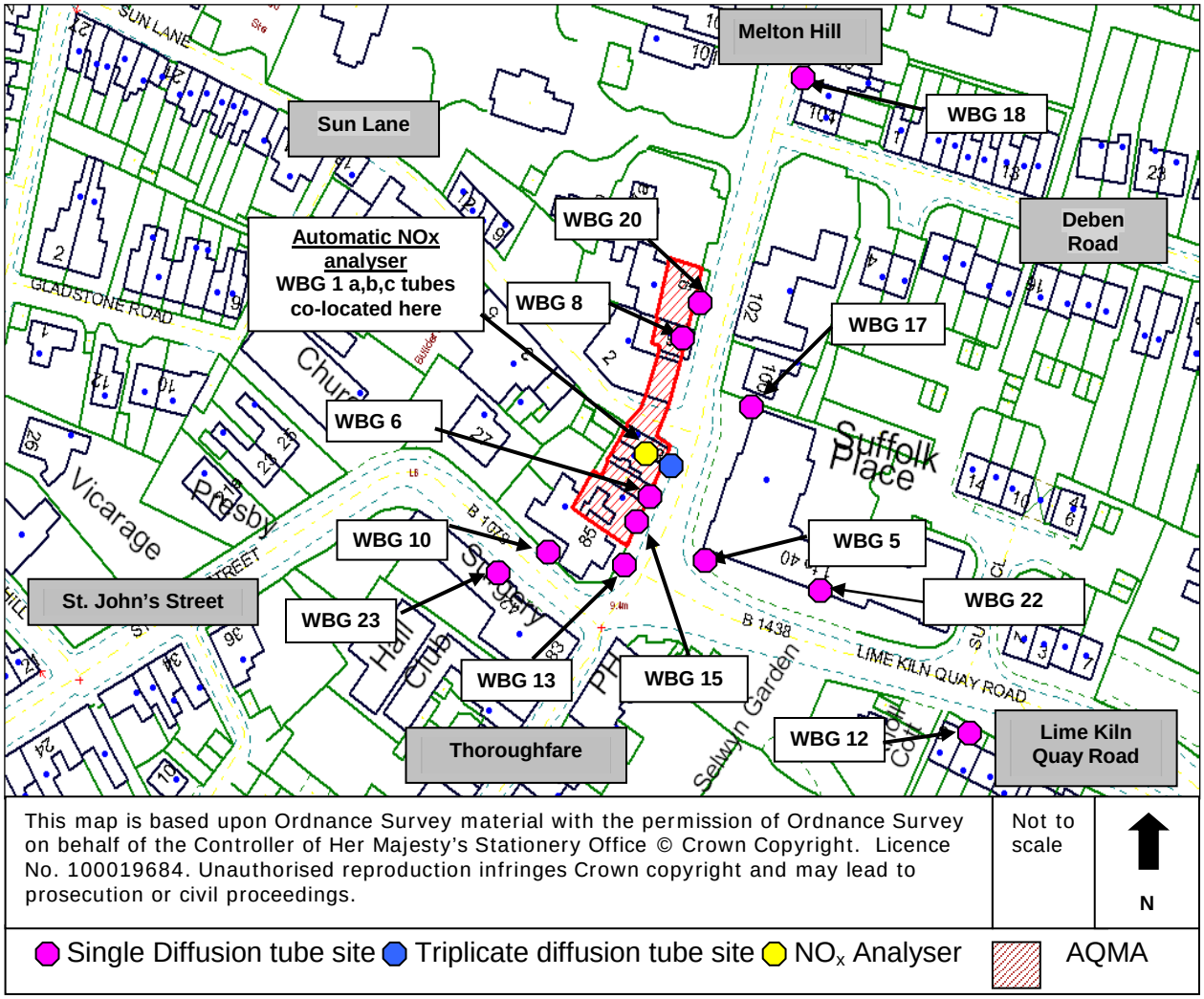
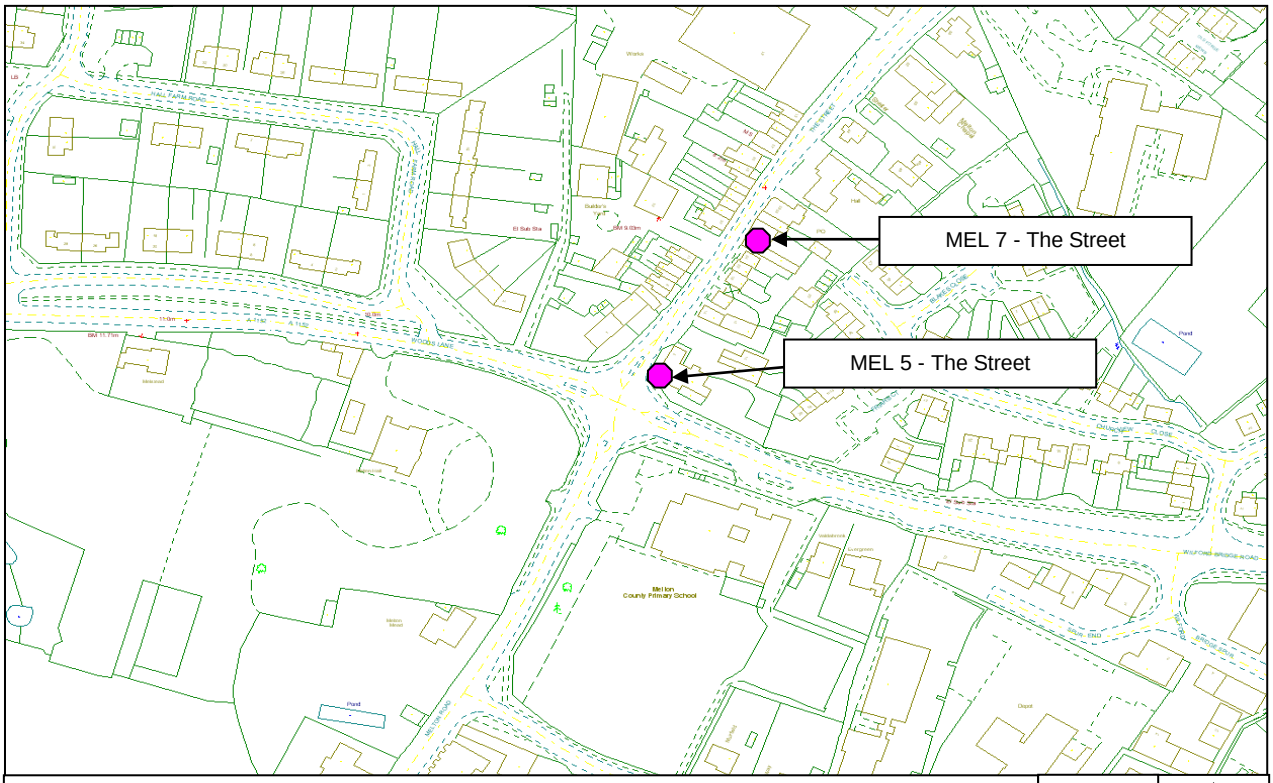
Single Diffusion tube site

Map 8 Map showing diffusion tube locations in and around the declared AQMA at the junction of Lime Kiln Quay Road, Thoroughfare and St. John's Street in Woodbridge



Melton Map

Map 9 Map showing location of the diffusion tubes at Melton



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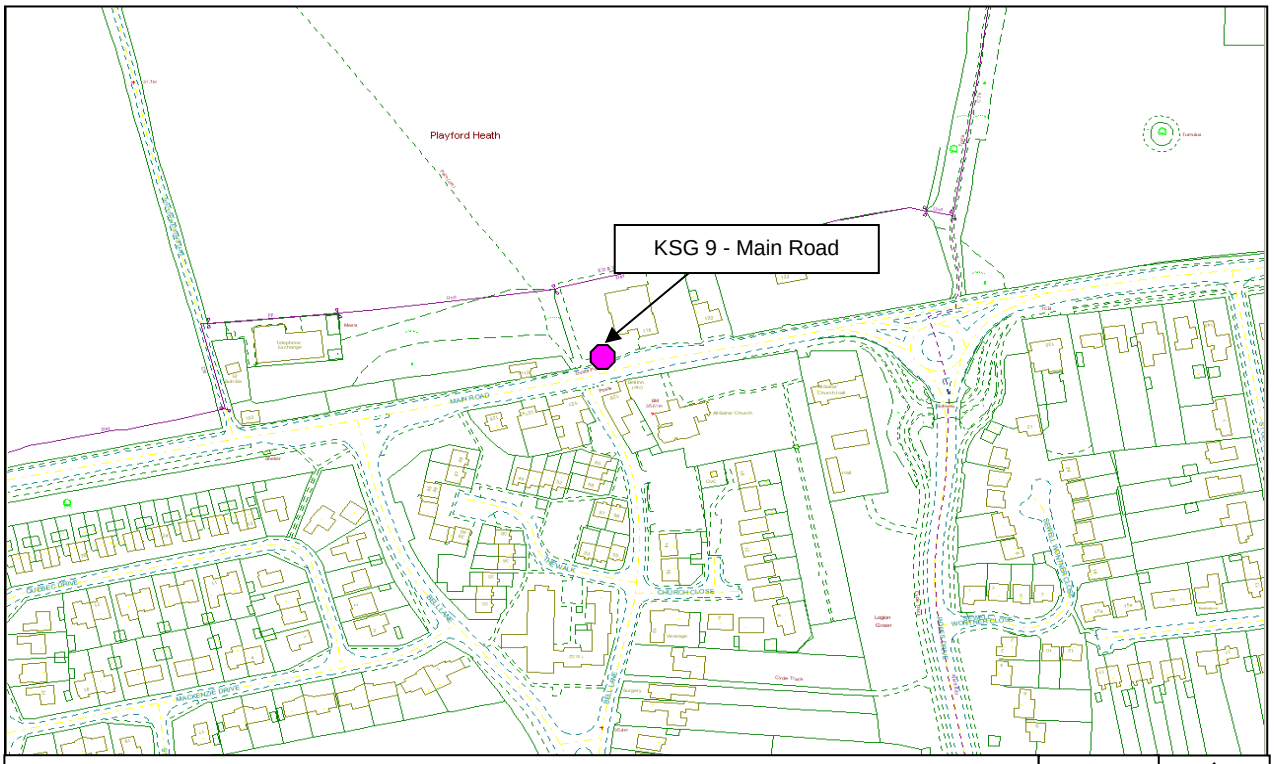
Single Diffusion tube site

Kesgrave Map

Map 10 Map showing location of the diffusion tube at Kesgrave



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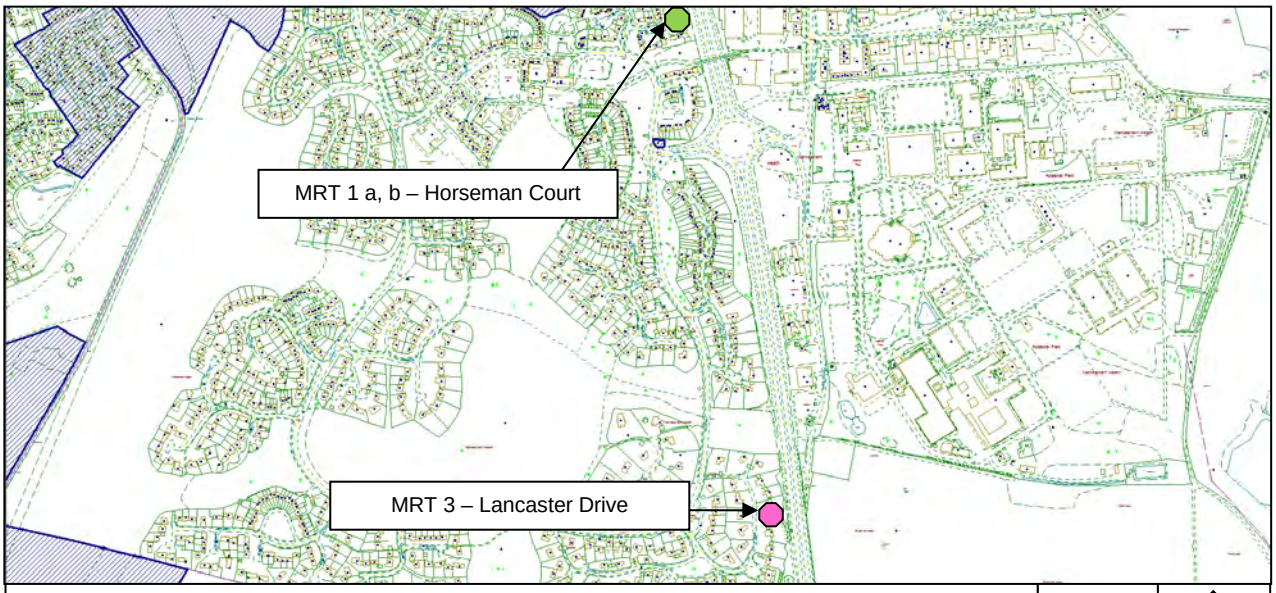
Single Diffusion tube site

Martlesham Map

Map 11 Map of diffusion tube location at Martlesham



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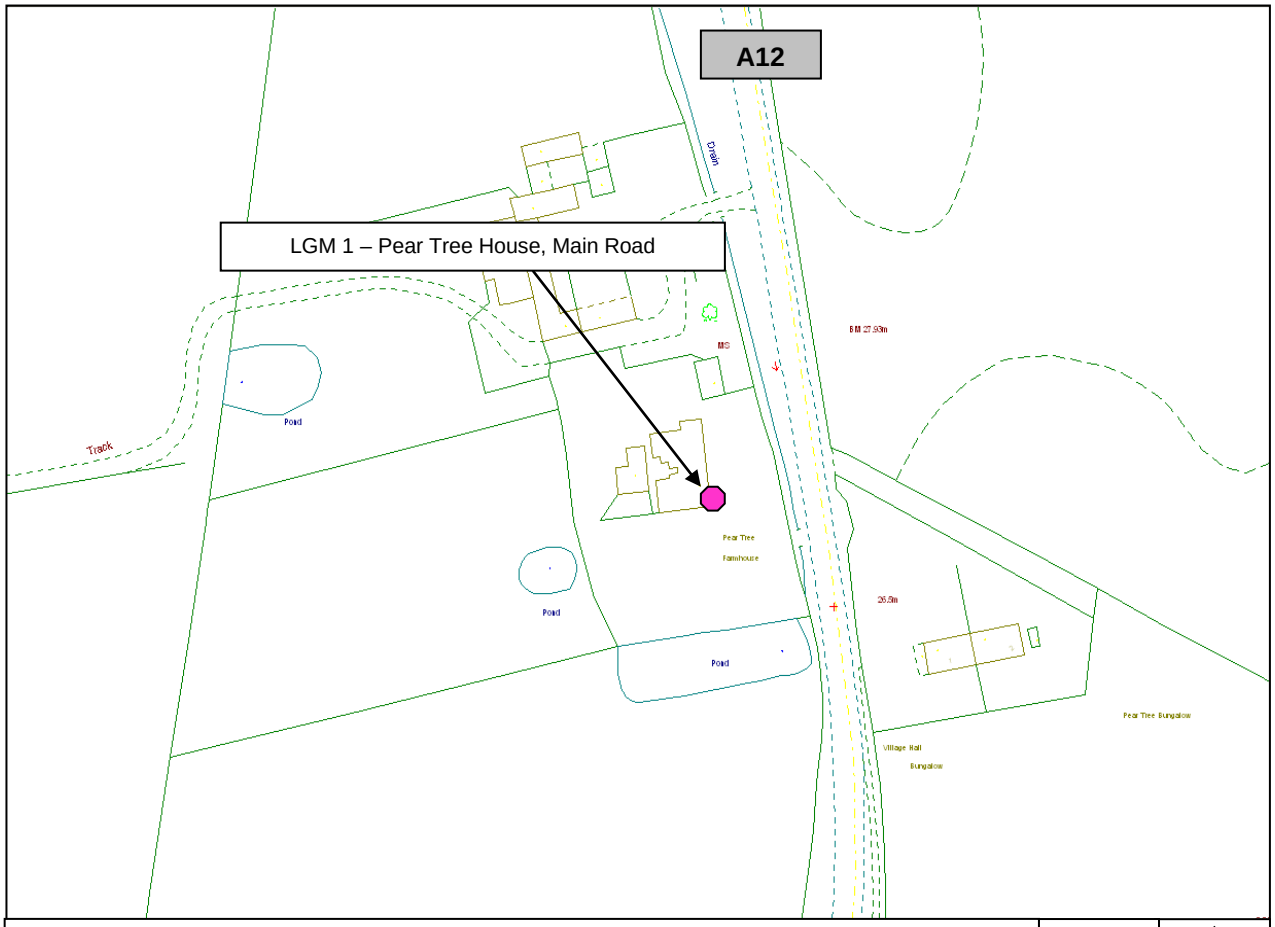
Duplicate diffusion tube site

Single Diffusion tube site

Little Glemham Map

Map 12 Map of diffusion tube locations at Little Glemham



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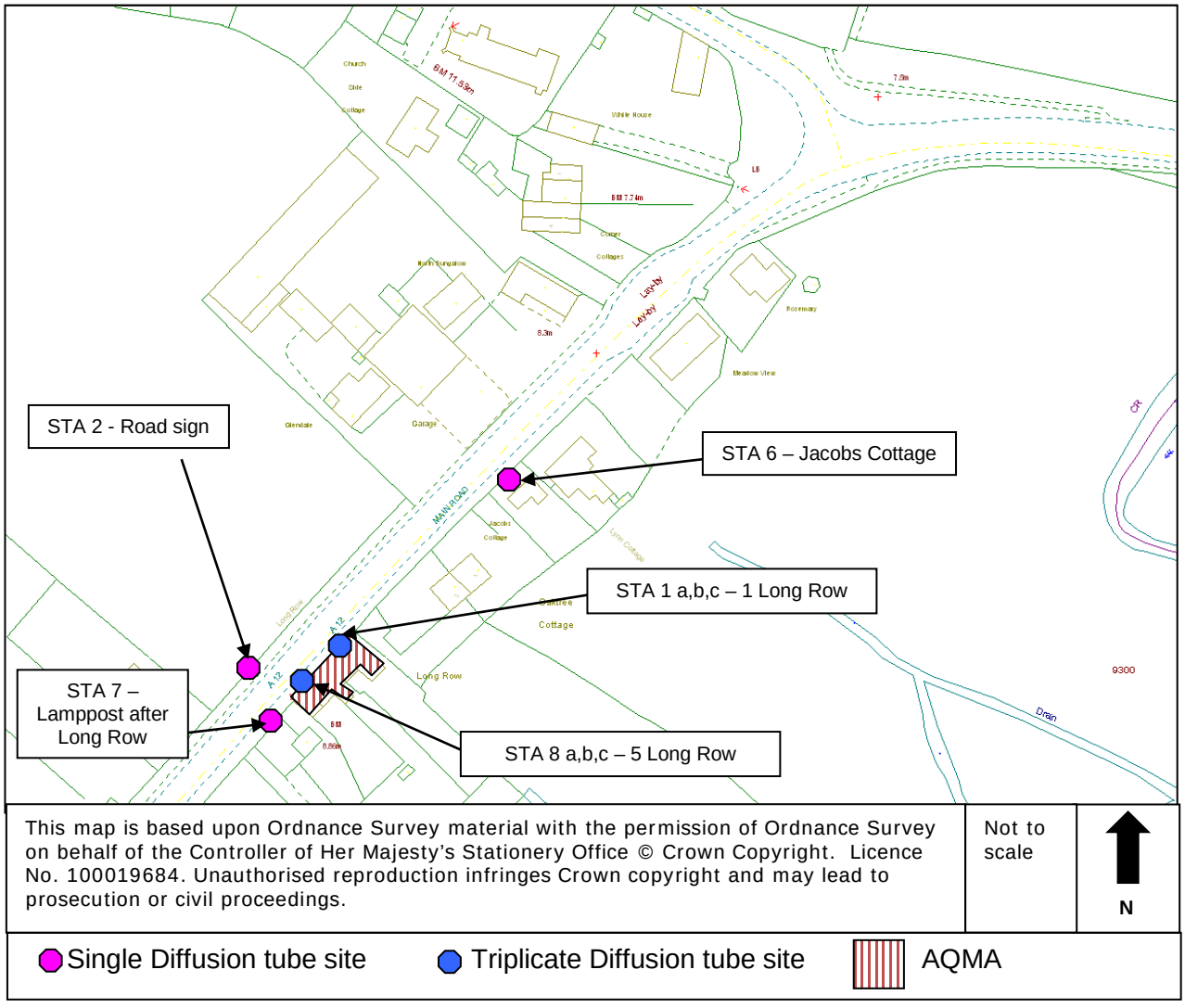
Single Diffusion tube site

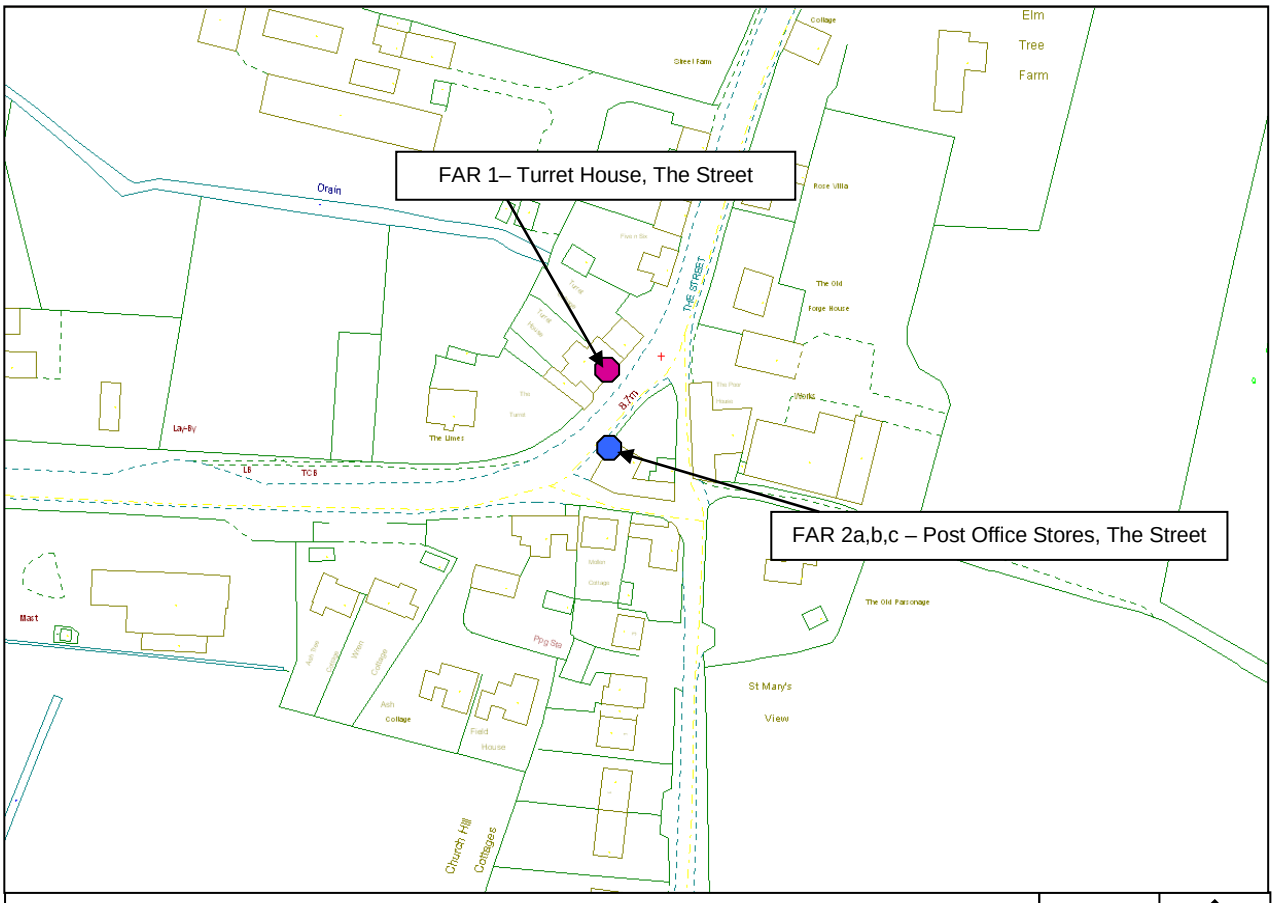
Stratford St Andrew Map

Map 13 Map showing diffusion tube locations and the AQMA at Stratford St Andrew



Farnham Map

Map 14 Map showing diffusion tube locations at Farnham



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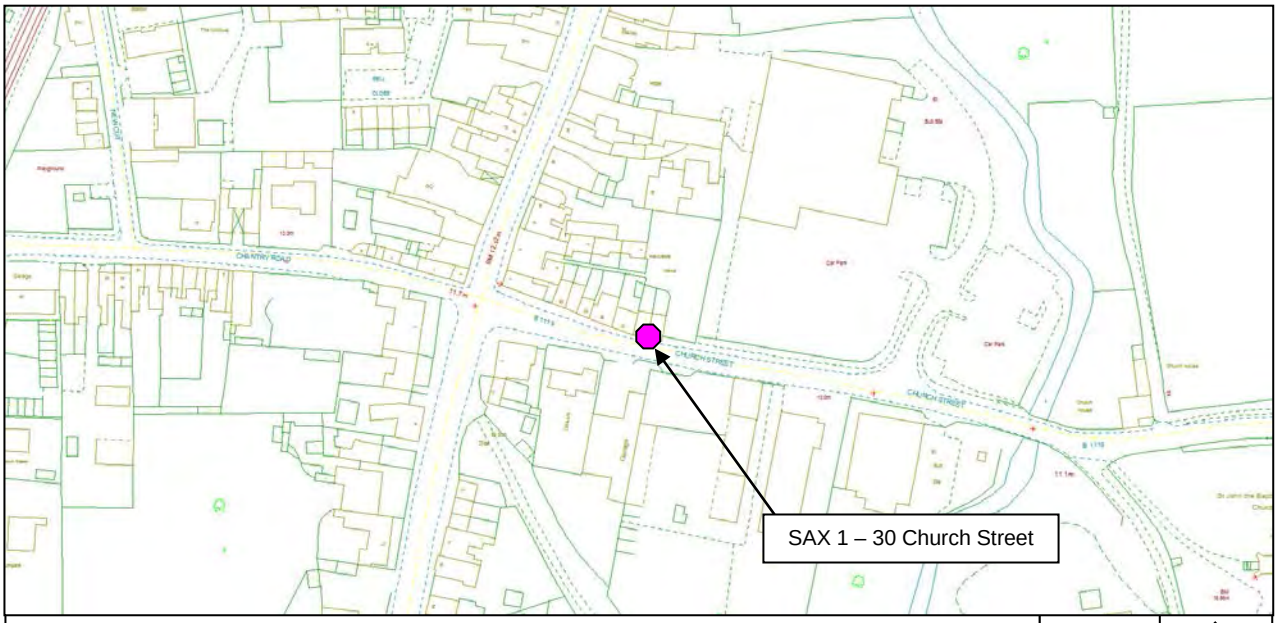
Triplicate Diffusion tube site

Single diffusion tube site

Saxmundham Map

Map 15 **Map showing diffusion tube location Church Street, Saxmundham**



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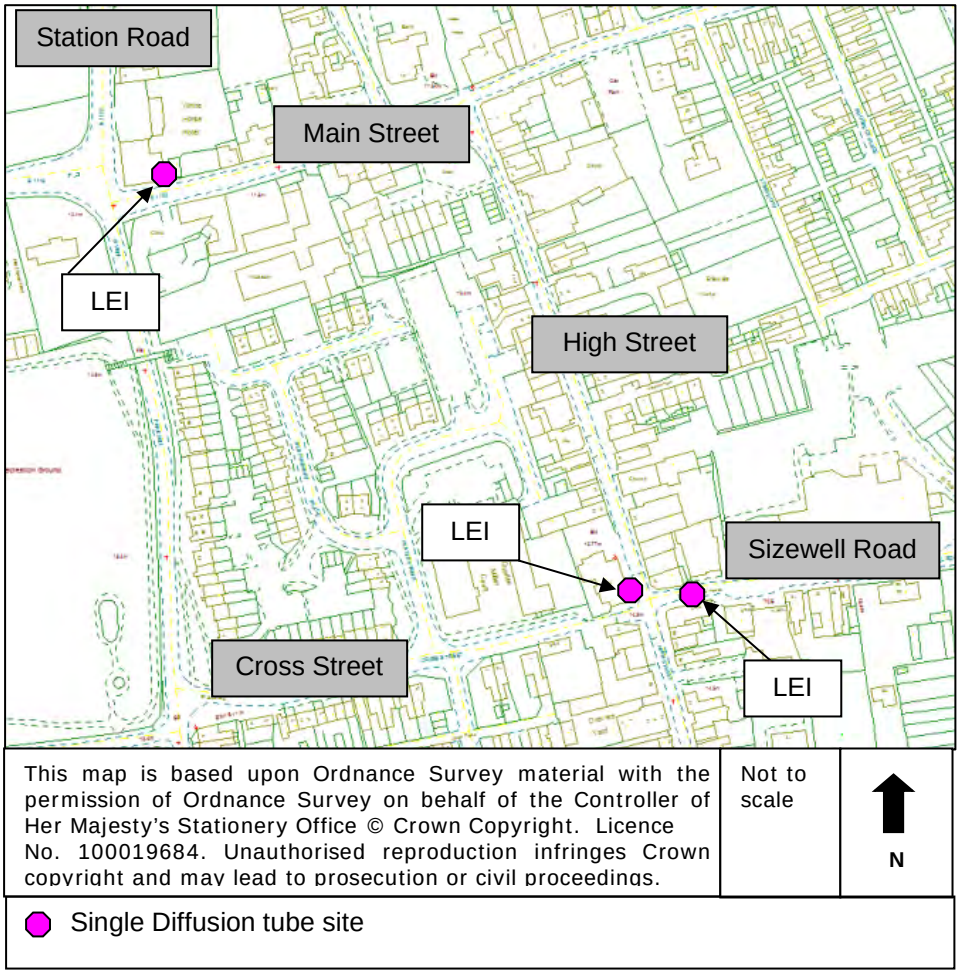
Single Diffusion tube site

Leiston Map

Map 16 Map showing diffusion tube locations in Cross Street, Sizewell Road and Station Road, Leiston



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[4]	
	Concentration	Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

[4] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
CIL	Community Infrastructure Levy
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EMS	Environmental Management System
EnMS	Energy Management System
EPUK	Environmental Protection UK
ERTG	Electric Rubber Tyre Gantry Crane
EU	European Union
FDMS	Filter Dynamics Measurement System
HGV	Heavy Goods Vehicle
IMV	Internal Movement Vehicle
LAQM	Local Air Quality Management
LTP	Local Transport Plan
MOVA	Microprocessor Optimised Vehicle Actuation
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides

PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
RTG	Rubber Tyre Gantry Cranes
SCC	Suffolk County Council
SCDC	Suffolk Coastal District Council
SO_2	Sulphur Dioxide
SPD	Supplementary Planning Document
TRO	Traffic Regulation Order
WDC	Waveney District Council

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