

## 2017 Air Quality Annual Status Report (ASR)

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

Date September 2017

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Report Reference number	ASR2/DP/17
Date	September 2017

## Executive Summary: Air Quality in Our Area

### Air Quality in Waveney

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<sup>1,2</sup>.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion<sup>3</sup>.

Recently Defra have carried out a review of Local Air Quality Management and as a consequence have made changes to guidance and the reporting obligation of UK local authorities.

The main changes introduced in Local Air Quality Management , Policy Guidance (PG16) 2016, result in a change of focus and emphasis is now placed on reporting actions taken to improve air quality with less of a monitoring role. The annual report on local air quality that local authorities are required to draft and submit to Defra for approval, will now have a greater focus placed on what is being done locally to improve air quality and in particular reducing exposure to PM<sub>2.5</sub>. The reason for the great concern about PM<sub>2.5</sub> is that “there is no evidence of a safe level of exposure to or a threshold below which no adverse health effects occur”<sup>1</sup>. The technical evidence shows that smaller particles are more closely associated with adverse health effects. Although there is no specific air quality objective in the National Strategy, the Government has set a target reduction value of 15% in the concentration of PM<sub>2.5</sub> at urban sites to be achieved by the end of the period 2010 – 2020.

Waveney District Council manages local air quality with these changes in mind by working in partnership with the following organisations;

Suffolk County Council;

Suffolk Coastal District Council;

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<sup>1</sup> Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

<sup>3</sup> Defra. Abatement cost guidance for valuing changes in air quality, May 2013

Highways England;

Public Health England: and any other relevant organisations, or potential partners.

Currently, Waveney District Council monitors the nitrogen dioxide concentration using diffusion tubes at a number of relevant receptors in the district of Waveney. Generally, the observed trend shows a reducing concentration over a number of years, however, there was a slight increase at some locations in 2016. A monitoring programme comprising of 4 triplicate sets of diffusion tubes located either side of the Lowestoft bascule bridge indicated an elevated level at one location, so passive sampling will continue here. There are no new major sources of emissions in the district of Waveney

Generally the air quality within the Waveney District is good and **none of the national air quality standards are exceeded**. However, there is a national concern about poor air quality and in particular, micro particulates, known as PM<sub>2.5</sub>'s and a challenging target has been set to reduce the local concentration by the year 2020.

## Actions to Improve Air Quality

Waveney District Council has been active with Suffolk County Council in securing funding for a third crossing of the Lake Lothing from Central Government. A third crossing would reduce traffic congestion at the Lowestoft bascule bridge and improve air quality at this location. Free flowing traffic is not so polluting in terms of emissions of pollutants, so that actions to reduce traffic will have a positive effect on local air quality. A detailed plan is now out for public consultation and it is hoped that construction work will begin in 2020 with a project completion date of 2022.

The Waveney District Council Planning and Development Team have recently produced a Cycle Strategy policy document and it is hoped that this will help remove some of the barriers preventing people from cycling more often and reduce the reliance on the car. The draft Local Plan is now out in the public domain for consultation and the influence of the Cycle Strategy policy document is apparent.

Suffolk County Council have organised two workshops with the Local planning authorities in Suffolk to agree & embed active travel into new developments through travel plans. A new draft travel plan guidance document is currently being worked on. Suffolk County Council will be delivering travel plan packs to residents at a new development in Blundeston.

Works by Net Work Rail, to reduce the rail crossing barrier down time in Bridge Road, Oulton Broad, are now complete and should help to relieve some of the congestion in this area.

Highways England have looked at a number of options to improve traffic flow in the area of the Bascule Bridge and concluded that the biggest improvement would come from putting **all** the Lowestoft traffic signals onto one Urban Traffic Management Control (UTMC) system. This should make it possible to set different signal timings to optimise traffic flow, not only at busy times, but to completely change the signal priorities when the Bascule Bridge lifts. This work is still ongoing and Suffolk County Council Highways have recently taken over the management of the traffic signalling function.

Work continues by Waveney District Council to secure funding for a separate cycle/pedestrian bridge over the Lake Lothing and the associated connecting infrastructure. Highways England constructed cycle schemes worth £1m in Lowestoft in 2016 and have a second phase of proposed improvements for cyclists programmed for 2017/18.

## **Conclusions and Priorities**

### **Local Priorities and Challenges**

The impact of an ambitious development programme will have to be monitored over the period of the life of the new Local Plan, which is currently out in the public domain for consultation. There has to be a balance when considering new development opportunities and those that are approved should not cause significant detriment to the local environment. Air quality has been a key factor in the appraisal of future development and policy options.

As funding has been agreed for a third crossing over the Lake Lothing, there will be a significant amount of work generated to ensure that the new bridge and infrastructure is not detrimental to air quality elsewhere in Lowestoft. It is expected that the impact on air quality will be positive in Central Lowestoft.

Concerns over poor air quality in the region of the Lowestoft Bascule Bridge caused by heavy traffic congestion remain and a monitoring programme using 4 triplicate sets of diffusion

tubes was started in October 2015. The results of this work have been recently reviewed and there were no exceedances of the National Air Quality Objectives in 2016, however, one set of tubes did indicate levels in the region of  $36 \mu\text{g}\text{m}^{-3}$ . Monitoring will need to continue in this area as traffic congestion continues to increase.

The work needs to continue to promote and encourage a cultural shift from the use of motor vehicles to alternative forms of transport. The Economic Development Team at Waveney Council will continue to seek out grant funding opportunities to finance cycling infrastructure improvements.

New working relationships with partner organisations and public bodies must be developed further to formulate cohesive strategies with view to improving air quality within the Waveney District.

### Local Engagement and How to get Involved

Waveney District Council is working to meet the challenge of meeting targets of reducing  $\text{PM}_{2.5}$  set by the Government, but it will also require a concerted public effort with each person doing their bit, by active travel planning and reducing the reliance on the motor car for travel. This will have other additional benefits as participants will be fitter and healthier by choosing to walk or cycle more regularly. Waveney District has produced a Cycle Strategy and this can be accessed via the East Suffolk Website. Cycling and walking are much cleaner, cheaper and healthier forms of travel, so there are a number of positive benefits. The Suffolk County Council Transport Plan estimates that 80% of people living within Lowestoft also work in the town which means that many journeys are short ([www.suffolk.gov.uk/roads-and-transport/public-transport-bus-pass-and-transport-planning/transport-planning-strategy-and-plans/](http://www.suffolk.gov.uk/roads-and-transport/public-transport-bus-pass-and-transport-planning/transport-planning-strategy-and-plans/)). The new East Suffolk air quality webpage, which is under construction will not only contain information about the quality of air in your area, but also provide you with practical information about adopting alternative modes of travel.

The [www.greensuffolk.org/travel/travel-plan-support/](http://www.greensuffolk.org/travel/travel-plan-support/) website gives advice on all aspects of the alternative greener travel options and free support is available to assist with travel plans and personal journey plans. You can obtain advice on safe cycling routes and general supportive information from [www.sustrans.org.uk/Cycle-Route-Maps/](http://www.sustrans.org.uk/Cycle-Route-Maps/), which is a charity devoted to promoting cycling as a healthier alternative form of transport. Suffolk County

Council regularly update Lowestoft & Beccles cycle maps which are distributed through tourist information points, libraries and through the SCC cycling pages

<https://www.suffolk.gov.uk/roads-and-transport/cycling/>.

Local Links helps Suffolk businesses, organisations and their employees to make cost effective and efficient trips promoting sustainable travel and information is available to view at <http://locallinks.onesuffolk.net/>

Support is also available for businesses in the form of Suffolk County Council grants through a Travel Plan Grant Scheme. The scheme will offer businesses up to 50% match funding towards the cost and installation of initiatives to support healthier and greener travel in the workplace. The grants have a maximum ceiling of £1000 and to apply download an application form at [www.greensuffolk.org/travel/travel-plan-support/business-support/](http://www.greensuffolk.org/travel/travel-plan-support/business-support/), In the past grants have been used to purchase pool bikes to cut down on short car journeys during the day and other facilities such as the creation of secure storage for bicycles.

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/](http://www.zap-map.com/live/) and the site also gives general information about owning electric cars. The Office for Low Emission Vehicles (OLEV) provide grants for the installation of domestic plugin-charging points and this results in a deduction from the price of the vehicle at the point of sale by the dealership. The Motor Fuels Group is committed to rolling out 400 rapid EV chargers across their public fuel station network.

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.

A simple action that could help local air quality is for motorists to switch off engines and avoid idling when stationary during a bridge lift at the Bascule Bridge in Lowestoft.

To make bus travel even better value for money, a number of operators have offered further discounts on purchasing tickets. To find out which bus operators serve your area see the useful information on <http://www.suffolkonboard.com>.

## **Waveney District Council**

For 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.uk-air.defra.gov.uk/>



# Table of Contents

<b>Executive Summary: Air Quality in Our Area.....</b>	<b>i</b>
Air Quality in Waveney District.....	i
Actions to Improve Air Quality.....	ii
Conclusions and Priorities.....	iii
Local Engagement and How to get Involved.....	iv
<b>1 Local Air Quality Management .....</b>	<b>1</b>
<b>2 Actions to Improve Air Quality .....</b>	<b>2</b>
2.1 Air Quality Management Areas.....	2
2.2 Progress and Impact of Measures to address Air Quality in Waveney District .....	3
2.3 PM <sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations .....	10
<b>3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance.....</b>	<b>13</b>
3.1 Summary of Monitoring Undertaken.....	13
3.1.1 Automatic Monitoring Sites .....	13
3.1.2 Non-Automatic Monitoring Sites .....	13
3.2 Individual Pollutants.....	13
3.2.1 Nitrogen Dioxide (NO <sub>2</sub> ) .....	14
3.2.2 Particulate Matter (PM <sub>10</sub> ) .....	14
3.2.3 Particulate Matter (PM <sub>2.5</sub> ) .....	14
3.2.4 Sulphur Dioxide (SO <sub>2</sub> ).....	14
<b>Appendix A: Monitoring Results.....</b>	<b>15</b>
<b>Appendix B: Full Monthly Diffusion Tube Results for 2016.....</b>	<b>20</b>
<b>Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC.....</b>	<b>24</b>
<b>Appendix D: Map(s) of Monitoring Locations and AQMAs .....</b>	<b>28</b>
<b>Appendix E: Summary of Air Quality Objectives in England.....</b>	<b>35</b>
<b>Glossary of Terms .....</b>	<b>36</b>
<b>References.....</b>	<b>37</b>

List of Tables

Table 2.1 – Progress on Measures to Improve Air Quality.....6

Table A.1 – Details of Non-Automatic Monitoring Sites.....15

Table A.2 – Annual Mean NO<sub>2</sub> Monitoring Results.....18

Table B.1 – NO<sub>2</sub> Monthly Diffusion Tube Results - 2016.....20

Table B.2 – NO<sub>2</sub> Monthly Diffusion Tube Results (Bascule Bridge) – 2015/2016 (Oct to Sept)..... 22

Table B.3 - Average Mean of the Triplicate Sets (distance corrected)..... 23

List of Figures

Figure A.1 – Trends in Annual Mean NO<sub>2</sub> Concentrations.....19

## 1 Local Air Quality Management

This report provides an overview of air quality in Waveney District during 2016. 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 Waveney 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.

Waveney District Council currently does not have any AQMAs. For reference, a map of Waveney District Council's monitoring locations is available in Appendix D.

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

Defra's appraisal of last year's ASR concluded with the following comments:

The Local Authority has no AQMA, and consequently there is no current air quality action plan. The report covers NO<sub>2</sub> monitoring data, and includes details of measures the Council is pursuing to address improvements in local air quality.

The report highlights there are no exceedences of the annual mean objective for nitrogen dioxide or any other regulated pollutant within the District.

On the basis of the evidence provided by the local authority the conclusions reached are acceptable for all sources and pollutants, with the provisos listed in the commentary below.

1. It is noted that the District Council are continuing to carry out routine monitoring with the use of passive diffusion tubes for nitrogen dioxide at 12 sites across the District, with results significantly below objective levels. A further 4 sites have been added as a short term assessment near Bascule Bridge, since October 2015, to address local concerns with regard to the impact of traffic congestion.
2. It is noted that monitoring results presented within Table A.2 are not generally representative of relevant exposure. On this basis, the results for these sites when presented for comparison to objective levels should be corrected for distance as detailed within the Technical Guidance LAQM TG(16).
3. We note that the Council has no formal requirement to develop an action plan, but has provided evidence of significant projects in the local region, in conjunction with Suffolk County Council, including a range of active travel alternatives that can expect to contribute to emissions reductions, these are welcomed.

Waveney 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..

An air quality monitoring programme has been retained, although Waveney District Council has not declared any Air Quality Management areas and monitoring has consistently indicated that there are no areas which are exceeding national air quality objectives.

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

- The new Waveney District Council Cycling Strategy was published and agreed in Cabinet in 2016. This important document will identified areas where the cycle network can be improved and will further promote cycling as a healthy and green mode of transport. This document is now in the public domain and is set to influence the new draft Local Plan which is currently out for public consultation.
- Air quality is incorporated into the joint Waveney and Suffolk Coastal District Councils Environmental Policy and this is the document that drives sustainable procurement guidance. As a result, the reduction of harmful emissions will be a consideration in the way the Council delivers its services.
- A large number of the measures taken forward in respect of promoting alternatives modes of transport and active travel are ongoing and the results of the various projects will be monitored where possible.
- The Public Consultation in connection with the Third Crossing over Lake Lothing is currently underway. Success in securing this project is likely to have a significant positive impact on air quality by relieving traffic congestion.

The Waveney District Council has a number of priorities for the coming year and these are detailed below.

- Address PM<sub>2.5</sub> by establishing a partnership and defining /defining roles with the Director of Public Health and Public Protection at Suffolk County Council and the Suffolk Health and Wellbeing Board because a coordinated and partnership approach

to reducing the local PM<sub>2.5</sub> concentration is likely to be more effective. This work is continuing.

- Continue air quality monitoring at locations around the district, although there are currently no exceedances of the National Air Quality Objectives for NO<sub>2</sub>.
- Continue the diffusion tube (triplicate) monitoring programme at the Bascule Bridge in Lowestoft with a single set and review the results.
- Where possible monitor and review the progress of the various projects outlined in Table 2.2.
- Conclude and finalise the design of an interesting and informative Council website page that supports the work of the Air Quality Officer and provides useful link addresses to the public.
- Assess significant new development planning applications for air quality impacts.
- Examine the possibilities of combining and producing a single air quality report with Suffolk Coastal District Council.
- Discuss and evaluate the pros and cons of producing an Air Quality Strategy for East Suffolk (Suffolk Coastal and Waveney District Councils), or a second option would be to participate with the Suffolk district authorities and produce a countywide document.

The principal challenges and barriers to implementation that Waveney District Council anticipates facing are those of funding.

The cycling infrastructure needs improvement which has been identified to increase connectivity across Lake Lothing and this is a key factor to reduce traffic congestion by reducing the reliance on cars. The Defra air quality grants are more targeted to areas with AQMA's, so the Waveney District Council Economic Development Team is exploring alternative funding channels.

Table 2.1 – 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
1	Proposed third vehicular crossing of Lake Lothing	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	Since 2010	Construction to start in 2020	New crossing which could result in a large reduction of congestion in Oulton Broad and the Lowestoft Town Centre	Still to be determined	Funding agreed	2022	Approximate costs in excess of £80million
2	Separate cycle and pedestrian crossing Lake Lothing	Promoting Travel Alternatives	Promotion of cycling	Waveney District Council	2014	?	More people encouraged to use cycling as a means of transport to and from work	Reduced vehicle emissions	Implementation ongoing	?	Important link to the cycle network/funding for related infrastructure is problematic
3	The Waveney District Council Local Plan	Policy Guidance and Development Control	Other policy	Waveney District Council Planning Department	2016	2018	Policies to promote alternative forms of travel	Reduced vehicle emissions	Public consultation	Date	Large and ambitious development plans in the Waveney District/ requires careful management.



Waveney District Council

4	Improvement works at Oulton Broad Station North	Traffic Management	UTC, Congestion management, traffic reduction	Network Rail		Late 2016	Reduce the down time' of the level crossing barriers and improve journey times for people using Bridge Road Oulton Broad	Reduction in traffic congestion	Works complete	2017	Nitrogen Dioxide concentration levels should reduce at the Golden Court monitoring position in Bridge road.
5	Reducing the pollutant emissions of the East Suffolk Councils during service delivery via the Joint Environmental Policy	Policy Guidance and Development Control	Sustainable Procurement Guidance	Waveney and Suffolk Coastal District Councils	2016	2017	Reduction in emissions to atmosphere	Air quality impacts considered when services or equipment including vehicles are purchased.	The plan document is in place	2017	5
6	The publication of the Waveney District Council Cycling Strategy	Promoting Travel Alternatives	Promotion of cycling	Waveney District Council	2015	2016	Promote and encourage cycling	Has identified barriers and gaps in the cycling infrastructure	The strategy has been formally adopted	ongoing	Infrastructure gaps identified but funding opportunities are problematic.

## Waveney District Council

7	Greener travel information available on the Suffolk County Council website	Promoting Travel Alternatives	Personalised Travel Planning	Suffolk County Council	N/A	Implemented	Number of visitors to the website	Reduction in vehicle journeys	Ongoing	ongoing	
8	Suffolk Travel Plan guidance	Promoting Travel Alternatives	Other	Suffolk County Council and the Suffolk District Council authorities	2016	2017	The implementation of effective travel plans and the management/enforcement of the plans to achieve good outcomes	Reduction in vehicle journeys	Draft document has been produced	2017	There has been no input from air quality specialists
9	Redesign and update the air quality page(s) on the East Suffolk website	Public Information	Via the Internet	Waveney DC and Suffolk Coastal DC	2017	2018	Number of visitors to the page	Difficult to judge	A structure has been designed	2018	The current situation is quite confusing, as the pages represents air quality for two separate LA's
10	East Suffolk Councils Home Working Policy	Promoting Travel Alternatives	Encourage / Facilitate home-working	Waveney District Council	Ongoing	Ongoing	Staff have an option of working from home	Numbers of staff work from home and this leads to a reduction in vehicle journeys	Policy in place	Ongoing	Policy in Place and the Councils continue to explore new technology options to allow staff to work from home.
11	Promotion of travel alternatives for the East Suffolk Councils staff	Promoting Travel Alternatives	Workplace Travel Planning	Waveney District Council	2015	2015	Council promotes cycling as a positive form of travel for its staff as part of its well - being programme	Reduction in vehicle journeys	Ongoing	Ongoing	Pool cycles have been provided for the staff to use.
12	Provision of EV charging points at the	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low	Waveney District Council	2012	2015	Four EV points installed	Reduce emissions	Ongoing	Ongoing	Electric vehicle are still too expensive to purchase.

Waveney District Council

	Riverside (Council Offices)		Emission Vehicles, EV recharging, Gas fuel recharging								
13	Suffolk Car Share	Alternatives to private vehicle use	Car & lift sharing schemes	Suffolk County Council		Implemented	Public take up	Reduction in vehicle journeys	Ongoing	Ongoing	Free web based contact database
14	Travel Planning advice and support	Promoting Travel Alternatives	Workplace Travel Planning	Suffolk County Council		Implemented	Take up by the public, business and schools	Reduction in vehicle journeys	Ongoing	Ongoing	
15	Suffolk Walking Strategy	Promoting Travel Alternatives	Promotion of walking	Suffolk County Council		2015	Reverse the trend of walking less 10% fall in walking between 2003 and 2012	Reduction in vehicle journeys	Ongoing	Ongoing	
16	Suffolk Walking Strategy	Promoting Travel Alternatives	Promotion of walking	Suffolk County Council		2015	Reverse the trend of walking less 10% fall in walking between 2003 and 2012	Reduction in vehicle journeys	Ongoing	Ongoing	
17	improvement works to the cycling infrastructure in Lowestoft	Transport Planning and Infrastructure	Cycle network	Highways England	2016	2016	£1m spent	Reduction in vehicle journeys	2018	2018	Second phase of the scheme of improvements for cyclists due in 2017/2018
18	Active travel events at key locations (Lowestoft MyGo)	Promoting Travel Alternatives	Promotion of cycling	Suffolk County Council	ongoing	ongoing	Promote and encourage active travel	Reduction in vehicle journeys	Ongoing	ongoing	

## 2.3 PM<sub>2.5</sub> – 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<sub>2.5</sub> (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM<sub>2.5</sub> has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

The Public Health Outcomes Framework (PHOF) air quality indicator for Waveney indicates that 5.18 percent of mortality in persons in the age range 30+ years is attributable to poor air quality. This can be compared to the East of England mortality rate of 5.5% for the same period ([www.phoutcomes.info/](http://www.phoutcomes.info/)).

Waveney District Council and partners are taking the following measures to address PM<sub>2.5</sub>:

The Suffolk Air Quality Group, of which Waveney 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<sub>2.5</sub>. 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.

The Environmental Protection Team have fed into the draft local plan options consultation seeking to control fugitive emissions of PM<sub>2.5</sub> from construction and demolition sites at the planning stage of developments by ensuring that developers use best practice and ensure that adequate air quality assessment is also provided when required.

Waveney District Council, working in partnership with Suffolk County Council and other potential partners, is committed to promoting alternative forms of transport and modes of travel such as cycling, walking, car sharing and public transport with the aim of reducing the reliance on private cars. Department of Transport statistics indicate that the take up of active travelling is mixed in Waveney with a fall in cycling as a mode of transport in the

period 2010 to 2014, but in contrast a significant increase occurred in walking (around 10%). Both the Waveney DC and Suffolk CC Cycling Strategies recognise the need for continued promotion of cycling and for greater improvements to the cycling infrastructure.

The Waveney District Council Cycle Strategy ([www.eastsuffolk.gov.uk](http://www.eastsuffolk.gov.uk)) has considered infrastructure issues and put forward potential improvements to the cycle network with the aim of encouraging more people to cycle and remove existing barriers. The document also provides supporting information about issues such as the design of development projects that should be taken into account when planning proposals are being prepared and determined. The document also discusses 'travel to work' data that 'shows the car to be dominant mode of transport to and from work in the District and accounts for 61% of Journeys. In Waveney, the proportion of commuter journeys completed by bike is 6.1% which is one third higher than the Country average of 3.9% and double the national average of 2.9%' It is also worth noting that 10.2% of journeys in Waveney were made on foot. Many of the trips to work are short and could easily be achieved by bike or by walking. Both traffic count figures and census data for Suffolk indicate that the number of cyclists using busy roads is falling and people are commuting to work less by cycling (Waveney Cycling Strategy 2016).

The measures listed in table 2.2 should impact positively in reducing emissions by promoting a change in travel culture and providing advice, support and the necessary infrastructure to encourage the use of other means of transport rather than the car. It is expected that all of the measures should have a positive impact on the PM<sub>2.5</sub> concentration in the Waveney District by varying degrees.

Both the Individualised Travel Marketing Project and the Lowestoft Local Links workplace engagement project ([www.greensuffolk.org/travel/lowestoft](http://www.greensuffolk.org/travel/lowestoft)) appear to have been successful and the impact may be greater with the improvement of the cycling network infrastructure. The legacy of the Lowestoft Local Links workplace engagement project is to be followed up and Suffolk County Council has scheduled funding to complete this work.

The promotion of active travel in the form of cycling and walking within the District has wider benefits and has strong links to the Public Health Outcomes Framework in terms of improving the health and wellbeing of the population, as well as improving the local air quality.

## **Waveney District Council**

The dedicated air quality page on the East Suffolk Website will provide information and encouragement to members of the public who are interested in 'doing their bit' in improving air quality and sign post people to other links.

No monitoring for PM<sub>2.5</sub> is programmed for Waveney currently, unless a substantial source of pollution is identified that requires a detailed assessment.

## 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

Waveney District Council has not undertaken any automatic (continuous) monitoring at any sites during the last year.

#### 3.1.2 Non-Automatic Monitoring Sites

Waveney District Council undertook non- automatic (passive) monitoring of NO<sub>2</sub> at 12 sites during 2015 and a further 4 sites near the bascule Bridge have been monitored since October 2015.

Table A.3 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 and bias adjustment and any other adjustments applied (e. g. “annualisation” and/or distance correction), are included in Appendix C.

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

### 3.2 Individual Pollutants

Waveney District does not do any monitoring for pollutants other than nitrogen dioxide.

Trend data has been included in this report using data from previous years monitoring and presented in graph form in Appendix A. The noticeable trend is that nitrogen dioxide concentration levels have been stable at most locations over the past five years, with measured levels well below the national objectives.

The air quality monitoring results presented in this section is adjusted for bias and, where relevant a distance correction is made to assess relevant public exposure.

Details of adjustments are provided in Appendix C.

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

There are no measured exceedances of the air quality objectives in the Waveney District.

The greatest measured concentration was 36µg/m<sup>3</sup> obtained near the Lowestoft Bascule Bridge and this was the mean average of a triplicate set of tubes. Table A.4 in Appendix A compares the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past 5 years with the air quality objective of 40µg/m<sup>3</sup>.

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

### 3.2.2 Particulate Matter (PM<sub>10</sub>)

Waveney District Council does not carry out any monitoring for PM<sub>10</sub>

### 3.2.3 Particulate Matter (PM<sub>2.5</sub>)

Waveney District Council does not carry out any monitoring for PM<sub>2.5</sub>

### 3.2.4 Sulphur Dioxide (SO<sub>2</sub>)

Waveney District Council does not carry out any monitoring for SO<sub>2</sub>



## Appendix A: Monitoring Results

Table A.3 – 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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?	Height (m)
DT1	Castleton Avenue	Roadside	650608	290476	NO <sub>2</sub>	NO	17	1.9	NO	3
DT2	Fir Lane	Roadside	653220	293794	NO <sub>2</sub>	NO	6	0.5	NO	2.9
DT3	Dutchmans Court	Roadside	651885	292105	NO <sub>2</sub>	NO	5	2.4	NO	2.4
DT4	Golden Court	Roadside	652242	292955	NO <sub>2</sub>	NO	4	2	NO	2.4
DT5	Saltwater Way	Roadside	652498	292751	NO <sub>2</sub>	NO	6	3	NO	2.4
DT6	Yarmouth Road	Roadside	653049	295534	NO <sub>2</sub>	NO	8.8	0.5	NO	2.4
DT7	Mill Road	Roadside	654470	292395	NO <sub>2</sub>	NO	6.8	1.2	NO	2.4
DT8	St Margarets Church	Urban Background	654305	293914	NO <sub>2</sub>	NO	N	N	NO	2.4
DT9	Belvedere Road 1	Roadside	654651	292619	NO <sub>2</sub>	NO	N	1	NO	2
DT10	Belvedere Road 2	Roadside	654651	292619	NO <sub>2</sub>	NO	N	1	NO	2
DT11	Pier Terrace 1	Roadside	654658	292598	NO <sub>2</sub>	NO	7	3	NO	2.4
DT12	Pier Terrace 2	Roadside	654658	292598	NO <sub>2</sub>	NO	0	11	NO	2.4
DT13	Trinity Street	Roadside	633661	289813	NO <sub>2</sub>	NO	0	1	NO	2.2
DT14	Ingate, Beccles	Roadside	642614	289906	NO <sub>2</sub>	NO	0	1	NO	2.4
DT15	Ingate, Beccles	Roadside	642614	289906	NO <sub>2</sub>	NO	4	2	NO	2.4
PT1(a)	Pier Terrace	Roadside	654788	292824	NO <sub>2</sub>	NO	0.5	3	NO	2.2
PT2(a)	Pier Terrace	Roadside	654781	292814	NO <sub>2</sub>	NO	0.2	4	NO	2.2
PT3(a)	Pier Terrace	Roadside	654703	292636	NO <sub>2</sub>	NO	0.5	2.5	NO	2.2
PT4(a)	Pier Terrace	Roadside	654685	292621	NO <sub>2</sub>	NO	0	4	NO	2.2

**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.

PT1 – PT4 are triplicate sets located around the Lowestoft Bascule Bridge.

Table A.4 – Annual Mean NO<sub>2</sub> Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2016 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
					2012	2013	2014	2015	2016
DT1	Roadside	Diffusion Tube	n/a	83	15.7	16.2	15.2	14.8	15.2
DT2	Roadside	Diffusion Tube	n/a	100	20.1	19.5	19.4	17.5	18.1
DT3	Roadside	Diffusion Tube	n/a	100	21.7	21.7	22.8	19.2	21.9
DT4	Roadside	Diffusion Tube	n/a	100	27.3	29.4	27.7	23.1	24.5
DT5	Roadside	Diffusion Tube	n/a	100	24.2	25.6	21.8	23.4	24.1
DT6	Roadside	Diffusion Tube	n/a	100	16.8	17.8	18.2	14.6	14.5
DT7	Roadside	Diffusion Tube	n/a	100	20.9	19.6	18.7	17.6	18.1
DT8	Urban Background	Diffusion Tube	n/a	100	16.3	16.5	16.5	12.3	15
DT9	Roadside	Diffusion Tube	n/a	92	29.2	24	29.3	31.1	28.5
DT10	Roadside	Diffusion Tube	n/a	92	30	25.7	31.2	29.5	29.3
DT11	Roadside	Diffusion Tube	n/a	100	30.8	35.3	29.9	24.8	27.2
DT12	Roadside	Diffusion Tube	n/a	100	25.8	26	25.2	24.7	27
DT13	Roadside	Diffusion Tube	n/a	83		31.4	29.5	27.8	28.9
DT14	Roadside	Diffusion Tube	n/a	92	31.2	32.3	31.6	28.4	27.2
DT15	Roadside	Diffusion Tube	n/a	92	25.1	33.2	23.9	23.5	25.3
PT1(a)	Roadside	Diffusion Tube	n/a	100					28.2
PT2(a)	Roadside	Diffusion Tube	n/a	100					26.6
PT3(a)	Roadside	Diffusion Tube	n/a	100					31.9
PT4(a)	Roadside	Diffusion Tube	n/a	100					35.8

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<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

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

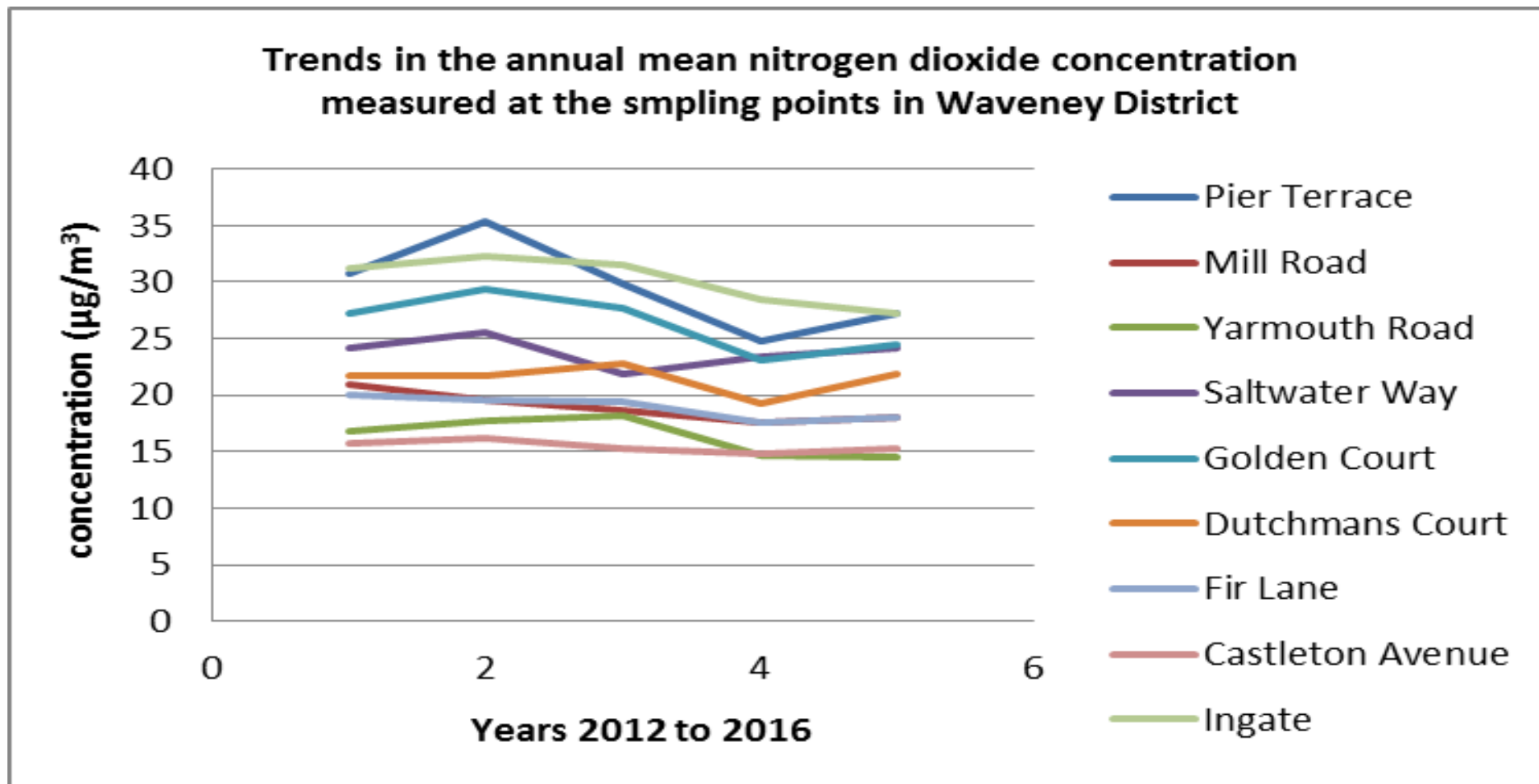
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(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.

**Note: PT1(a) – PT4(a) are triplicate sets.**

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



## Appendix B: Full Monthly Diffusion Tube Results for 2016

Table B.1 – NO<sub>2</sub> Monthly Diffusion Tube Results - 2016

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )													Annual Mean		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.78) and Annualised <sup>(1)</sup>	Distance Corrected to Nearest Exposure <sup>(2)</sup>	
DT1	25.1	27.9	29.3	22.9		19.7	19.2	19.6	39.5	29.9		32.0	26.5	20.7	15.2	
DT2	23.9	33.6	29.7	19.8	28.6	25.9	28.5	26.4	32.5	28.1	38.6	42.8	29.9	23.3	18.1	
DT3	34.2	40.4	30.8	25.6	30.4	27.9	24.5	24.9	32.3	31.6	33.2	38.5	31.2	24.3	21.9	
DT4	29.0	35.5	41.9	33.5	48.5	34.2	31.6	30.4	33.5	36.6	33.7	41.5	35.8	27.9	24.5	
DT5	39.0	27.9	38.8	29.6	32.1	26.6	27.6	31.8	36.7	33.7	40.4	46.3	34.2	26.7	24.1	
DT6	23.4	21.8	27.6	23.6	28.9	18.7	22.6	30.4	22.2	27.4	25.3	23.8	24.6	19.2	14.5	
DT7	23.6	26.9	28.0	22.8	33.1	21.3	20.3	22.8	25.4	31.3	28.0	34.7	26.5	20.7	18.1	
DT8	20.7	14.8	19.8	15.5	18.4	12.9	15.7	13.4	18.1	19.0	23.9	38.5	19.2	15.0	15	
DT9	50.4	42.7	42.2	35.1	35.8	32.2	33.3	31.4	22.9	31.9		44.7	36.6	28.5	28.5	
DT10	42.3	34.6	37.5	29.8	38.1	28.1	32.9	32.0	37.7		50.9	49.3	37.6	29.3	29.3	
DT11	29.8	29.4	36.8	45.8	43.5	30.4	36.1	45.0	44.6	51.6	36.2	48.4	39.8	31.0	27.2	
DT12	41.1	43.7	44.0	33.4	32.4	22.0	27.9	29.5	28.3	34.7	37.0	42.3	34.7	27.0	27	
DT13	36.1	41.5			39.6	26.7	28.8	35.0	34.9	38.3	42.3	46.9	37.0	28.9	28.9	
DT14	20.2	36.3	40.9	35.8	40.1	30.9	34.4	30.4	28.9	34.2	37.1	48.6	34.8	27.2	27.2	
DT15	35.5	37.7	33.3	32.3	33.9	28.4	31.2	35.1	40.9	44.6		43.4	36.0	28.1	25.3	
PT1	39.5	42.5	41	38.8	40.7	31.1	34.5	32	37							
PT2	39.8	43.6	37.5	36.6	41	31.1	33.1	30.9	37.4							
PT3	41.7	44.3	38.9	40.3	38.5	32.5	31.8	31.2	37							
PT4	34.4	35.7	44	37.2	40.2	31.9	32.8	28	32.7							

**Waveney District Council**

PT5	25	36.4	38.3	35.1	44.4	29.4	32.4	28.9	33.5						
PT6	36.7	38.4	38.6	35	46.1	31.3	28	30.6	35.6						
PT7	39.3	41.3	48.1	37.3	51	32.7	1.5	76.5	46.6						
PT8	42.9	39.4	42.8	42.4	50.6	37.9	33.7	38.7	42.9						
PT9	37.9	44.7	43.8	48.3	51.3	39.9	37.4	41.2	42						
PT10	31.1	54.8	38.8	51.5	58.6	37.8	42.6	47.9	45.4						
PT11	39.3	57.9	55.6	54.1	62	42.4	41.9	42.1	46.7						
PT12	44.2	53.7	52.8	51.5	63.2	44.2	40.3	46.9	49.4						

- Local bias adjustment factor used
- National bias adjustment factor used
- Annualisation has been conducted where data capture is <75%

**Notes:**

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

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

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

(2) Distance corrected to nearest relevant public exposure.

Please note that PT1 – PT12 were organised as triplicate sets and therefore an average mean of each set was used to determine the concentration at the relevant receptor. The programme of PT1 – PT12 sampling commenced in October 2015 and finished in September 2016 with a full year of monitoring data. The complete set of raw data for the monitoring Programme can be found below in table B.2. The greatest concentration was found at the location of triplicate set PT4(a) which was directly attached to the façade of a receptor.

Table B.2 – NO<sub>2</sub> Monthly Diffusion Tube Results ( Bascule Bridge) – 2015/2016 (Oct to Sept)

Site ID	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )												Annual Mean		
	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Raw Data	Bias Adjusted (0.78) and Annualised <sup>(1)</sup>	Distance Corrected to Nearest Exposure <sup>(2)</sup>
PT1	35.1	35.9	33.6	39.5	42.5	41	38.8	40.7	31.1	34.5	32	37	36.8	28.7	28.1
PT2	38.6	27.2	30.6	39.8	43.6	37.5	36.6	41	31.1	33.1	30.9	37.4	35.6	28.0	27.4
PT3	40	23.4	32	41.7	44.3	38.9	40.3	38.5	32.5	31.8	31.2	37	35.9	28.0	27.4
PT4	42.4	32.2	26.7	34.4	35.7	44	37.2	40.2	31.9	32.8	28	32.7	34.8	27.0	26.8
PT5	40	26.7	24.9	25	36.4	38.3	35.1	44.4	29.4	32.4	28.9	33.5	32.9	25.6	25.5
PT6	38.8	32.5	28.8	36.7	38.4	38.6	35	46.1	31.3	28	30.6	35.6	35.0	27.3	27.1
PT7	43.5	46.7		39.3	41.3	48.1	37.3	51	32.7	1.5	76.5	46.6	42.2	32.9	32.0
PT8	43.6	34	28.2	42.9	39.4	42.8	42.4	50.6	37.9	33.7	38.7	42.9	39.7	31.0	30.2
PT9	47.3	26.1	30.2	37.9	44.7	43.8	48.3	51.3	39.9	37.4	41.2	42	40.8	31.8	30.9
PT10	50.5	35.9	31.4	31.1	54.8	38.8	51.5	58.6	37.8	42.6	47.9	45.4	43.8	34.2	34.2
PT11	54.1	34.2	26.6	39.3	57.9	55.6	54.1	62	42.4	41.9	42.1	46.7	46.4	36.2	36.2
PT12	53.2	39.6	30.4	44.2	53.7	52.8	51.5	63.2	44.2	40.3	46.9	49.4	47.4	37.0	37.0

- Local bias adjustment factor used
- National bias adjustment factor used
- Annualisation has been conducted where data capture is <75%



**Table B.3 - Average Mean of the Triplicate Sets (distance corrected)**

				Average mean
1	28.1	28.4	27.4	27.9
2	26.8	25.5	27.1	26.4
3	32.0	30.2	30.9	31.0
4	34.2	36.2	37.0	35.8

Tubes PT1-PT3 are identified as PT1(a)

Tubes PT4-PT6 are identified as PT2(a)

Tubes PT7-PT9 are identified as PT3(a)

Tubes PT10-PT12 are identified as PT4(a)

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

No significant changes to sources have occurred since the Updating and Screening Assessment was submitted in 2015.

In October 2015, four triplicate sets of diffusion tubes were positioned at the Bascule Bridge in the Lowestoft Town Centre, for a monitoring period of twelve months. It is now time to report back on the results in this report.

Diffusion tubes are particularly useful:

- when simple, indicative techniques will suffice;
- to give an indication of longer-term average NO<sub>2</sub> concentrations;
- for indicative comparison with the Air Quality Strategy Objectives based on the annual mean;
- for highlighting areas of high NO<sub>2</sub> concentration; and
- where installation of an automatic analyser is not feasible

They are useful for identifying areas of high NO<sub>2</sub> concentration, particularly when dealing with sources such as traffic emissions, which do not change much from day to day.

### **Factor from Local Co-location Studies (if available)**

Waveney District Council did not undertake a local co-location study.

### **Diffusion Tube Bias Adjustment Factors**

Waveney District Council has used the national bias adjustment factor of 0.78, spreadsheet version 06/16, available on the LAQM website. The factor of 0.78 was obtained from the results of a sample of 26 separate studies of ESG Scientifics, Didcot.

### **QA/QC of Automatic Monitoring**

No longer applicable, as the automatic continuous air quality located in Belvedere Road, Lowestoft was decommissioned by Suffolk County Council in 2012..

**QA/QC of Diffusion Tube Monitoring**

The diffusion tubes used in Waveney District Council are supplied and analysed by ESG Scientifics at Didcot. The tubes were prepared by spiking acetone:triethanolamine (50:50) into the grids prior to the tubes being assembled. The tubes were desorbed with distilled water and the extract analysed using a segmented flow auto-analyser with ultraviolet detection. The samples were analysed in accordance with ESG Scientifics standard operating procedure ANU/SOP/1015 issue 1, which meets the guidelines set out in DEFRA's 'Diffusion Tubes For Ambient no2 Monitoring practical Guidance' .

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

Please note that the reported results are not bias adjusted by ESG Scientifics.

The diffusion tubes are stored and installed by Waveney District Council in accordance with the "NO<sub>2</sub> Diffusion Tubes for LAQM:Guidance Note for Local Authorities"

**Summary of Laboratory Performance in AIR/WASP NO<sub>2</sub> Proficiency Testing Scheme (April 2015 – February 2017).**

Reports are prepared by HSL for BV/NPL on behalf of Defra and the Devolved Administrations.

**Background**

AIR is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL). AIR PT is a new scheme, started in April 2014, which combines two long running PT schemes: LGC Standards STACKS PT scheme and the HSL WASP PT scheme.

AIR offers a number of test samples designed to test the proficiency of laboratories, undertaking analysis of chemical pollutants in ambient indoor, stack and workplace air. One such sample is the AIR NO<sub>2</sub> test sample type, which is distributed to participants on a quarterly basis.

AIR NO2 PT forms an integral part of the UK NO2 Network's QA/QC, and is a useful tool in assessing the analytical performance of those laboratories supplying diffusion tubes to Local Authorities for use in the context of Local Air Quality Management (LAQM).

With consent from the participating laboratories, LGC Standards provides summary proficiency testing data to the LAQM Helpdesk for hosting on the webpages, at <http://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html>.

This information is updated on a quarterly basis following completion of each AIR PT round.

ESG Scientifics, at Didcot achieved a score of satisfactory with good precision during 2016.

Method used to predict NO<sub>2</sub> Concentrations at Different Distances from the Road

The monitoring sites are 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 because of practical reasons and in most cases the relevant public exposure is located a short distance away. The calculator described in LAQM. TG(09) has been used to predict concentrations at the nearest point of relevant public exposure. Results derived in this way will have a greater uncertainty than measured data and this uncertainty increases as the distance between the measuring location and relevant receptor grows larger.

The calculator as a spreadsheet is available on <http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html>

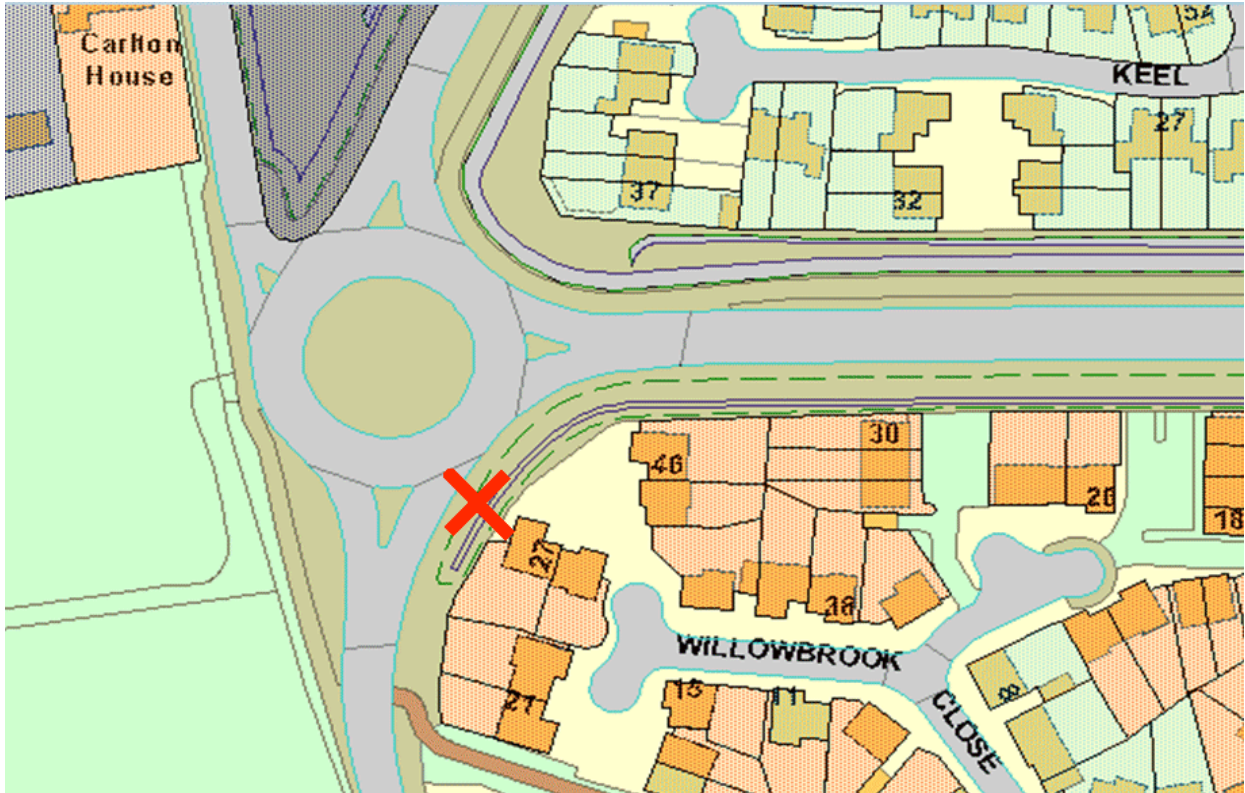
The local background concentration in µg/m<sup>3</sup> of the appropriate year (2016) has been obtained from the national maps published at <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2013>

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

Waveney DC does not have an AQMA within its district.

The maps included show the diffusion tube monitoring locations in Waveney District.

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



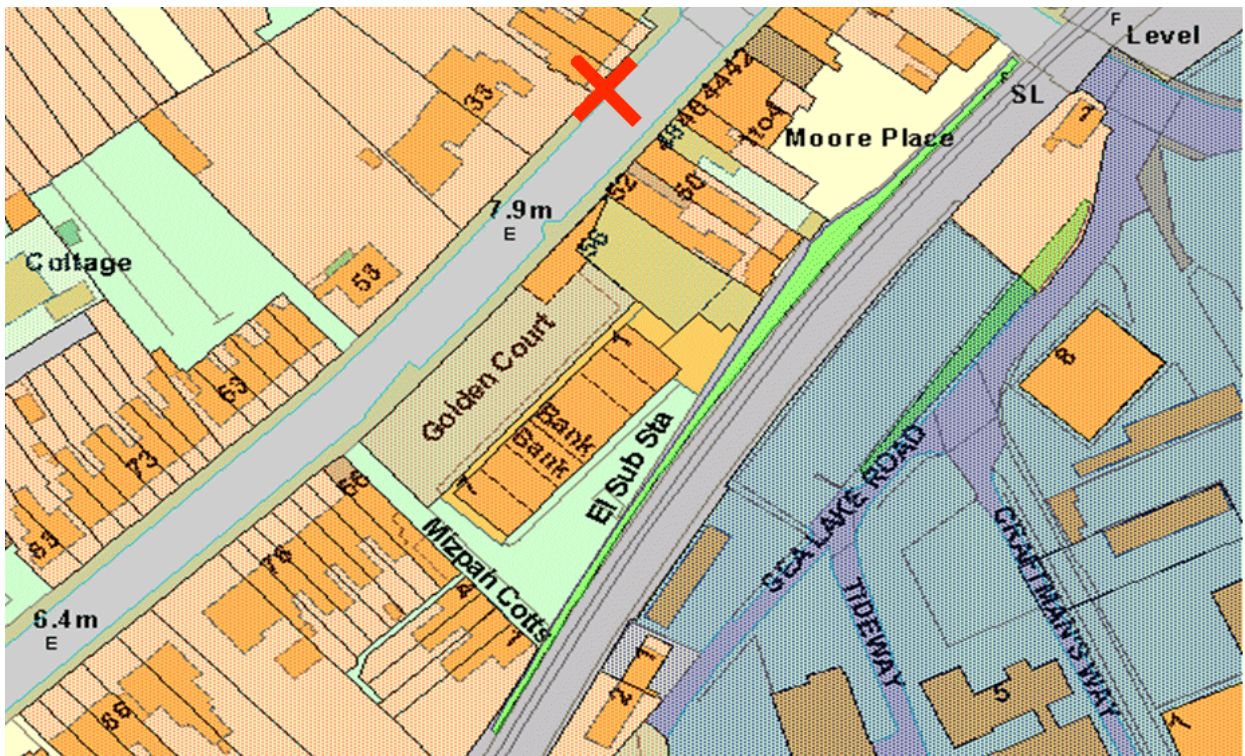
Diffusion Tube Site DT1: Castleton Avenue, Carlton Colville



Diffusion Tube Site DT2: Fir Lane, Lowestoft

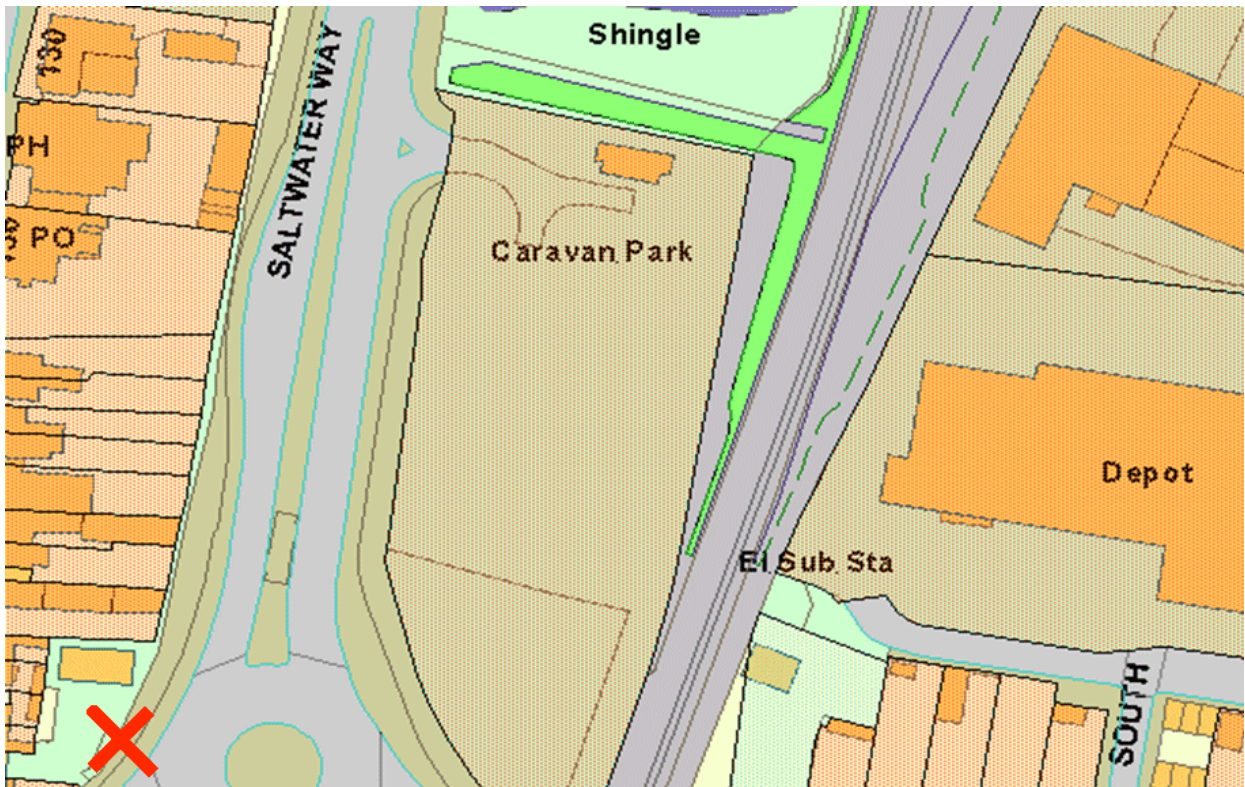


Diffusion tube site DT3 :The Flying Dutchman, Cotmer Road, Oulton Broad

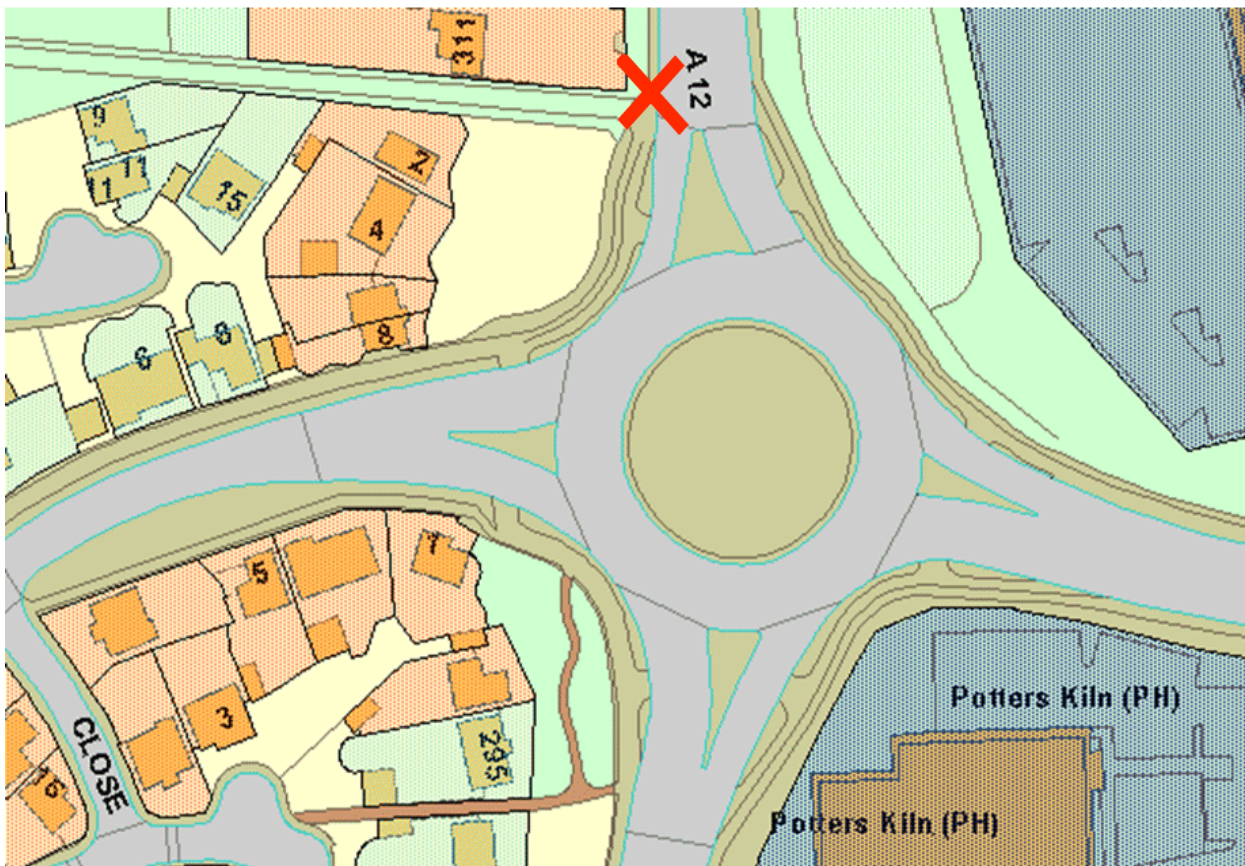


Diffusion Tube Site DT4 : Golden Court, Bridge Road, Oulton Broad

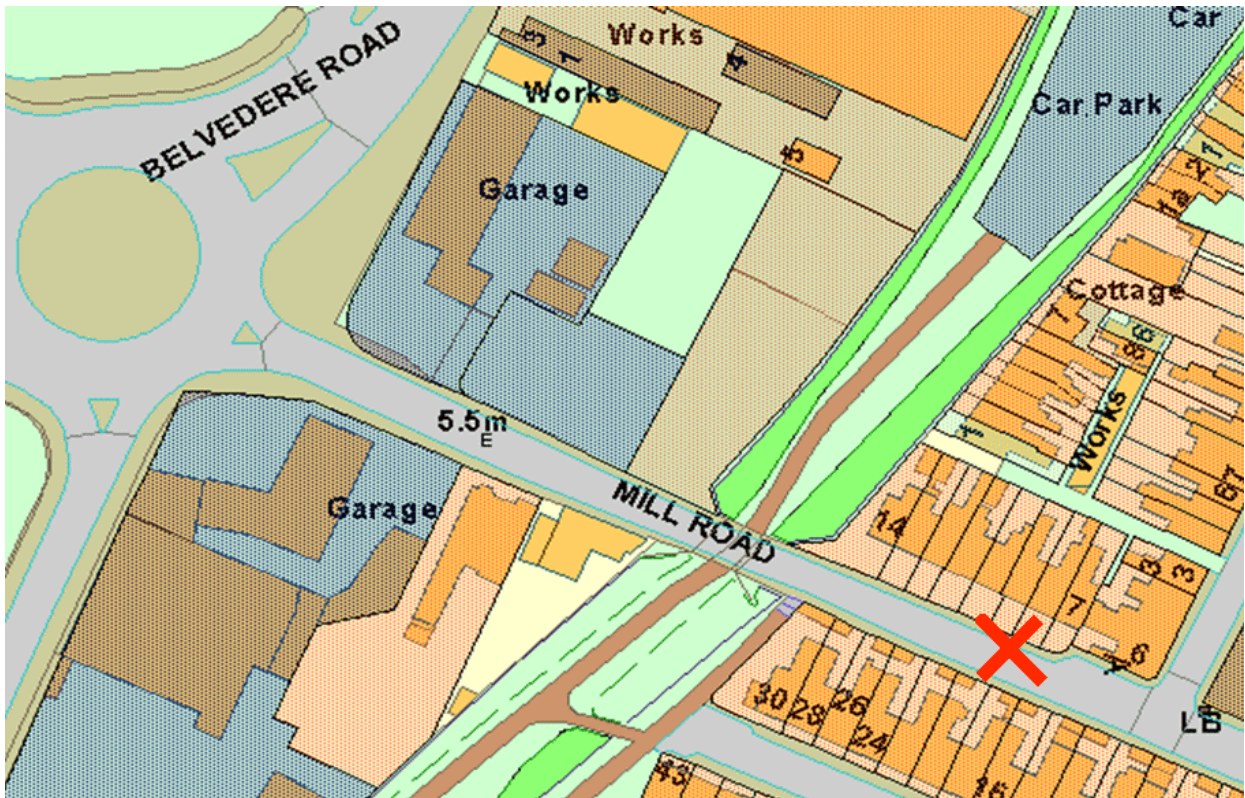




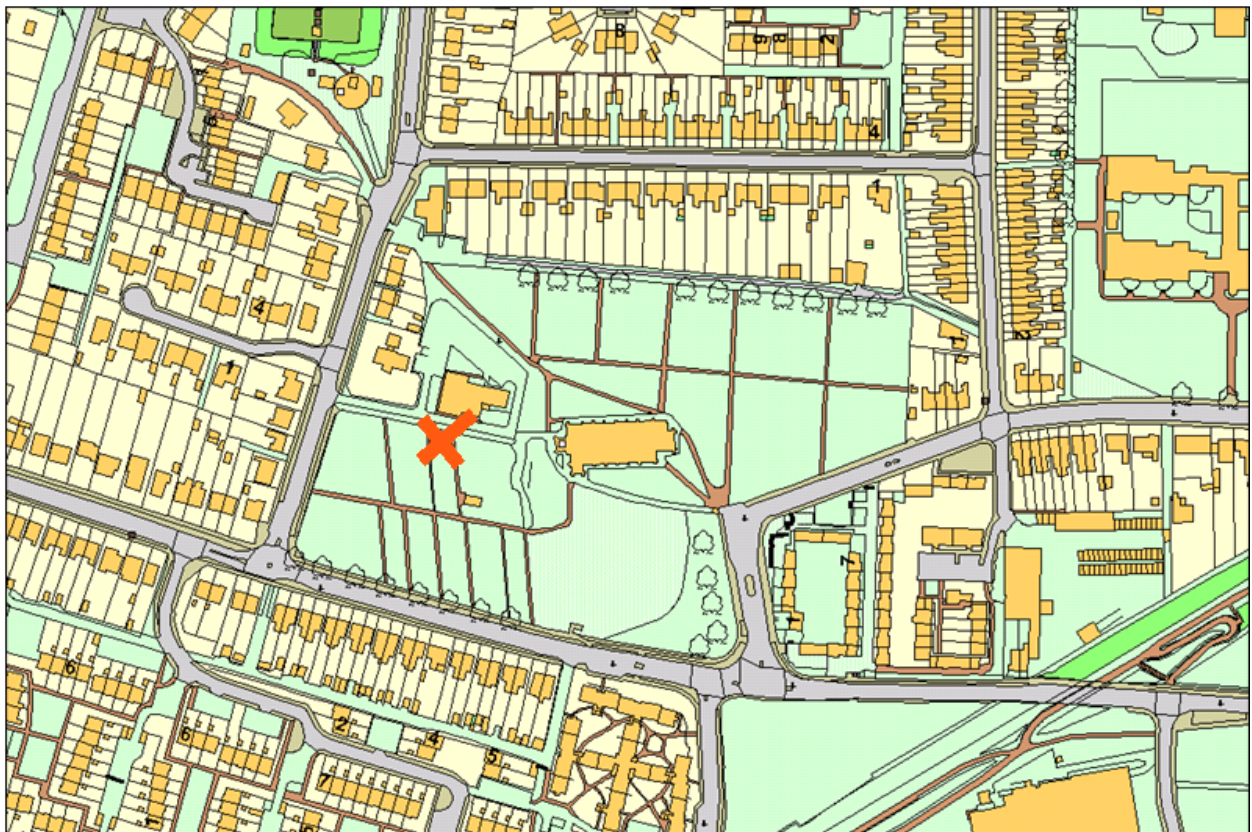
Diffusion Tube Site DT5 : Saltwater Way, Oulton Broad



Diffusion Tube Site DT6 : Yarmouth Road, Lowestoft



Diffusion Tube Site PN7 : Mill Road, Lowestoft



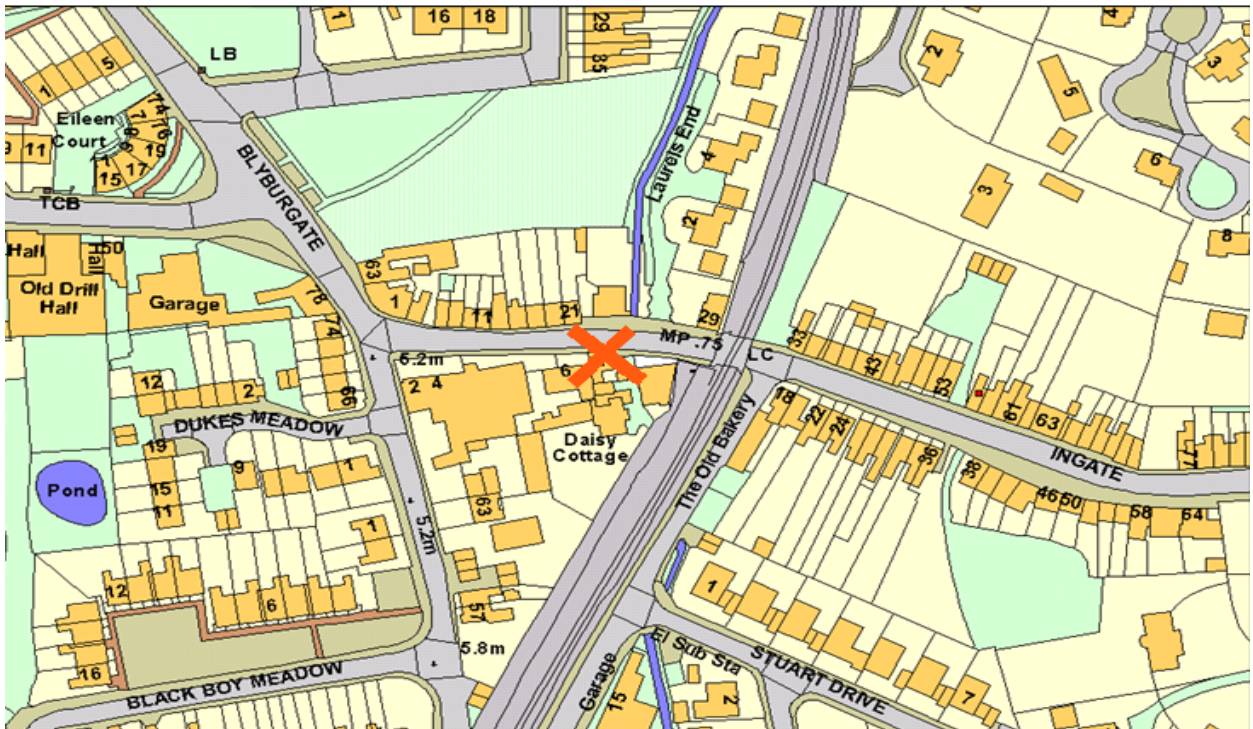
Diffusion Tube Monitoring Site DT8 St Margaret's Churchyard



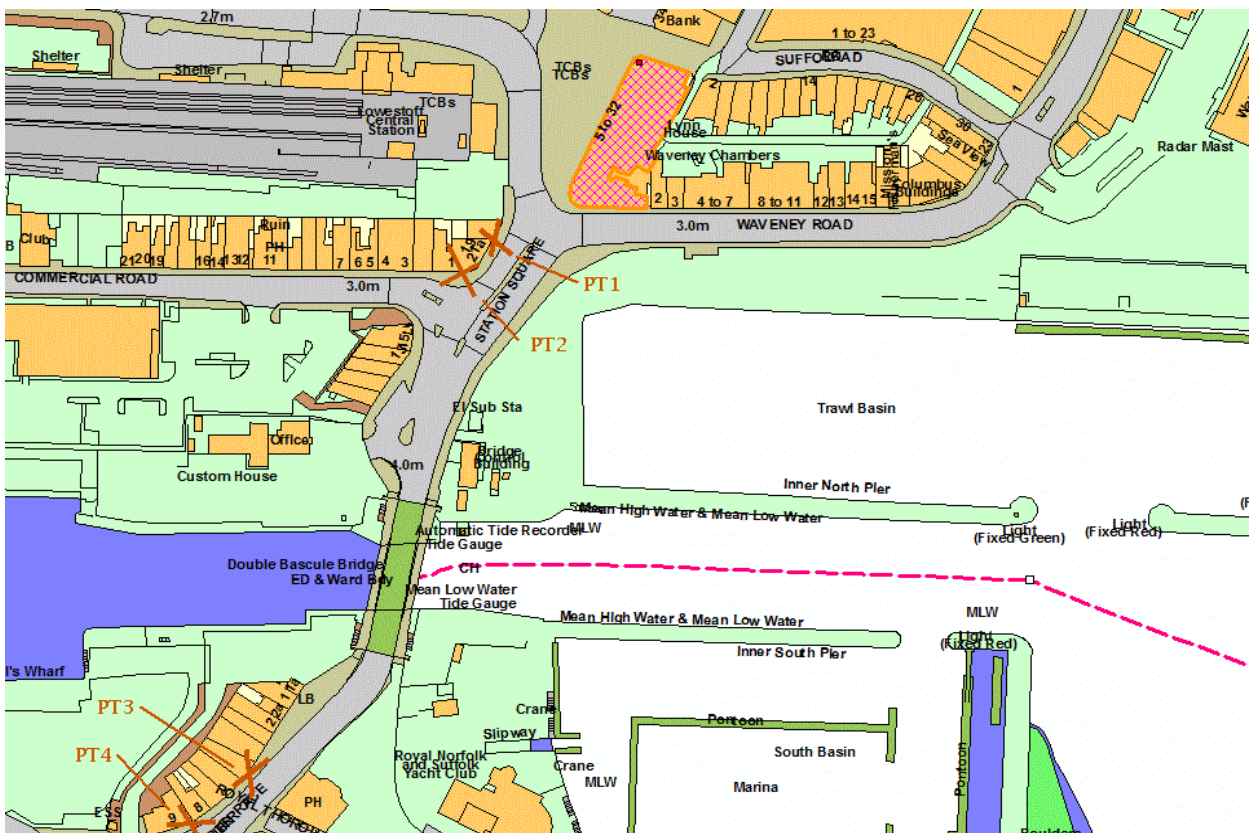
Diffusion Tube Site DT9/10/11/12 : Pier Terrace/Belvedere Road, Lowestoft



Diffusion tube sites DT13 : Trinity Street, Bungay



Diffusion Tube Site DT14/15 : Ingate, Beccles



Diffusion Tube sites PT1 to PT4: Bascule Bridge (Pier Terrace and Station Square) Lowestoft.

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

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective <sup>4</sup>	
	Concentration	Measured as
Nitrogen Dioxide (NO <sub>2</sub> )	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m <sup>3</sup>	Annual mean
Particulate Matter (PM <sub>10</sub> )	50 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m <sup>3</sup>	Annual mean
Sulphur Dioxide (SO <sub>2</sub> )	350 µg/m <sup>3</sup> , not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m <sup>3</sup> , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean

<sup>4</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).

## Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO <sub>2</sub>	Sulphur Dioxide
...	...

## References

- Air Quality Review and Assessment Progress Report on Air Quality In Waveney (2007), AEA Technology plc, Report AEAT/ENV/R/2562
- Air Quality Review and Assessment Progress Report on Air Quality in Waveney (2008), AEA Technology plc, Report AEAT/ENV/R/2645
- Air Quality Updating and Screening Assessment Report on Air Quality in Waveney I (2009), AEA Technology plc, Report AEAT/ENV/R/2805.
- Air Quality Review and Assessment Progress Report on Air Quality in Waveney District (2010)
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