



**2016 Air Quality Annual
Status Report (ASR):
Ashford Borough Council**

July 2016



Experts in air quality
management & assessment

Document Control

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Executive Summary: Air Quality in Our Area

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents.

This document is Ashford Borough Council's Annual Status Report (ASR). Results from monitoring by the Council are presented and sources of air pollution are identified. The ASR determines those changes since the last assessment that could lead to the risk of an air quality objective being exceeded.

This Annual Status Report confirms that air quality within Ashford continues to meet the relevant air quality objectives. No significant changes in existing emissions sources within Ashford have been identified. Furthermore, there have been no new relevant industrial installations and no new significant commercial, domestic or fugitive sources of emissions.

Air Quality in Ashford

Air pollution is associated with a number of adverse health impacts. It is recognised as having a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases. 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 billion³.

Ashford is the largest borough in Kent, with a fast-growing population. In 2003, Ashford was identified as one of the Growth Areas in the government's Sustainable Communities Plan with a £2.5 billion investment programme underway to provide 31,000 new homes and 28,000 new jobs by 2031. Although the urban area of Ashford is expanding, much of the borough is rural in character, including protected areas such as the North Downs and the High Weald.

The main source of air pollution in the borough is road traffic emissions from major roads, notably the M20, A20, A28 and A292. Other pollution sources, including commercial, industrial and domestic sources, also make a contribution to background pollution concentrations. Pollutant

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

concentrations within the borough are all below the national air quality objectives and the latest monitoring data show levels are decreasing slightly.

Actions to Improve Air Quality

Air quality in the borough is considered to be good, with concentrations below the national air quality objectives. Ashford Borough Council largely protects air quality within its borough by using Core Strategy Policy CS1 to encourage sustainable development and high quality designs. The main source of pollution within the borough is road traffic emissions, and the Local Transport Plan for Kent sets out policies to improve transport, and encourage sustainable transport within the borough. Ashford Borough Council has been working closely with Kent County Council to improve air quality; below are details of the actions taken recently.

Electric Vehicle Charging

At the beginning of 2014 the council (in partnership with KCC) agreed to install a total of five double electric-vehicle charging points as part of a 43 strong network across Kent. This is part of a wider government backed initiative to provide the infrastructure to support electric vehicle use. Although there are currently a small number of electric vehicle owners, surveys suggest that this will increase in future years.

All of the charging points provided in the council's area are operational, and this has resulted in 952 charging sessions by 47 unique drivers. A total of 5,352 kilowatts have been drawn to charge the vehicles and this represents approximately one third of the total consumption in Kent. The charging points which have been installed at the council office carpark in Tannery Lane are the second most used facility.

The council will continue to monitor their use and this will inform future discussions with partners and other stakeholders.

Green Travel

In 2014 the council, with grant funding from Kent County Council's Health Inequalities Fund, extended the 'Walk to School' programme in Ashford. The delivery partner (KM Charity Group) targeted those primary schools considered to have a specific need for this initiative. The program has encouraged children to walk, cycle or travel to school in some other active way. The programme has attempted to improve road awareness, encourage physical activity and reduce the use of vehicles, which should improve air quality.

This project has been very successful. Thirteen schools participate in the program and three schools have introduced 'walking buses'.

A28 Chart Road Improvement Scheme

The A28 is a strategic route serving the east and south side of Ashford from Junction 9 of the M20. The existing transport corridor from Junction 9 to the A28 'Tank Roundabout' has been progressively improved over past years. However, following the award of Local Growth funding and the proposed development at Chilmington Green, Kent County Council is actively promoting this scheme.

The existing road and junctions are regularly congested, the route lacks continuity of footway and cycle provision and the vertical alignment over the existing railway bridge is poor. An outline design has been prepared to provide a two lane dual carriageway with shared unsegregated footway and cycleway along both sides of the road. It includes improved junction capacity at the Tank Roundabout, Matalan Roundabout and Loudon Way and the public engagement process has now started.

An air quality technical review by Amey (report ref. C004300246) has been undertaken and issued to stakeholders. The improvements recommended in the review are to include some incentive to encourage walking and cycling along this route.

Local Priorities and Challenges

M20 Junction 10a

The delivery of additional motorway capacity by the provision of a new Junction 10a to the south east of Ashford is already recognised by the council as a priority project. Although the existing Junction 10 was improved in 2007, it was clear from the outset that further capacity was required to - unlock the council's existing and future growth plans. In addition it was recognised that delivery of a new Junction 10a was required to support the emerging new Local Plan.

The promoter (Highways England) has started to prepare the necessary documentation required for a Nationally Significant Infrastructure Project (NSIP). This involves four key stages,

1. pre-application consultation by the promoter;
2. PINS to accept an application from the promoter;
3. pre-examination by PINS; and
4. further examination by PINS at a hearing (if required) and decision by the Secretary of State.

At the time of writing this report the promoter has prepared a Preliminary Environmental Information Report (PEIR) and requested comments from various stakeholders. The PEIR

includes a chapter on Air Quality and there is a baseline survey identifying specific sites and associated data from diffusion tube monitoring.

An earlier draft technical appraisal report (October 2008) has indicated that the area previously assessed included 199 properties in the 'Do Minimum' scenario and 204 properties in the 'Do Something' scenario (within 200 metres of proposed link road and junction). The assessment indicated that none of the properties identified experienced an exceedance of the current AQ objectives for nitrogen dioxide or PM₁₀ in either the 'Do Minimum' or 'Do Something' scenario.

However, the promoter will be undertaking a full Environmental Impact Assessment (EIA) and this will be released when the application has been submitted to PINS. It is anticipated that the EIA will include predictive modelling of air quality and a full discussion on the scheme's potential impact.

Network Rail LTPP – Kent Route Study

The Long Term Planning Process (LTPP) is a new initiative designed to facilitate strategic planning of the rail network. Each route area within Network Rail will be involved and the Kent Route Study (KRS) is part of a second tranche which started in September 2015.

The KRS includes the following main lines:

- the Chatham main line from London Victoria via Bromley South which splits into two separate routes at Swanley; one of these routes is the line to Ashford International via Maidstone East;
- the Tonbridge main line from London Charing Cross via Sevenoaks which splits into two separate routes at Tonbridge; one of these routes is the line to Ashford International via Paddock Wood. Some peak only services also operate to London Cannon Street and lines east of Ashford International, via both Dover Priory and Canterbury West;
- existing connections to the High Speed Line (HS1) near Longfield, Gravesend and Ashford International (refer to comments below); and
- the Marshlink line from Ashford International to Hastings.

The output from the KRS will no doubt influence the future funding available for each route during Network Rail's Control Period 6 (2019-2024).

Ashford International Station

When the Channel Tunnel Rail Link was constructed, the preferred route alignment passed immediately to the north of Ashford IPS and spurs were constructed to allow Eurostar trains to stop and pick up passengers. These spurs, which are owned and managed by Network Rail, are signalled using a system that is incompatible with the new Siemens e320 and DB ICE trains to be

deployed on the HS1 line in the future which means that access to Ashford IPS would not be permitted.

The Ashford IPS signalling upgrade is therefore essential to provide inter-operability for all international service providers. Although Phase 2 Design works are due to be completed by March 2016 further funding is required at a later date. Contract discussions have started between Network Rail and the EU.

Major Town Centre Redevelopment Proposals

The council has recently embarked upon a major challenge to revitalise the Ashford Town Centre. This includes the acquisition of an existing shopping centre (Park Mall) and negotiation to secure the redevelopment of former underused and derelict land adjacent to the main transport corridor in central Ashford.

This project includes the following sites:

- Former Powergen Site – a ‘hybrid’ and outline planning application has been submitted for five plots comprising 660 dwellings and ancillary uses (A1/A3) together with parking, landscaping and access works. A decision is likely to be issued during the early part of 2016;
- Elwick Place – a major ‘brownfield’ site adjacent to the main railway corridor in central Ashford designated for a mixed retail, leisure, office and residential use. The council has acquired part of the site and planning permission for the commercial element has been secured;
- Former Godinton Way Industrial Estate – a ‘brownfield’ site for residential development. A detailed planning application has been submitted and approved. Initial ground works involving demolition of existing buildings on site and removal of localised contamination is currently in progress;
- Ashford College Campus – a ‘brownfield’ site occupying a prominent location at the corner of Elwick Road and Station Road which has been identified for redevelopment as an educational centre. A detailed planning application has been submitted and there is a resolution to grant permission, subject to a section 106 agreement. The development includes a further-education college building and ancillary facilities. Demolition of the former buildings on this site has commenced (October 2015) and it is anticipated that Phase 1 and 1a of this development will be completed by April 2017;
- Ashford Commercial Quarter – the site has the potential to deliver an Enterprise/Innovation Centre as part of one of the office buildings, providing start up space and small serviced office space within Ashford. A planning application for this development is in preparation;

- International Designer Outlet Expansion – a detailed planning application has been submitted to enlarge the footprint of the existing retail space and there is a council resolution to grant permission, subject to a section 106 agreement. The development has the potential to attract additional visitors to Ashford and improve the environment between the Ashford IPS/Domestic Station and existing designer outlet;
- Chilmington Green – Major development including up to 5750 residential units and supporting infrastructure. Section 106 negotiations are nearing a conclusion and Heads of Terms have been agreed with the exception of some minor issues. It is anticipated that the first phase of this development will begin during September 2016;
- Conningbrook Lakes - the council has approved major development at Conningbrook Lakes including a country park, residential development and leisure activities (e.g. water sports). The country park will be managed by a partnership involving the council, Ashford Leisure Trust and Mid Kent Fisheries;
- AIMREC/Klondyke Works – a brownfield site adjacent to the Ashford to Hastings railway line which has been identified as a suitable location for a Model Railway visitors centre with a viewing platform and associated parking, landscaping and access. The council has resolved to permit the application subject to a further ecological/reptile survey; and
- Victoria Road & George Street Site – a brownfield site occupying a prominent location opposite the Ashford IPS which has been identified for a mixed use redevelopment including, a food-store, brewery, hotel, commercial units, residential and associated parking, landscaping and access. At the time of writing this report the applicant is seeking an EIA screening opinion.

There is potential for these developments either singly or cumulatively to have an impact on air quality at particular locations. Ashford Borough Council is using the planning system to ensure that where necessary, planning applications have a robust air quality assessment submitted with them, and mitigation is requested if it is required.

How to Get Involved

Members of the public can help improve air quality in the borough by travelling using sustainable transport options, such as walking, running, cycling and using public transport. Ashford Borough Council encourages the promotion of air quality, and education material can be provided.

Further information on local air quality can be obtained via the UBreathe app for iPhone and Android, which provides air pollution health advice where you need it.

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Ashford Borough Council agrees with the conclusions and recommendations presented in this report.

1 Local Air Quality Management

This report provides an overview of air quality in Ashford during 2015. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) (HMSO, 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 Ashford Borough 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 A5.1 in Appendix A5.

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 the objectives.

Ashford Borough Council currently does not have any AQMAs.

2.2. PM_{2.5}: Local Authority Approach to Reducing Emissions and Concentrations

As detailed in Policy Guidance LAQM.PG16 Chapter 7 (Defra, 2016a), 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.

Ashford Borough Council is part of the Kent Health and Wellbeing Board, which brings together County and District Councillors, senior officers from the NHS Area Team, Clinical Commissioning Groups, Social Care and Public and members of the Local Healthwatch. The board produced the Kent Joint Health and Wellbeing Strategy, which sets out how the multidisciplinary teams can align their plans to improve public health and tackle key health issues over the coming years.

Ashford Borough Council is working with Public Health colleagues to prioritise action on air quality in its local area to help reduce the health burden from air pollution. The Public Health Outcomes Framework is a Department of Health data tool for England, intended to focus public health action on increasing healthy life expectancy and reducing differences in life expectancy between communities. The PHOF includes an indicator, based on the effect of particulate matter (PM_{2.5}) on mortality. The approach used, in partnership with Public Health colleagues, includes the encouragement of active travel, which will also have wider public health benefits captured in other indicators such as increased physical activity (indicator 2.13) and reducing excess weight at various ages (indicators 2.6 & 2.12).

The Local Transport Plan for Kent sets out a 20 year transport delivery plan for the county. Ashford has been identified by the previous Government as an area for significant growth in housing and employment and contains one of the UK's four Growth Areas. PM_{2.5} is one of the main pollutants released in road traffic emissions; improving transport within the borough is therefore of key importance. The Local Transport Plan proposes a number of strategies to improve transport within Ashford, including an Urban Traffic Management and Control (UTMC) system, improvements to local bus services, a Smartlink Bus Rapid Transit (BRT) scheme, and the potential for a new junction on the M20.

Planning is also particularly important for PM_{2.5} and Ashford Borough Council is focussed through its planning policy on preventing particulate matter concentrations being inadvertently increased. Policy CS1 within the Core Strategy states that *"sustainable development and high quality design are at the centre of the Council's approach to plan making and deciding planning applications"* and developments should respect the environmental limits and protect air quality standards.

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

3.1. Summary of Monitoring Undertaken

This section sets out the monitoring that has taken place and how the results compare with objectives.

3.1.1. Automatic Monitoring Sites

The Ashford background automatic monitoring site measuring NO₂, PM₁₀ and ozone operated from September 2008 until April 2011. This site was closed as it became unreliable. No other automatic monitoring has been carried out in the borough since.

3.1.2. Non-Automatic Monitoring Sites

Ashford Borough Council undertook non-automatic (passive) monitoring of NO₂ at 27 sites during 2015. Table A1.1 in Appendix A1 shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix A4. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix A3.

3.2. Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, bias annualised and bias adjusted. Further details on adjustments are provided in Appendix A3.

3.2.1. Nitrogen Dioxide (NO₂)

Table A1.2 in Appendix A1 compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40 µg/m³. The full 2015 dataset of monthly mean values is provided in Appendix A2.

The measured concentrations are below the annual mean air quality objective at all monitoring sites in 2015. The concentrations are also below 60 µg/m³, indicating that an exceedance of the 1-hour mean objective is also unlikely at these sites.

Measured annual mean concentrations for the past 5 years are presented in Figure 3.1. There is a slight downward trend in measured concentrations over this period, indicating that air quality conditions within the borough are improving.

The highest concentrations have been measured at the Willesborough site (AS15) although they have remained below the objective. As noted in the appraisal of the 2015 Updating and Screening Assessment, there was an increase in 2014, which has now reduced back to 2013 concentrations.

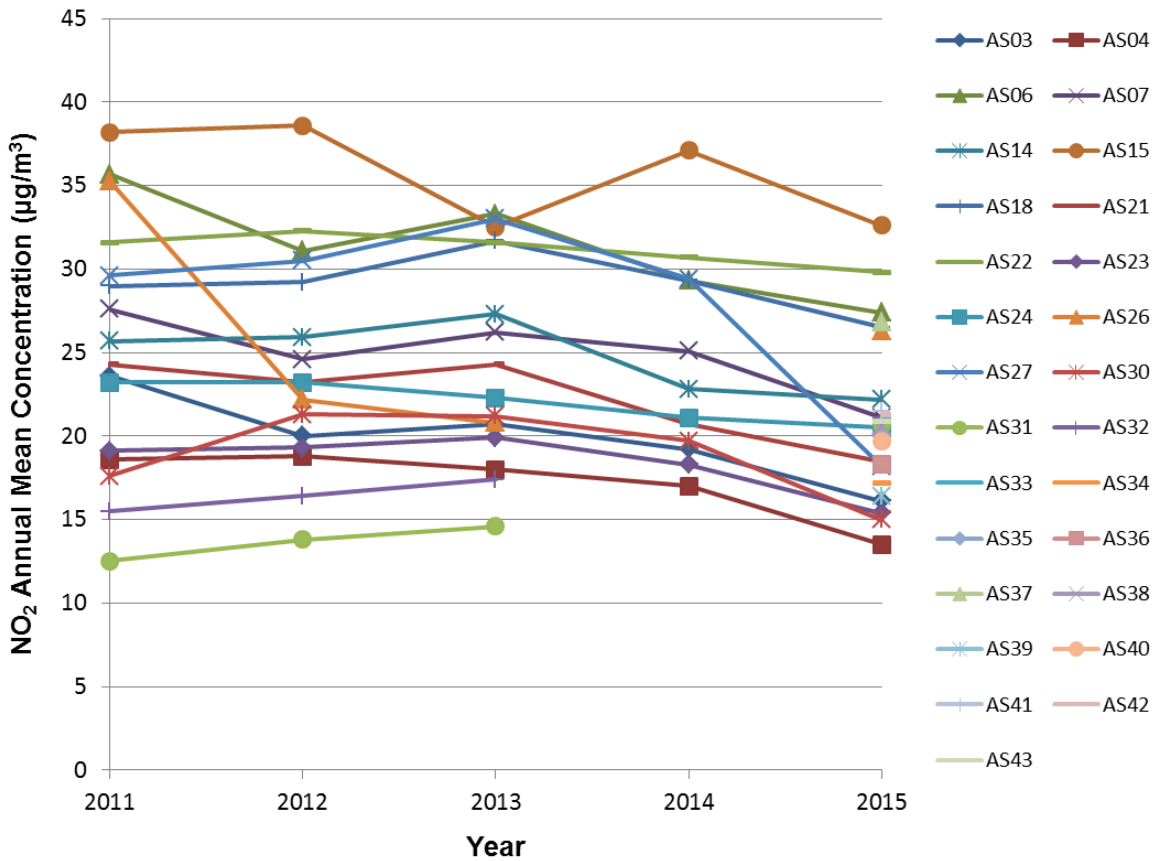


Figure 3.1: Trends in Annual Mean Nitrogen Dioxide Concentrations measured at the Diffusion Tube Monitoring Sites

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A1 Appendix A: Monitoring Results

Table A1.1: 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) ^a	Distance to kerb of nearest road (m) ^b	Tube Collocated with a Continuous Analyser	Height (m)
AS03	Coles Computers	Urban	600900	142500	NO ₂	N	N/A	N/A	N	N/A
AS04	Churchyard Ashford	Urban	601000	142700	NO ₂	N	N/A	N/A	N	N/A
AS06	Hythe Road	Kerbside	603153	141990	NO ₂	N	13.7	1.0	N	2.5
AS07	High Street Tenterden	Roadside	587945	133079	NO ₂	N	7.9	3.0	N	2.0
AS14	Nutley Close	Kerbside	601460	143509	NO ₂	N	N/A	N/A	N	N/A
AS15	Lees Road x 3	Suburban	601303	142563	NO ₂	N	N/A	N/A	N	N/A
AS18	Hill View Nursing Home x 3	Suburban	603393	142073	NO ₂	N	N/A	N/A	N	N/A
AS21	Apsley Street	Kerbside	598800	148100	NO ₂	N	N/A	N/A	N	N/A
AS22	Gore Court	Kerbside	601200	143400	NO ₂	N	N/A	N/A	N	N/A
AS23	Ashford School	Urban	601440	142750	NO ₂	N	N/A	N/A	N	N/A
AS24	New Street	Roadside	600778	142910	NO ₂	N	N/A	N/A	N	N/A
AS26	Hardy House	Roadside	601250	142981	NO ₂	N	N/A	N/A	N	N/A
AS27	Victoria Road Primary	Roadside	600794	142320	NO ₂	N	N/A	N/A	N	N/A

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ^a	Distance to kerb of nearest road (m) ^b	Tube Collocated with a Continuous Analyser	Height (m)
	School									
AS30	78-100 Clockhouse	Suburban	599433	142371	NO ₂	N	N/A	N/A	N	N/A
AS31	42 Newtown Green	Roadside	601828	141461	NO ₂	N	0	2.9	N	1.6
AS32	Hollington Place	Kerbside	600973	143027	NO ₂	N	N/A	N/A	N	N/A
AS33	East Lodge Chart Road	Roadside	599827	143084	NO ₂	N	N/A	N/A	N	N/A
AS34	13 Thornlea	Suburban	599459	142968	NO ₂	N	N/A	N/A	N	N/A
AS35	102 Brookfield Road	Roadside	599514	142111	NO ₂	N	N/A	N/A	N	N/A
AS36	99 Beaver Lane	Roadside	600000	141445	NO ₂	N	N/A	N/A	N	N/A
AS37	30 Kingsnorth Road	Roadside	600488	141278	NO ₂	N	9	1.4	N	2.5
AS38	22 Magazine Road	Roadside	600701	143168	NO ₂	N	N/A	N/A	N	N/A
AS39	Lime Court, Kennington	Roadside	601737	145328	NO ₂	N	N/A	N/A	N	N/A
AS40	4 Blackwall Road North	Roadside	603230	142796	NO ₂	N	N/A	N/A	N	N/A
AS41	408 Hythe Road	Suburban	603161	141972	NO ₂	N	N/A	N/A	N	N/A

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ^a	Distance to kerb of nearest road (m) ^b	Tube Collocated with a Continuous Analyser	Height (m)
AS42	Sunnyside, Elwick Road	Roadside	601021	142435	NO ₂	N	N/A	N/A	N	N/A
AS43	60 Godinton Road	Roadside	600665	142704	NO ₂	N	N/A	N/A	N	N/A

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

^b N/A if not applicable or not available.

Table A1.2: Annual Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ^a	Valid Data Capture 2015 (%) ^b	NO ₂ Annual Mean Concentration (µg/m ³) ^c				
					2011	2012	2013	2014	2015
AS03	Urban	Diffusion Tube	100	58	23.6	20.0	20.7	19.2	16.1
AS04	Urban	Diffusion Tube	86	50	18.6	18.8	18.0	17.0	13.5
AS06	Kerbside	Diffusion Tube	100	58	35.7	31.1	33.3	29.3	27.4
AS07	Roadside	Diffusion Tube	100	58	27.6	24.6	26.2	25.1	21.1
AS14	Kerbside	Diffusion Tube	100	100	25.7	25.9	27.3	22.8	22.2
AS15	Suburban	Diffusion Tube	100	100	38.2	38.6	32.5	37.1	32.6
AS18	Suburban	Diffusion Tube	100	100	29.0	29.2	31.7	29.3	26.5
AS21	Kerbside	Diffusion Tube	86	50	24.3	23.2	24.3	20.7	18.5
AS22	Kerbside	Diffusion Tube	100	58	31.6	32.3	31.6	30.7	29.8
AS23	Urban	Diffusion Tube	100	58	19.1	19.3	19.9	18.3	15.4
AS24	Roadside	Diffusion Tube	100	100	23.2	23.2	22.3	21.1	20.5
AS26	Roadside	Diffusion Tube	100	58	35.3	22.2	20.8	-	26.3

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ^a	Valid Data Capture 2015 (%) ^b	NO ₂ Annual Mean Concentration (µg/m ³) ^c				
					2011	2012	2013	2014	2015
AS27	Roadside	Diffusion Tube	92	92	29.6	30.5	33.0	29.4	18.2
AS30	Suburban	Diffusion Tube	71	42	17.6	21.3	21.2	19.7	15
AS31	Roadside	Diffusion Tube	83	83	12.5	13.8	14.6	-	20.7
AS32	Kerbside	Diffusion Tube	92	92	15.5	16.4	17.4	-	21.1
AS33	Roadside	Diffusion Tube	100	42	-	-	-	-	21.2
AS34	Suburban	Diffusion Tube	100	42	-	-	-	-	17.2
AS35	Roadside	Diffusion Tube	100	42	-	-	-	-	20.1
AS36	Roadside	Diffusion Tube	100	42	-	-	-	-	18.3
AS37	Roadside	Diffusion Tube	100	42	-	-	-	-	26.8
AS38	Roadside	Diffusion Tube	100	42	-	-	-	-	20.5
AS39	Roadside	Diffusion Tube	100	42	-	-	-	-	16.4
AS40	Roadside	Diffusion Tube	100	42	-	-	-	-	19.7
AS41	Suburban	Diffusion Tube	100	42	-	-	-	-	21.5
AS42	Roadside	Diffusion Tube	100	42	-	-	-	-	21.3
AS43	Roadside	Diffusion Tube	100	42	-	-	-	-	20.9

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

NO₂ annual means exceeding 60 µg/m³, indicating a potential exceedence of the NO₂ 1-hour objective, are shown in **bold and underlined**.

- ^a Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year (e.g. if monitoring was carried out for 3 months and results were available for all three monthly tubes then the data capture is 100%).
- ^b 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%).
- ^c Annual means for diffusion tubes have been corrected for bias. All means have been annualised as per Technical Guidance LAQM.TG16 (Defra, 2016b) if valid data capture for the full calendar year is less than 75%. See Appendix A3 for details.

A2 Appendix B: Full Monthly Diffusion Tube Results for 2015

Table A2.1: NO₂ Monthly Diffusion Tube Results 2015

Site ID	NO ₂ Mean Concentrations (µg/m ³)												Annual Mean ^a		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Annualised	Bias Adjusted
	AS03	30.0	29.1	28.3	22.8	18.0	8.1	16.3	-	-	-	-	-	21.8	19.9
AS04	27.7	20.7	23.9	17.4	13.1	-	12.5	-	-	-	-	-	19.2	16.7	13.5
AS06	44.9	36.8	46.9	40.6	35.3	31.6	23.8	-	-	-	-	-	37.1	33.9	27.4
AS07	39.9	33.0	35.0	28.2	19.5	19.7	24.4	-	-	-	-	-	28.5	26	21.1
AS14	38.6	37.2	39.7	33.5	23.1	11.8	18.7	26.1	34.7	40.4	23.5	21.4	29.1	27.4	22.2
AS15	52.9	47.7	44.6	38.4	42.8	30.4	43.3	42.0	36.2	29.4	51.9	52.8	42.7	40.2	32.6
AS18	43.4	38.5	43.7	36.1	30.7	28.9	27.7	33.3	39.9	44.6	28.6	21.5	34.7	32.7	26.5
AS21	28.5	37.7	30.9	22.3	21.4	-	17.3	-	-	-	-	-	26.4	22.9	18.5
AS22	51.9	44.9	41.2	35.6	36.5	35.1	37.4	-	-	-	-	-	40.4	36.8	29.8
AS23	33.8	26.8	20.5	22.1	15.2	12.1	15.4	-	-	-	-	-	20.8	19	15.4
AS24	36.6	34.3	33.1	26.0	19.7	15.6	18.1	24.7	27.3	34.2	30.1	23.0	26.9	25.3	20.5
AS26	35.6	42.4	44.3	36.2	31.3	26.9	32.8	-	-	-	-	-	35.6	32.5	26.3
AS27	34.7	-	31.2	22.3	14.4	13.2	16.8	22.2	24.2	32.1	23.1	20.9	23.2	22.5	18.2
AS30	-	26.0	25.1	23.7	11.1	14.5	-	-	-	-	-	-	20.1	18.5	15
AS31	-	-	30.4	25.6	15.2	15.5	19.2	24.4	34.6	30.8	27.4	27.7	25.1	25.6	20.7
AS32	35.3	-	28.8	22.6	19.4	18.1	21.7	27.7	26.1	36.4	33.2	26.2	26.9	26.1	21.1
AS33	-	-	-	-	-	-	-	27.7	27.3	18.7	32.9	25.5	26.4	26.2	21.2
AS34	-	-	-	-	-	-	-	16.2	20.4	28.0	21.3	21.5	21.5	21.3	17.2

Site ID	NO ₂ Mean Concentrations (µg/m ³)												Annual Mean ^a		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Annualised	Bias Adjusted
	AS35	-	-	-	-	-	-	-	23.5	23.6	27.2	25.5	25.7	25.1	24.9
AS36	-	-	-	-	-	-	-	22.4	22.7	28.0	21.5	19.5	22.8	22.6	18.3
AS37	-	-	-	-	-	-	-	32.9	32.9	39.5	31.3	30.1	33.3	33	26.8
AS38	-	-	-	-	-	-	-	23.8	25.5	27.8	28.3	22.1	25.5	25.3	20.5
AS39	-	-	-	-	-	-	-	17.3	20.5	22.9	21.8	19.6	20.4	20.2	16.4
AS40	-	-	-	-	-	-	-	21.9	23.4	22.6	26.7	28.2	24.6	24.3	19.7
AS41	-	-	-	-	-	-	-	23.9	31.9	35.9	23.7	18.5	26.8	26.5	21.5
AS42	-	-	-	-	-	-	-	26.6	29.7	31.0	25.1	20.1	26.5	26.3	21.3
AS43	-	-	-	-	-	-	-	22.9	26.1	31.4	26.1	23.5	26.0	25.8	20.9

^a See Appendix A3 for details on annualisation and bias adjustment.

A3 Appendix C: Supporting Technical Information/ Air Quality Monitoring Data QA/QC

Supporting Technical Information

Changed and new sources of pollution have been investigated and any changes to existing sources, or new sources are listed below:

New or Existing Source	Screening Assessment Required?
Narrow Congested Streets with residential properties close to the kerb	No
Busy Streets where people may spend 1-hour or more close to traffic	No
Roads with a high flow of buses and/or HGV	No
Junctions	New Junction on the M20 (Junction 10A) covered in main body of the report
New roads constructed since the last round of Review and Assessment	No
New roads constructed since the last round of Review and Assessment	No
Bus and coach stations	No
Railway (diesel and steam trains)	No
Industrial installations (new installations and those with significantly increased emissions)	No
Major petrol storage depots	No
Petrol Stations	No
Poultry farms	No
Biomass combustion (including domestic solid-fuel burning for PM ₁₀)	Biomass at Godmersham Part, see below for details. Straw burning biomass boiler at Stanford Bridge Farm, Station Road, see below
CHP installations	No
Domestic solid-fuel burning (SO ₂)	No
Quarries, landfill sites, opencast coal mining, waste transfer sites, materials handling (i.e. ports, major construction sites)	No
New Developments	The council has recently embarked upon a major challenge to revitalise the Ashford Town Centre. Further details are provided in the main body of the report

Godmersham Park

The park forms the setting for a substantial house which was built in 1732 and is currently occupied by the Association of British Dispensing Opticians College. There are formal gardens which are open to the public and the estate extends to approximately 500 hectares. There are several other properties on the estate and a district heating scheme has recently been installed which is served by two HDG M400 biomass boilers. The fuel is derived from ongoing management of the estate woodland (coppicing).

Using biomass as a source of heating has reduced the carbon footprint and potential environmental damage from burning fossil fuels. The financial benefit has been estimated to be approximately £46k per annum and the payment of Renewable Heat Incentives.

The potential air quality impacts from this new plant were assessed in the 2014 Progress Report and were judged to be insignificant.

Stanford Bridge Farm, Pluckley

This farm is the operational base for FGS Agri Ltd. It includes approximately 850 ha of arable production and a large beef suckler herd. To reduce the company's dependence upon fossil fuels it has recently installed a straw burning biomass boiler and buffer storage tank which will be used for crop drying, and space heating (office, workshop and farmhouse). The feedstock is derived from the company's local arable farmland and stored as large square bales. To ensure that the system operates at maximum efficiency there is continuous monitoring of the boiler temperature and the buffer tank provides a reservoir of hot water for distribution around the farm buildings.

It is expected that the impacts on local air quality are unlikely to be significant as the installation is located in a rural area and at considerable distance from the majority of receptors.

Diffusion Tube Bias Adjustment Factors

The Ashford Borough Council background site co-location study was closed in April 2011 and therefore it is not appropriate to use these data to calculate a bias adjustment factor. Therefore, the bias factor has been taken from the diffusion tube spreadsheet of national comparison studies. This has given a bias-adjustment factor for 2015 of 0.81. The bias adjustment factors for previous years were 0.84 in 2011, 0.79 in 2012, 0.80 in 2013 and 0.81 in 2014.

QA/QC of diffusion tube monitoring

Nitrogen dioxide analysis procedures are compliant with the Diffusion Tubes for Ambient NO₂ Monitoring: Practical Guidance for users and laboratories (February 2008). The diffusion tubes are supplied and analysed by ESG Didcot utilising the 50% Triethanolamine (TEA) in acetone preparation method. ESG Didcot is a UKAS accredited laboratory which participates in the AEA

inter-comparison and the WASP scheme. In 2015, ESG Didcot was 100% satisfactory in all WASP trials.

A4 Appendix D: Map of Monitoring Locations

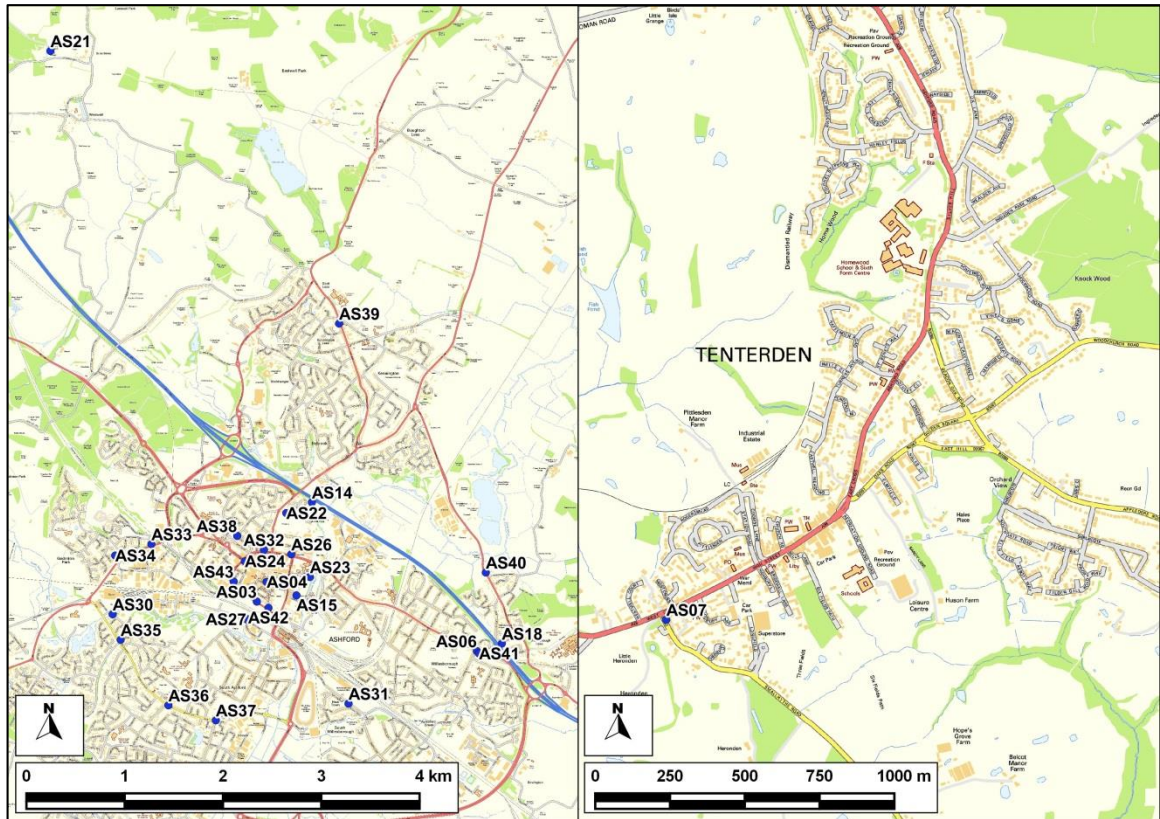


Figure A4.1: Map of Non-Automatic Monitoring Sites

A5 Appendix E: Summary of Air Quality Objectives in England

Table A5.1: Air Quality Objectives in England

Pollutant	Air Quality Objective ^a	
	Objective	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
Fine Particles (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

^a The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

AQC	Air Quality Consultants
AQMA	Air Quality Management Area
AURN	Automatic Urban and Rural Network
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges
Exceedence	A period of time when the concentration of a pollutant is greater than the appropriate air quality objective. This applies to specified locations with relevant exposure
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
µg/m³	Microgrammes per cubic metre
NO	Nitric oxide
NO₂	Nitrogen dioxide
NO_x	Nitrogen oxides (taken to be NO ₂ + NO)
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides
PM₁₀	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
PM_{2.5}	Small airborne particles less than 2.5 micrometres in aerodynamic diameter
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal

References

Defra (2007) *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland*.

Defra (2016a) *Local Air Quality Management Policy Guidance (PG16)*.

Defra (2016b) *Local Air Quality Management Technical Guidance (TG16)*.

Directive 2008/50/EC of the European Parliament and of the Council (2008).

HMSO (1995) *Environment Act*.

HMSO (2000) *The Air Quality (England) Regulations, 2000, Statutory Instrument 928*.

HMSO (2002) *The Air Quality (England) (Amendment) Regulations, 2002, Statutory Instrument 3043*.

Stationary Office (2010) *The Air Quality Standards Regulations (No. 1001)*.