2019 Air Quality Annual Status Report (ASR)

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

June 2019

Local Authority Officer	Linda Deacon
Department	Pollution Control
Address	Wealden District Council Vicarage Lane Hailsham BN27 2AX
Telephone	01323443281
E-mail	linda.deacon@wealden.gov.uk
Report Reference number	WDC 2018 ASR
Date	June 2019

Prepared by: ..... Checked by: .....

Alice Gurung
Graduate Air Quality Scientist

Helen Venfield
Principal Air Quality Consultant

Approved by: .....

Gareth Collins
Regional Director

Rev No	Comments	Checked by	Approved by	Date
1	Final	AS	GC	16/07/2019

Sunley House, 4 Bedford Park, Croydon, Surrey. CR0 2AP
Telephone: 0870 905 0906 Website: http://www.aecom.com

Job No: 60508341 Reference: WDC 2019 ASR Date Created: June 2019

Executive Summary: Air Quality in Our Area

Air Quality in Wealden

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

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3].

The District of Wealden is the largest district in East Sussex, and one of the most rural districts in England. Road traffic is the dominant source of air pollution in the area, the major routes being the A22, the A26, the A267, the A259, the A27 and the A272. The main pollutants of concern with respect to road traffic are nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$). Currently, there are no areas in Wealden where members of the public are exposed to levels of these pollutants in excess of the UK Air Quality Objectives.

Wealden District Council manages local air quality in close collaboration with East Sussex County Council (which contributed to monitoring until 2014) and with the Sussex Air Quality Partnership (Sussex Air). The partnership provides assistance to members and information to the public via its web-site with recent air quality data, news updates, educational resources, links and other services such as airAlert.

In recent years, local monitoring has identified high levels of NO_2 at two roadside locations (A267 East of Cross in Hand (W7), and West of Boship Roundabout (W8)), in areas where members of the public are not affected. In March 2017 the A267 East of Cross in Hand monitoring location changed due to difficult access and it not being a representative site. The site was moved further down the same road and nearer to residential properties. In 2017 and 2018, concentrations at the nearest sensitive

[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

receptors for both locations achieved the UK air quality objective for annual mean NO_2, with concentrations lower than 40 µg/m^3.

Two new locations for monitoring NO_2 were introduced in May 2017 in Forest Row. At the new A22 roadside site (W10), the annualised monitored concentration of NO_2 slightly exceeded the UK air quality objective for annual mean NO_2 (40.6 µg/m^3), although when distance-corrected for relevant exposure, this fell to below the objective value. In 2018, the annual mean NO_2 observed at W10 was 34.6 µg/m^3 and 32.2 µg/m^3 after distance correction.

PM_{10} and $PM_{2.5}$ are not monitored in Wealden District, but data from neighbouring Eastbourne suggests concentrations are consistently well below the UK annual mean objectives, decreasing slightly but with year-to-year variations. The number of days with high PM_{10} concentrations (above the 24-hour objective) overall decreased between 2012 and 2018.

As in other suburban and rural areas of East Sussex, ozone (O_3) is of considerable concern. O_3 is monitored in two locations in Wealden: Isfield and Lullington Heath. Annual average O_3 levels at Lullington Heath have increased since 2011. The number of days with high ozone concentrations (above the 8-hour objective) has decreased since 2011 at Isfield, with significant year-to-year variability and an increase from 2016 to 2018 is observed at Lullington Heath.

Sulphur dioxide (SO_2) is also measured at the Lullington Heath station. However, in recent years there have been no exceedances of any of the three UK Air Quality Objectives (15-minute, 1-hour and 24-hour).

Two-thirds of the District is designated as the High Weald and Sussex Downs Areas of Outstanding Natural Beauty (AONB) with 34 other conservations areas. The impact of traffic-related air pollution on some of these areas has been assessed in past years. The impact of traffic on the Ashdown Forest Special Protection Area (SPA) and SAC is currently being monitored, and the results will be examined in future years.

Actions to Improve Air Quality

Wealden District Council is helping the public to avoid the worst effects of O_3 pollution by informing the public of pollution events through the airAlert pollution warning service using the O_3 monitoring data obtained from two monitoring stations

within the Council. This service is provided and maintained through the Sussex Air partnership.

Energise was established as a public/private sector partnership by local authorities across Sussex, Surrey and Kent and was led by the Sussex Air Partnership, to help support the promotion of electric vehicle uptake in the region, by making access simpler. Charging points are located in the Wealden District at Selmeston Services (A27), Wealden District Council offices in Hailsham, Herstmonceux Integrated Health Centre, Crowborough Station, and Forest Row Parish Council.

Wealden District Council seeks to mitigate the air quality impacts from development in the district, in particular in the areas of ecological importance. The Council screens development proposals for significant air quality impacts on conservation areas such as the Ashdown Forest, and is working to reduce the current traffic levels around the Forest by identifying Suitable Alternative Natural Green Spaces (SANGS), and by implementing, with partner authorities and organisations, a Strategic Access Management and Monitoring Strategy (SAMMS). There is also a guidance note for developers on reducing traffic-related impacts on the Ashdown Forest.

Wealden District Council also contributes to the Air Quality and Emissions Mitigation Guidance for Sussex. The guidance supports the principles of the Sussex Air Quality Partnership to improve air quality across Sussex and encourage emissions reductions to improve the environment and health of the population. Other actions being implemented to improve public health include promoting active modes of transport like walking, cycling and using public transport, as well as car clubs and car sharing.

Conclusions and Priorities

This Annual Status Report confirms that concentrations within Wealden continue to be well within the NO_2 annual mean air quality objective at relevant locations. No significant changes in emissions sources within the Council's area have been identified in the last year.

The priorities for the coming year will be to continue monitoring in the area and continue to implement measures to increase sustainable travel options and improve transport infrastructure. The Council will ensure assessment and mitigation measures

for new developments, particularly those allocated around the main urban centres. The Council will also consider additional monitoring points in these areas of new development.

The main challenge for air quality management in Wealden is balancing the planned population growth in the District with conservation of the natural habitats that constitute most of the District's territory. Two-thirds of the District is designated as the High Weald and Sussex Downs AONB, along with 34 other conservations areas. Wealden District Council will address this challenge by managing a sustainable level of development, and monitoring pollution impacts on conservation areas such as the Ashdown Forest.

Local Engagement and How to get Involved

Everyone concerned about air quality in Wealden and the rest of Sussex can find real-time information on pollution levels on the Sussex Air website sussex-air.net, and sign up for advance warnings with the airAlert service at airalert.info. Warnings are provided by text or voice message, email, or using an Android or iOS app. The service is also available to schools and is a great way to get everyone engaged in thinking about the importance of air quality.

Large and small businesses in the vicinity of the Ashdown Forest and elsewhere can help reduce air pollution by adopting 'smarter choices' for traffic, as detailed in the Council's Guidance Note[4].

Drivers planning to replace their vehicles are encouraged to consider low and ultra-low emission vehicles, such as electric cars, plug-in hybrids and extended-range electric vehicles. The Energise Network provides members with access to more than 150 electric vehicle charging points across the South East. These include most local authority charge points in Kent, Surrey and Sussex, plus a number of Southern Rail fast chargers. For a map of the charging points and details on how to join, please visit energisenetwork.co.uk.

[4] Wealden District Council (2013). Guidance note on reducing nitrogen deposition at the Ashdown Forest Special Area of Conservation and Special Protection Area. Available at: http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?lID=12452&sID=3484

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1 Local Air Quality Management

This report provides an overview of air quality in Wealden during 2018. 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 Wealden 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.

Wealden currently does not have any AQMAs. Therefore, no formal Air Quality Action Plan has been set up and implemented for the District. For reference, a map of Wealden's monitoring locations is available in Appendix D.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)		Action Plan		
						At Declaration	Now	Name	Date of Publication	Link
Wealden District has no declared AQMAs.										

☒ **Wealden District Council confirm the information on UK-AIR regarding their AQMA(s) is up to date**

2.2 Progress and Impact of Measures to address Air Quality in Wealden

Defra's appraisal of last year's ASR concluded that the report as acceptable with the following comments:

1. *''The report provides limited discussion of $PM_{2.5}$ issues. Future reports should draw links to the Public Health Outcomes Framework, highlighting regional and national differences in the fraction of mortality attributable to this pollutant.*

2. *It is encouraging to see the Council are working towards implementing a wide range of mitigation measures. It would be beneficial for the Council, in terms of tracking progress, if objective KPIs and reduction targets were included against each measure.*

3. *The Council recently expanded their monitoring network which has highlighted an area prone to exceedances (Forest Row A22). The Council should review this area to better understand the extent of poor air quality.*

4. *Further to the above the Council may wish to consider relocating monitors that have recorded continually low concentrations in order to better understand areas of concern*

5. *Again, there have been exceedances of O_3 running 8-hour mean for the past 3 years in Isfield, Wealdon. This area warrants further investigation in order to better understand the extent of this exceedance (which has increased in severity from previous years). The Council are encouraged to develop specific measures for this pollutant (which may form part of those included under the Sussex Air Quality Partnership."*

Wealden is committed to continue monitoring and in May 2017 added another 2 diffusion tubes in Forest Row, where the A22 runs through the centre of the town. All main urban conurbations within the district are now being monitored.

As new major developments are built within the district, ongoing consideration will be given to additional monitoring locations.

The map of monitoring sites in Appendix D has been updated with the most recent names and locations.

Wealden District Council is a member of the Sussex Air Quality Partnership (Sussex Air), which produced an air quality strategic plan 2010 to 2015[5]. Wealden District Council contributed to the development of this strategy, which aims to provide a consistent approach to air quality across a number of district councils.

This plan has 5 key objectives:

1. Provide advice and support and improve the expertise and knowledge base
2. Project development and implementation
3. Partnership working
4. Develop cross cutting work on health improvement, climate change, environment and transport
5. Communicate air quality issues and initiatives in Sussex.

Wealden District Council has taken forward a number of direct measures during the current reporting year of 2018 in pursuit of improving local air quality and improving public awareness of air quality issues, in close collaboration with the Sussex Air Quality Partnership. Details of all measures completed, in progress or planned are set out in Table 2.2.

Key completed measures regarding awareness raising and transport related measures are:

1. Website improvements

   Wealden District Council supports the Sussex Air Quality website (http://www.sussex-air.net), which provides access to air quality statistics and relevant local information and improves public awareness of air quality.

2. Promotion of airAlert service

   Wealden District Council supports the airAlert air pollution warning service, offered by the Sussex Air Quality Partnership to vulnerable people, schools, health professionals and the general public in Sussex. The airAlert service provides warnings based on O_3 levels monitored inside the Wealden District both at Isfield and Lullington Heath. In June 2019 the service had 989 registered subscribers, 70 of which were from Wealden District.

[5] Sussex Air Quality Partnership Air Quality Strategic Plan 2010 http://www.sussex-air.net/Reports/SAQP_Vision_Strategy_2015.pdf

3. Local O_3 monitoring

   High O_3 levels can cause difficulty breathing in vulnerable people with existing lung or heart conditions. Wealden District Council monitors O_3 levels at their Isfield rural monitoring station. Data from this station is available on the Sussex-Air website and feeds the airAlert service.

4. Updated Guidance

   Wealden District Council contributed to the Air Quality and Emissions Mitigation Guidance for Sussex, first published in 2013 and revised in 2019[6]. The guidance is helping to mitigate potential air quality impacts from developments across Sussex. It is also contributing to public health by promoting active modes of transportation like walking, cycling and using public transport, as well as car clubs and car sharing. Additional mitigations are provided on the updated guidance including contribution to low emission vehicle refuelling infrastructure, low emission bus service provision or waste collection services, bike/e-bike hire service, contribution to renewable fuel and energy generation projects and incentives for the take-up of low emission technologies and fuels.

5. Energise Network.

   Energise was established as a public/private sector partnership by local authorities across Sussex, Surrey and Kent and was led by the Sussex Air Partnership, to help support the promotion of electric vehicle uptake in the region, by making access simpler. Electric car charging points are now located in the Wealden District at Selmeston Services (A27), Wealden District Council offices in Hailsham, Herstmonceux Integrated Health Centre, Crowborough Station, and Forest Row Parish Council.

Following the adoption of the Core Strategy Local Plan[7] in 2013, Wealden District Council has been assessing the air quality impacts of new traffic and development on protected natural habitats in the District, in particular the Pevensey Levels (Special Area of Conservation (SAC) and Ramsar site) and the Ashdown Forest (SAC and Special Protection Area (SPA)). The Local Plan was revised in January 2019 and the

[6] Air Quality and emissions mitigation guidance for Sussex(2019). Available at: http://www.sussex-air.net/Reports/Sussex_AQ_Guidance_2019.pdf
[7] Wealden District (Incorporating Part of the South Downs National Park) (2013). Core Strategy Local Plan. Available at: http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?lID=14756&sID=2829 .

submitted version[8] concludes that so far as the Pevensey Levels SAC and Ramsar Site are concerned, there is no adverse effect from air quality impacts of the Wealden Local Plan alone and in combination with other plans and projects (without the need for mitigation). Planning Policy AF2 in the updated Local Plan refers to Air Quality Mitigation for developments that result in the net increase in traffic movements across roads adjacent to Ashdown Forest SAC or Lewes Downs SAC. The package of measures includes air quality monitoring, reduction of local transport emissions, provision of electric charging points within public areas and provision of schemes to reduce the use of petrol and diesel vehicles. In order to mitigate the impacts of development, the Council:

- Supports provision of an off-line A27 to provide an alternative route to roads crossing the Ashdown Forest SAC and Lewes Downs SAC;
- Supports the reinstatement of the Lewes to Uckfield Train Line and an upgrade to Uckfield- Buxted - Crowborough- Tunbridge Wells Railway line including services; and
- Supports creation of Polegate Parkway Station/ or alternative parking capacity in South Wealden.

Key completed measures regarding protected habitats are:

1. Pevensey Levels Assessment

In 2009, Wealden District Council commissioned a study[9] to assess the predicted air quality impact on the Pevensey Levels due to increases in traffic on the A259 associated with planned population growth up to 2026. The conclusion was that an increase in nitrogen deposition and NOx concentrations is likely, but these will still be below the Critical Levels set by the Habitats Directive[10], therefore there is unlikely to be a significant effect on the SAC and Ramsar site.

[8] Wealden Local Plan- January 2019. Available at: http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?lID=25367&sID=6726

[9] Rother District Council, Hastings Borough Council. Wealden District Council and Eastbourne Borough Council (2009). Appropriate Assessment and Air Quality Local to the Pevensey Levels Ramsar Site. Available at: http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?lID=14305&sID=5509

[10] EC Habitats Directive 1992, interpreted into British law by the Conservation (Natural Habitats &c) Regulations 1994 (as amended in 2007).

2. Ashdown Forest Impact Mitigation

Wealden District Council currently screens all new development proposals for significant effects on levels of nitrogen deposition on Ashdown Forest, focusing on traffic emissions, and where appropriate, requires mitigation measures to be implemented[11]. The main mitigation strategy proposed by Wealden District Council is the identification of Suitable Alternative Natural Green Spaces (SANGS), and the implementation of a Strategic Access Management and Monitoring Strategy (SAMMS). In 2013, Wealden District Council published a guideline document[12] to help identify SANGS sites, and a guidance note[13] for small scale developments on reducing traffic impacts on Ashdown Forest.

3. Ashdown Forest monitoring

Wealden District Council is investigating the impact of nitrogen deposition upon the Ashdown Forest SAC, so that the effects of development can be more fully understood and mitigated as appropriate. The Air Quality Report[14] completed for Wealden District Council in 2013 proposed a methodology for air quality and ecological monitoring. On 30th April 2014, Wealden District Council awarded a contract to Ecus Ltd, supported by Air Quality Consultants Ltd, to implement a monitoring, modelling and assessment programme which will run for a number of years[15]. Monitoring began in the summer of 2014, and the Year 1 interim report has been published in February 2016[16]. Monitoring has now been completed, and the report based on the monitoring and modelling carried out by Air Quality Consultants[17] concludes that the critical load for nitrogen deposition is predicted to be exceeded across almost the entire SAC for many future scenarios assessed, and therefore

[11] Wealden District Council website. Ashdown Forest Special Protection Area, Special Area of Protection and Site of Special Scientific Interest. http://www.wealden.gov.uk/Wealden/Residents/Planning_and_Building_Control/Planning_Development_Management/Agents_and_Parish_Council_Information/Planning_Agents_Ashdown_Forest.aspx . Retrieved July 2016:

[12] Wealden District Council (2013). Guidelines for the creation of Suitable Alternative Natural Green Space (SANGS). Available at: http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?lID=13843&sID=3484

[13] Wealden District Council (2013). Guidance note on reducing nitrogen deposition at the Ashdown Forest Special Area of Conservation and Special Protection Area. Available at: http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?lID=12452&sID=3484

[14] Wealden District Council (2013). Ashdown Forest SAC. Method for Air Quality Monitoring and Assessment of Nitrogen Deposition .Available at: http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?lID=13088&sID=3484

[15] Wealden District Council website, Ashdown Forest Monitoring FAQs: http://www.wealden.gov.uk/Wealden/Residents/Planning_and_Building_Control/Planning_Policy/Evidence_Base/PPolicy_Ashdown_Forest_Monitoring_FAQs.aspx Retrieved July 2016.

[16] Air Quality Consultants (2016). Interim Report Year 1: Ashdown Forest Air Quality Monitoring and Modelling. http://www.wealden.gov.uk/Wealden/Residents/Planning_and_Building_Control/Planning_Policy/CoreStrategy/CoreStrategyLibrary/Planning_Evidence_Base_Habitat_Regulations_Assessment.aspx

[17] Air Quality Consultants (2018). Ashdown Forest Air Quality Monitoring and Modelling Volume 1, available at: http://www.wealden.gov.uk/Wealden/Residents/Planning_and_Building_Control/Planning_Policy/Evidence_Base/Planning_Evidence_Base_Habitat_Regulations_Assessment.aspx

careful consideration will be necessary when balancing the need for development and environment/habitat protection in the District.

Wealden District Council expects the following measures to continue over the course of the next reporting year:

1. Screening planning applications for air quality impacts based on the guidance documents;
2. Informing the public of high air pollution events via the Sussex Air website and the airAlert service;
3. Monitoring at LAQM sites (Ashdown Forest monitoring has been completed);
4. Supporting low emission vehicles through the Energise network.

New measures for 2017 into 2018 included the promotion of cycling on the Cuckoo Trail, a footpath and cycleway across the district along an old railway line, for which Wealden District Council is bidding for funding from the Department for Transport 'Active Access for Growth' (AAfG) programme. The Cuckoo Trail was promoted in 2018 with a range of activities for everyone which included health walks, family cycle rides and the 100 miles Cuckoo Trail Challenge.[18]

East Sussex County Council successfully bid for a £1.4m grant from the AAfG to deliver a programme of active travel across East Sussex from 2017-2020, and South Wealden is a focus growth area for the programme.

Two of the 4 key objectives of AAfG are:

- Demonstrate an alignment to health, air quality and reduced carbon emissions and improve air quality; and
- Increase walking and cycling by 2% per year and increase the proportion of people completing 30 minutes of physical activity/day.

Project applications will be required to meet with the overall AAfG programme objectives of local economic growth and increased levels of physical activity through:

- Increasing the number of people walking or cycling to work, education or training establishments;

[18] Celebrating The Cuckoo Trail 2018. Available at http://www.wealden.gov.uk/Wealden/Council/News_and_Events/News/News_030CelebratingtheCuckooTrail435349.aspx

- Providing support to people who are physically inactive, and those with chronic health conditions and who want to increase their levels of physical activity;
- Increasing travel choices for people who are long term unemployed to access work.

Wealden DC is also working with East Sussex County Council (ESCC) to improve local air quality through the local Transport Plan (LTP3)[19].

Wealden's strategic planning objective SPO7 (Sustainable Transport) as appropriate within the Core Strategy relates to promoting sustainable travel and reducing the need to travel by car which reflects the overall objectives of Local Transport Plan.

In Uckfield, further significant developments at Ridgewood (1,000 new homes and additional employment/retail development) will add strain to the existing road network – to that end, improvements have been made to Uckfield town centre and Uckfield Railway Station, including improvements to the High Street to make it more attractive for pedestrians, cyclists and bus users and enhancement of Uckfield bus station. These works are being funded from development contributions from residential developments already completed.

Further improvements to improve access for pedestrians, cyclists and public transport users from residential areas to the town centre and other key trip attractors in the town are required and will augment the investment already being made in the town centre enhancements.

Further actions included in the Local Transport Plan relevant to Wealden include:

- Improvements to the Hempstead Lane junction to alleviate traffic congestion on the A271 and Hailsham town centre;
- Enhancements to the Cuckoo trail cycle and pedestrian route to Eastbourne;
- Improvements for all road users including public transport along the A2270 corridor into Eastbourne town centre;
- Bus Corridor improvements on the A259 and A2021.

[19] Available at: https://www.eastsussex.gov.uk/roadsandtransport/localtransportplan/ltp3/downloadltp3

In relation to the Ashdown Forest Special Protection Area (SPA)[20], from within the Local Plan, air quality mitigation measures are necessary for identified development within the Plan to take place if they lead to an increase in local traffic movements, including financial contributions and other measures including appropriate electric vehicle charging infrastructure, guaranteed high speed broadband connections and the provision of electric public transport, cycling and walking schemes to reduce the use of petrol and diesel vehicles.

The Council will also work with Natural England, the Department for Environment, Food and Rural Affairs (Defra) and neighbouring authorities to jointly progress a Site Nitrogen Action Plan (SNAP), which will proactively seek to further reduce levels of nitrogen deposition over the longer term.

Wealden District Council's priorities for the coming year are to continue to implement changes to transport networks and road layout, and policies to keep shifting towards more sustainable forms of transport. Wealden will continue to monitor air quality across the district and keep the public informed, and will continue to protect public health by providing real-time O_3 measurements on the Sussex Air website and alerting the general public in advance of pollution events through the airAlert service.

The principal challenge that Wealden District Council anticipates facing is balancing the planned population growth in the District with conservation of the natural habitats that constitute most of the District's territory. Wealden District Council will address this challenge by managing a sustainable level of development, and monitoring pollution impacts on conservation areas such as Ashdown Forest.

[20] Wealden Habitats Directive AQ Reports for Ashdown Forest, available at: http://www.wealden.gov.uk/Wealden/Residents/Planning_and_Building_Control/Planning_Policy/CoreStrategy/CoreStrategyLibrary/Planning_Evidence_Base_Habitat_Regulations_Assessment.aspx

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
1	Air Quality and Emissions Mitigation Guidance for Sussex	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Sussex Air Quality Partnership	N/A	2014	N/A	N/A	Guidance revised in 2019	2014	Under review by the partnership.
2	Air Quality Strategic Plan 2010	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	Sussex Air Quality Partnership	N/A	2010 - 2015	N/A	N/A	Completed - Plan published and currently implemented	2010	None.
3	Sussex Air website	Public Information	Via the Internet	Sussex Air Quality Partnership	N/A	2012-ongoing	N/A	N/A	The website is online and reporting on monitored pollution levels	2012 - Ongoing	Under review by the partnership.
4	airAlert	Public Information	Via other mechanisms	Sussex Air Quality Partnership	N/A	2011 - Ongoing	989 registered subscribers, 70 from Wealden District	N/A	The service is running and the number of subscribers increasing every year	2011 - Ongoing	None.
5	Energise Network	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	Sussex Air Quality Partnership and various LAs in Sussex & Kent	N/A	2014 - Ongoing	5 charging points installed in Wealden District	N/A	The service is running, and several charging points are available in Wealden District	2014 - Ongoing	None.

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
6	SANGS guidelines	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Wealden District Council	N/A	2013	N/A	N/A	Guideline document to help identify SANGS sites published.	2013	None.
7	Nitrogen Reduction Guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Wealden District Council	N/A	2013	N/A	N/A	Guidance note published for small scale developments on reducing traffic impacts on Ashdown Forest.	2013	None.
8	Ashdown Forest Monitoring	Other	Other	Wealden District Council	2013	2014 - 2017	N/A	N/A	Monitoring started 2014	2017	None.
9	Publicly available advice on sustainability	Public Information	Via the Internet	Wealden District Council	N/A	2017 - ongoing	N/A	N/A	The website is online and fully available and includes policies on Sustainable Transport and Climate Change.	2017 - ongoing	None.
10	Encouraging home working using IT solutions	Promoting Travel Alternatives	Encourage / Facilitate home-working	Wealden District Council	N/A	2017 - ongoing	N/A	N/A	IT solutions in place for WDC staff wishing to home-work	2017 - ongoing	None.
11	Employee tax incentive scheme for purchasing bikes	Promoting Travel Alternatives	Promotion of cycling	Wealden District Council	N/A	2017 - ongoing	N/A	N/A	Regular Workplace Health initiatives with Sustrans to encourage cycling including tax incentive via salary sacrifice scheme	2017 - ongoing	None.
12	Car sharing for employees and associated priority staff parking	Promoting Travel Alternatives	Workplace Travel Planning	Wealden District Council	N/A	2017 - ongoing	N/A	N/A	Ongoing Regular workplace health initiatives to encourage walking. Priority for car sharers for parking.	2017 - ongoing	None.

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
13	Implementation of ESCC Local Transport Plan 3	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	East Sussex County Council & Wealden District Council	pre-2016	2016 - 2021	N/A	N/A	Ongoing	2016 - ongoing	Under review
14	Bus route improvements in Wealden	Transport Planning and Infrastructure	Bus route improvements	East Sussex County Council & Wealden District Council	pre-2016	2016 - 2021	N/A	N/A	Ongoing	2016 - ongoing	Under review
15	Cycle network improvements in Wealden	Transport Planning and Infrastructure	Cycle network	East Sussex County Council & Wealden District Council	pre-2016	2016 - 2021	N/A	N/A	Ongoing	2016 - ongoing	Under review
16	Public transport improvements in Wealden	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	East Sussex County Council & Wealden District Council	pre-2016	2016 - 2021	N/A	N/A	Ongoing Infrastructure projects to be funded wholly or partly by CIL Chargeable Development for improvements to release additional road capacity and road safety measures.	2016 - ongoing	Under review
17	Introduction of tariffs for new developments to reduce the impact of cumulative	Policy Guidance and Development Control	Other policy	Wealden District Council	N/A	2018- ongoing	N/A	N/A	Ongoing	2018-Ongoing	None

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
	development upon the Ashdown Forest SPA/SAC										
18	Commitment to a sustainable procurement strategy	Policy Guidance and Development Control	Sustainable Procurement Guidance	Wealden District Council	N/A	2014	N/A	N/A	WDC encourages key suppliers to demonstrate an awareness of sustainability issues and to promote practices that are consistence with their policies. [21]	2014-2017	None
19	Promote health activities and encourage public to participate	Public Information	Via Other	Wealden District Council	N/A	2018	N/A	N/A	Introduced various 'Healthy Wealden' activities to encourage use of the Cuckoo Trail in 2018	2018-Ongoing	None

[21] Wealden Procurement Strategy. http://www.wealden.gov.uk/Wealden/Business/Tenders_and_Procurement/Procurement_Selling_to_Wealden_District_Council.aspx

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

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

Wealden District Council currently does not undertake $PM_{2.5}$ monitoring within the district. Concentrations monitored at the Holly Place urban background site in Eastbourne indicate that levels are well within required levels.

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

- Supporting the Energise Network of electric vehicle charging points, together with the Sussex Air Quality Partnership;
- Requiring the assessment of $PM_{2.5}$ as part of Air Quality Assessments for planning applications.

Further measures will be considered in future years.

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

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

During 2018, automatic (continuous) monitoring was undertaken at two sites in Wealden District: Isfield (for O_3) and Lullington Heath (for NO_2, SO_2 and O_3). Particulate matter (PM_{10} and $PM_{2.5}$) was not monitored in the district, so this report includes the results from two sites in the neighbouring Eastbourne District: Devonshire Park and Holly Place for information. Table A.1 in Appendix A shows the details of the sites.

Wealden - Lullington Heath and Eastbourne - Holly Place are part of the Automatic Urban and Rural Network (AURN), managed by the Environment Agency. National monitoring results are available at https://uk-air.defra.gov.uk/.

Wealden - Isfield and Eastbourne - Devonshire Park are part of the Sussex Air Quality Monitoring Network (SAQMN), managed on behalf of Sussex Air by King's College London Environmental Research Group (KCL-ERG). Regional monitoring results are available at www.sussex-air.net.

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

3.1.2 Non-Automatic Monitoring Sites

Wealden District Council undertook non- automatic (passive) monitoring of NO_2 at 10 sites during 2018. Table A.2 in Appendix A shows the details of the sites.

The towns of Crowborough and Uckfield each contain one roadside site (W2 and W4 respectively) and two urban background sites (W1 and W3), whilst two roadside sites are operated in Polegate (W5) and Hailsham (W6, installed in 2012). The original diffusion tube network has been operational since 2001. Two further roadside sites (W7 and W8) – previously operated by ESCC – are currently maintained by Wealden

District Council. Due to site W7 not being representative of relevant exposure and being difficult to access, the decision was taken to relocate the site further down the same road and nearer to residential properties as a kerbside location in March 2017. Two new diffusion tube sites were also added in May 2017. One is at a kerbside location (W10) on the main road (A22) that runs through Forest Row. The other is a background location at 14 Riverside, Forest Row (W9).

Data capture for 2018 was generally good; the lowest data capture during the monitoring period was 75%, recorded at diffusion tube location W1.

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

3.2 Individual Pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

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

For diffusion tubes, the full 2018 dataset of monthly mean values is provided in Appendix B.

The results indicate that the annual mean NO_2 concentrations at the Wealden - Lullington Heath and Eastbourne - Holly Place automatic monitoring sites were both well within the UK air quality objective (40 µg/m^3) in 2018. No valid data was available from the Eastbourne - Devonshire Park station for 2015 or 2016; however, annual mean NO_2 concentrations between 2017 and 2018, were well below the annual mean objective.

After correcting for distance to the nearest sensitive receptors, the monitored annual mean NO_2 concentrations in 2018 ranged from 11.1 µg/m^3 (location W9) to 32.2 µg/m^3 (location W10), below the objective of 40 µg/m^3.

For diffusion tubes, the full 2018 dataset of monthly mean values is provided in Appendix B, which includes the distance-corrected concentrations.

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

Neither of the automatic monitoring sites exceeded the 200 µg/m^3 standard on any occasion in 2018, nor in any year since 2012. The results indicate that the 1-hour NO_2 air quality objective is unlikely to be exceeded at any location in the district.

Diffusion tubes do not provide hourly measurements of NO_2; however, the Defra Technical Guidance states that where annual mean NO_2 concentrations measured by diffusion tubes exceed 60 µg/m^3 there is a likelihood that the 1-hour objective may be exceeded. All of the annual mean NO_2 concentrations at diffusion tube monitoring locations between 2012 and 2018, inclusive, were well below 60 µg/m^3 and so the 1-hour objective is very unlikely to have been exceeded.

Figure 1 shows the trend in NO_2 concentrations monitored at the Wealden - Lullington Heath, Eastbourne - Devonshire Park and Eastbourne - Holly Place automatic monitoring stations. The results indicate there is a gradual downward trend in NO_2 concentrations over the time period shown, with little variation from year to year. Concentrations have also been well below the annual mean air quality objective of 40 µg/m^3 in all years.

Figure 1: Trends in Annual Mean NO_2 Concentrations measured at Automatic Monitoring Sites

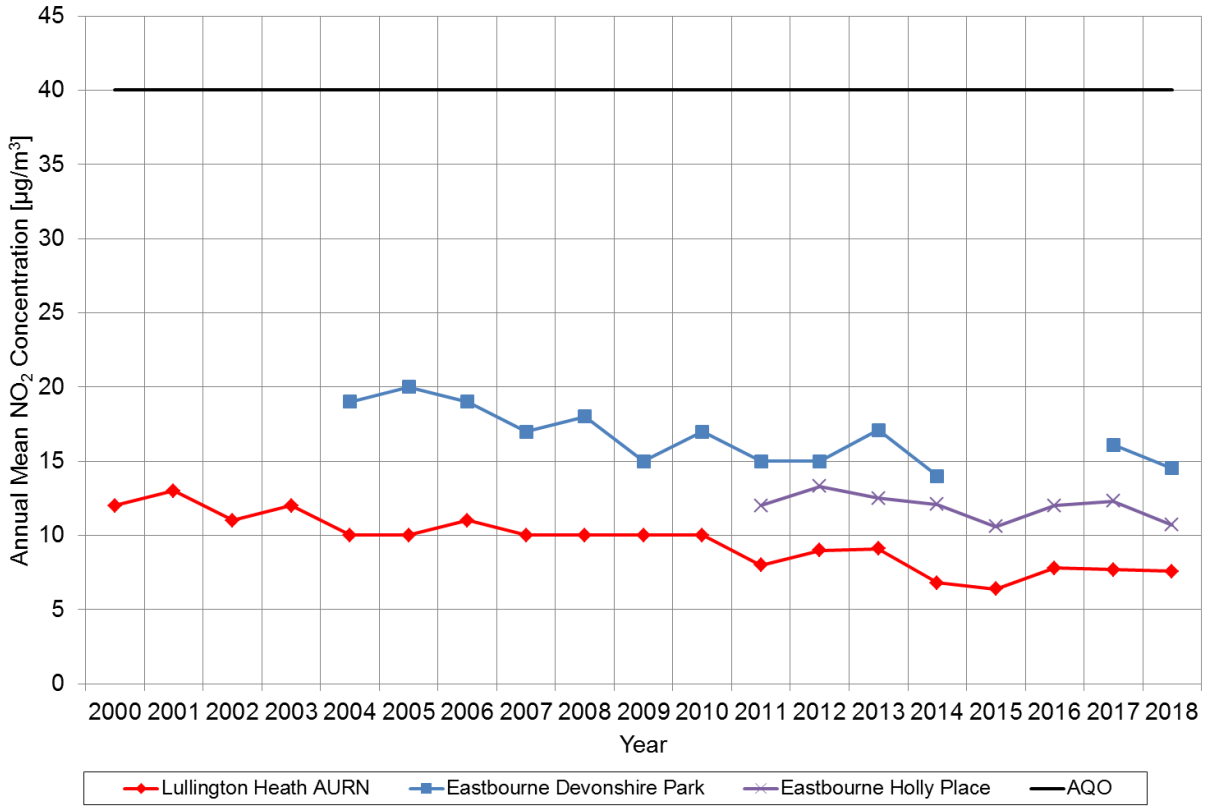


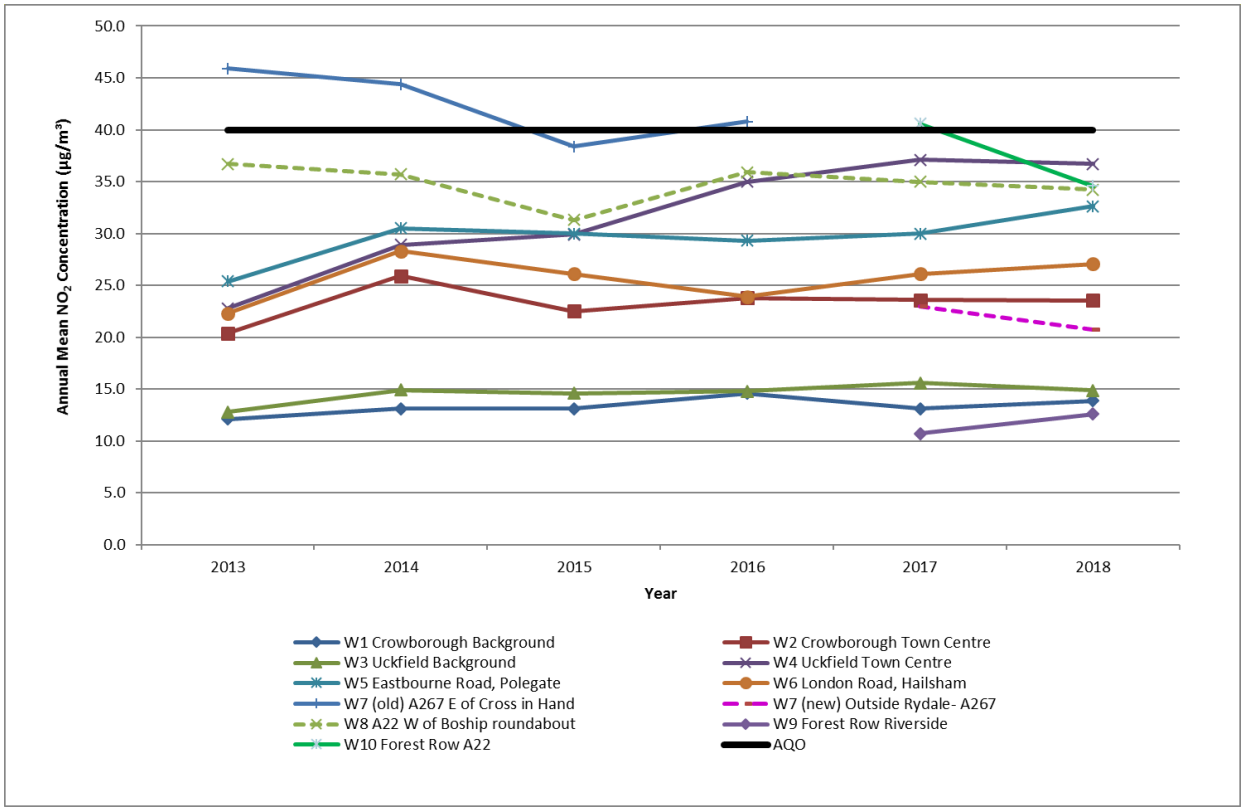
Figure 2 shows trends in annual mean NO_2 concentrations measured at non-automatic (diffusion tube) sites. The W7 (A267 East of Cross in Hand) and W8 (A22 West of Boship Roundabout) sites are located outside town centres by busy A-roads, and have historically recorded the highest values. They showed a trend for gradually decreasing concentrations between 2013 and 2015, although concentrations were higher again in 2016, and also 2017 (for W8 only). Due to general difficulties accessing the W7 site, this site was relocated in 2017 to a new location (outside Rydale, A267), where the concentration monitored in 2017 and 2018 are much lower (23.0 µg/m^3 and 20.8 µg/m^3 respectively) than in previous years at the A267 East of Cross in Hand location, and more representative of relevant exposure.

In addition, annual mean NO_2 concentrations at W4 (Uckfield Town Centre), have increased significantly between 2013 (22.8 µg/m^3) and 2018 (36.7 µg/m^3).

At other roadside sites, there has been some year-to-year variability, but generally no significant increasing or decreasing trend in concentrations. Annual average NO_2 concentrations at the background diffusion tube sites (W1 and W3), also show very little overall trend. The trend in concentrations at the new background site, W9,

increased from 10.7 µg/m^3 in 2017 to 12.6 µg/m^3 in 2018 and will be monitored over the coming years

Figure 2: Trends in Annual Mean NO_2 Concentrations measured at Diffusion Tube Monitoring Sites



3.2.2 Particulate Matter (PM_{10})

There has been no PM_{10} monitoring undertaken within the Council's area. Concentrations monitored at two urban background sites in Eastbourne (Devonshire Park and Holly Place) are therefore provided for indicative purposes. No data are available for Eastbourne Holly Place for 2017 and 2018 as the PM_{10} analyser was withdrawn on 4th January 2017.

Table A.5 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3. The results indicate that annual mean PM_{10} concentrations were well below the UK air quality objective between 2014 and 2018.

Figure 3 shows the trend in annual mean PM_{10} concentrations. A slight decreasing trend is apparent from concentrations recorded at Holly Place between 2010 and 2016, but with considerable year on year variability. However, the longer-term data (2001 to 2014 and 2017 to 2018) at Devonshire Park shows a varying trend with an increase from 2004 to 2011 and decrease from 2011 to 2018. Concentrations have been consistently well below the annual mean air quality objective.

Figure 3: Trends in Annual Mean Particulate Matter (PM_{10}) Concentrations measured at Automatic Monitoring Sites

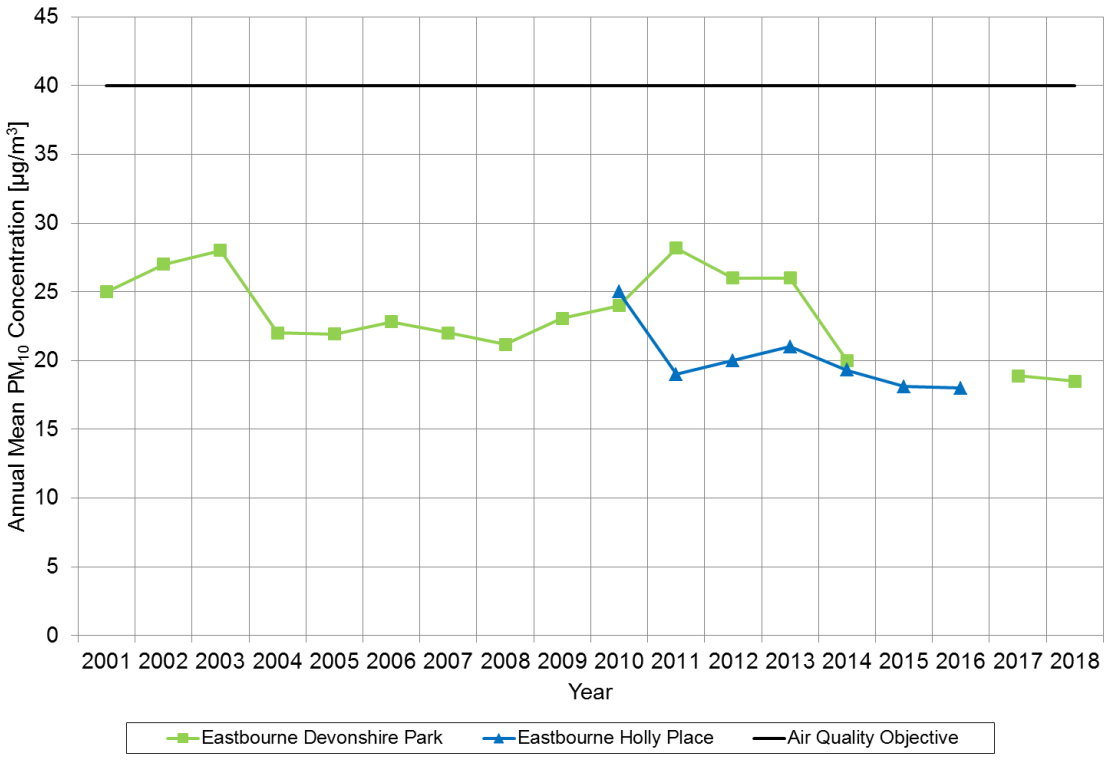
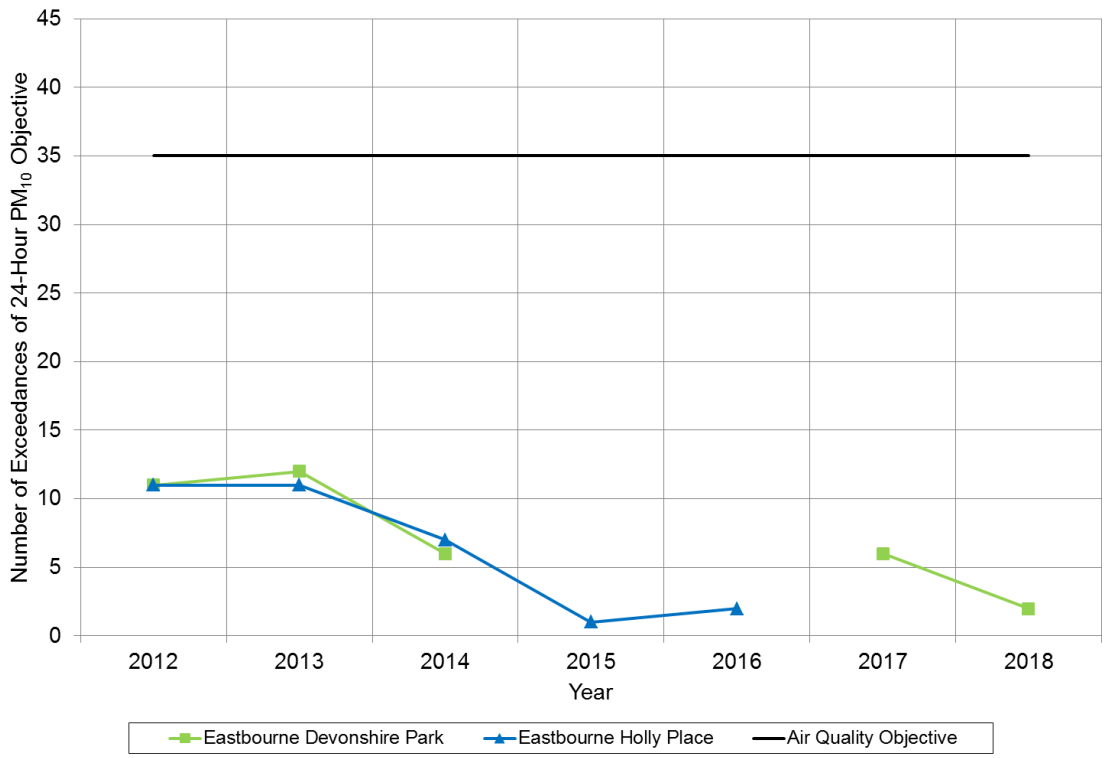


Table A.6 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past 5 years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year. These results show that both Eastbourne sites achieved the daily PM_{10} objective every year from 2014 to 2018.

Figure 4 shows the trend in number of exceedances of the daily mean PM_{10} objective. The number of days which exceeded the objective has generally been decreasing at both sites between 2012 and 2018.

Figure 4: Trends in Number of Exceedances of the 24-Hour Mean Particulate Matter (PM_{10}) Objective measured at Automatic Monitoring Sites



3.2.3 Particulate Matter ($PM_{2.5}$)

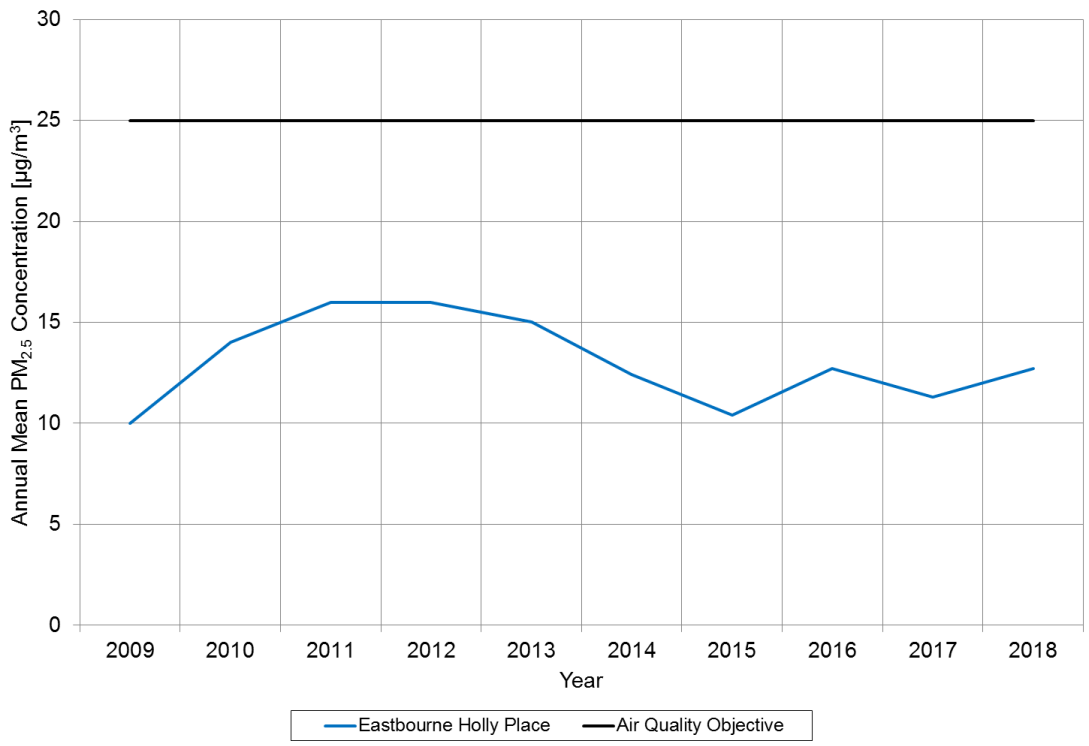
There is no $PM_{2.5}$ monitoring undertaken within Wealden District. Concentrations monitored at the Holly Place urban background site in Eastbourne are therefore provided for indicative purposes.

Table A.7 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past 5 years. Between 2014 and 2018, the measured

levels have varied between 10.4 µg/m^3 and 12.7 µg/m^3, below the Air Quality Objective of 25 µg/m^3.

Figure 5 shows the trend in annual mean $PM_{2.5}$ concentrations. No clear trend is evident in the results between 2009 and 2018.

Figure 5: Trends in Annual Mean Particulate Matter ($PM_{2.5}$) Concentrations measured at Automatic Monitoring Sites



3.2.4 Sulphur Dioxide (SO_2)

Table A.8 in Appendix A compares the ratified continuous monitored SO_2 concentrations at the Lullington Heath rural site for 2018 with the air quality objectives for SO_2. There have been no exceedances in 2018 of any of the three UK Air Quality Objectives for SO_2 (15-minute, 1-hour and 24-hour). Further details about the SO_2 objectives are reported in Appendix E.

3.2.5 Ozone (O_3)

Table A.9 in Appendix A presents the ratified continuous monitored annual mean O_3 concentrations for the past 5 years at the Isfield and Lullington Heath rural sites. Between 2014 and 2018, the annual mean concentrations monitored at Isfield have been between 46.2 µg/m^3 and 53.3 µg/m^3, and at Lullington Heath between

54.4 µg/m^3 and 61.1 µg/m^3. There is no annual mean objective or target value for annual mean O_3 concentration.

Figure 6 shows the trend in annual mean O_3 concentrations at the two monitoring stations. No clear trend is evident in the results at Isfield between 2011 and 2018, while a slight increase has been observed at Lullington Heath. Both sites show increase in concentrations in 2017 and 2018.

Figure 6: Trends in Annual Mean O_3 Concentrations measured at Automatic Monitoring Sites

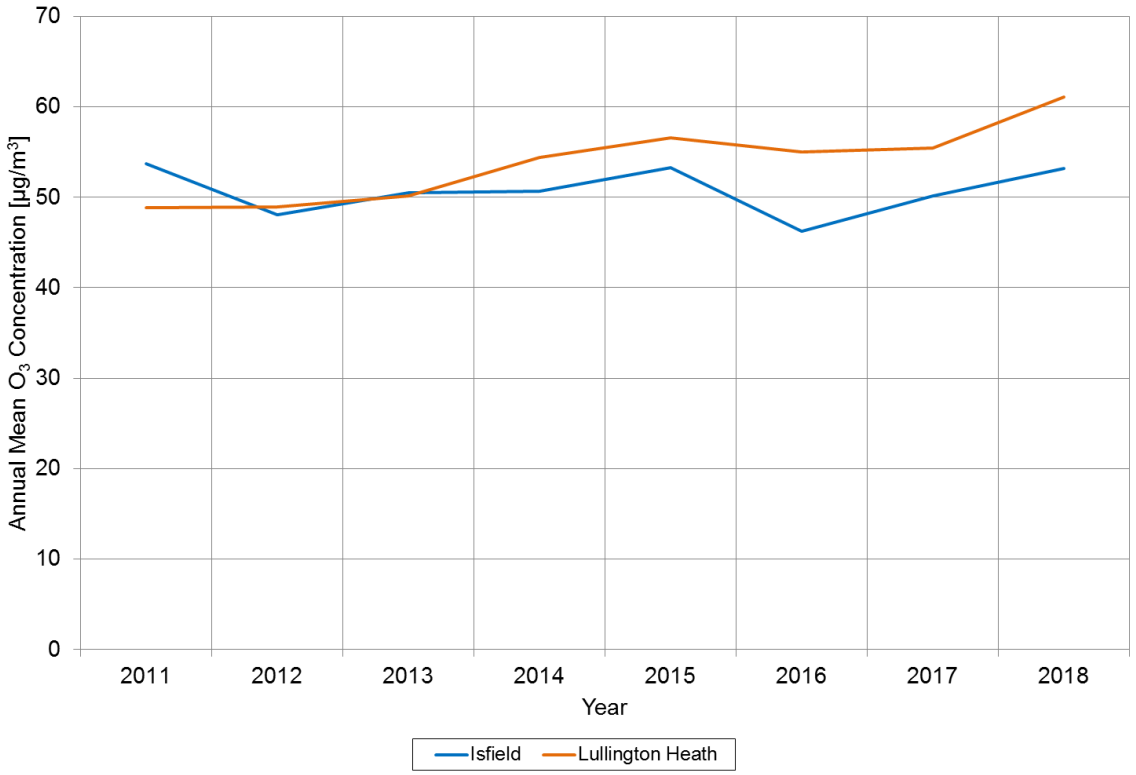
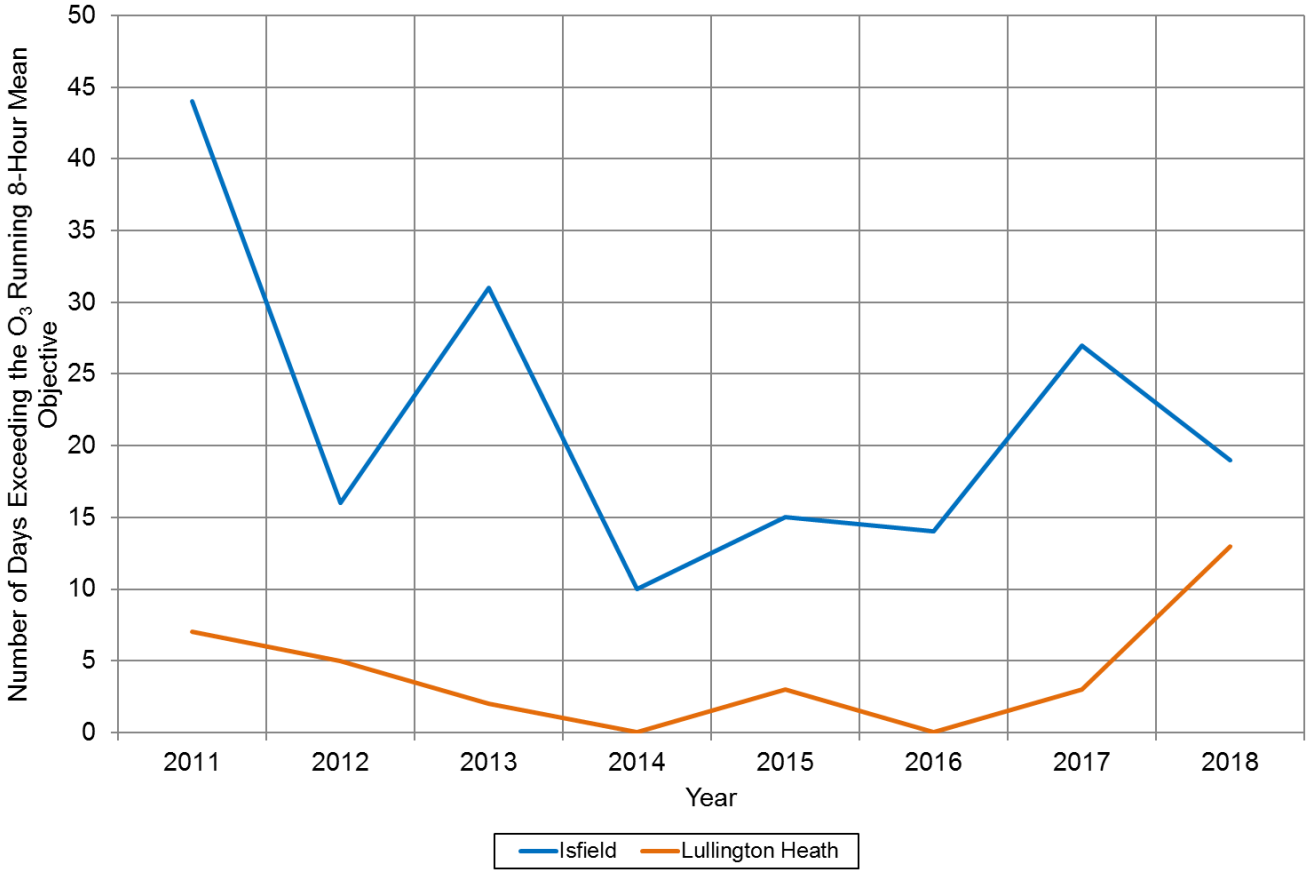


Table A.10 in Appendix A compares the ratified continuous monitored O_3 running 8-hour mean concentrations for the past 5 years with the UK air quality objective of 100 µg/m^3, not to be exceeded on more than 10 days per year. The monitoring results show that the Isfield station exceeded the O_3 objective every year from 2013 to 2018, except for 2014. The Lullington Heath station has measured days exceeding the objective in 2012, 2013, 2015 and 2017, but less than the 10 days allowed. In 2018, the number of days exceeding the O_3 running 8- hour mean was 13 for Lullington Heath and 19 for Isfield Station.

Figure 7 shows the trend in number of days exceeding the O_3 objective. Isfield Station shows a varying trend with sharp increases in 2013 and 2017. Lullington

Heath Station shows an overall decreasing trend between 2011 and 2016 and an increase between 2016 and 2018.

Figure 7: Trends in Number of Days Exceeding the Running 8-Hour Mean Ozone (O_3) Objective



Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
LL1	Lullington Heath AURN	Rural	553855	101740	NO_2; SO_2; O_3	NO	Chemiluminiscence; UV Fluorescence; UV Absorption	> 1000	> 1000	3
AR2	Wealden - Isfield	Rural	544890	117380	O_3	NO	UV Absorption	60	20	2
EB1	Eastbourne - Devonshire Park	Urban Background	561180	98360	NO_2; PM_{10}; O_3	NO	Chemiluminiscence; FDMS; UV Absorption	40	10	1.5
EB3	Holly Place AURN	Urban Background	560085	103118	NO_2; PM_{10}; $PM_{2.5}$	NO	Chemiluminiscence; TEOM FDMS; TEOM FDMS	10	10	4

Notes:

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

(2) N/A if not applicable.

Table A.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
W1	Crowborough Background	Urban Background	552591	130667	NO_2	NO	7.5	2	NO	2.5
W2	Crowborough Town Centre	Roadside	551626	131090	NO_2	NO	7.5	2	NO	2.5
W3	Uckfield Background	Urban Background	547828	121954	NO_2	NO	15	1	NO	2.5
W4	Uckfield Town Centre	Roadside	547250	120977	NO_2	NO	7.5	2	NO	2.5
W5	Eastbourne Road, Polegate	Roadside	558079	104481	NO_2	NO	13	1	NO	2
W6	London Road, Hailsham	Roadside	558845	109783	NO_2	NO	0.5	1	NO	2.5
W7(3)	Outside Rydale- A267	Kerbside	557503	121318	NO_2	NO	7.5	1	NO	2
W8	A22 W of Boship roundabout	Roadside	556933	111165	NO_2	NO	8	2	NO	2
W9	Forest Row Riverside	Background	542336	135324	NO_2	NO	5	0.1	NO	2
W10	Forest Row A22	Kerbside	542464	135279	NO_2	NO	1	2	NO	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.

(3) Location of W7 was moved in 2017 as previous location deemed unsafe.

Table A.3 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	NO_2 Annual Mean Concentration (µg/m³) (3)				
					2014	2015	2016	2017	2018
LL1	Rural	Automatic	99	99	6.8	6.4	7.8	7.7	7.6
EB1	Urban Background	Automatic	98	98	14	-	-	16.1	14.5
EB3	Urban Background	Automatic	52	52	12.1 (11.8)	10.6	12	12.3	10.7
W1	Urban Background	Diffusion Tube	75	75	13.1	13.1	14.6	13.1	13.9
W2	Roadside	Diffusion Tube	91.7	91.7	25.9	22.5	23.8	23.6	23.6
W3	Urban Background	Diffusion Tube	91.7	91.7	14.9	14.6	14.8	15.6	14.9
W4	Roadside	Diffusion Tube	91.7	91.7	28.9	29.9	35	37.1	36.7
W5	Roadside	Diffusion Tube	100.0	100.0	30.5	30	29.3	30.0	32.6
W6	Roadside	Diffusion Tube	100.0	100.0	28.3	26.1	23.9	26.1	27.1
W7(4)	Kerbside	Diffusion Tube	83.3	83.3	**44.4**	38.4	**40.8**	23.0	20.8
W8	Roadside	Diffusion Tube	91.7	91.7	35.7	31.3	35.9	35.0	34.2
W9	Urban Background	Diffusion Tube	100.0	100.0	-	-	-	10.7	12.6
W10	Kerbside	Diffusion Tube	100.0	100.0	-	-	-	**40.6**	34.6

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

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

Notes:

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

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

(1) 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.

(4) Location of W7 was moved in 2017 as previous location deemed unsafe.

Figure A.1 – Trends in Annual Mean NO_2 Concentrations

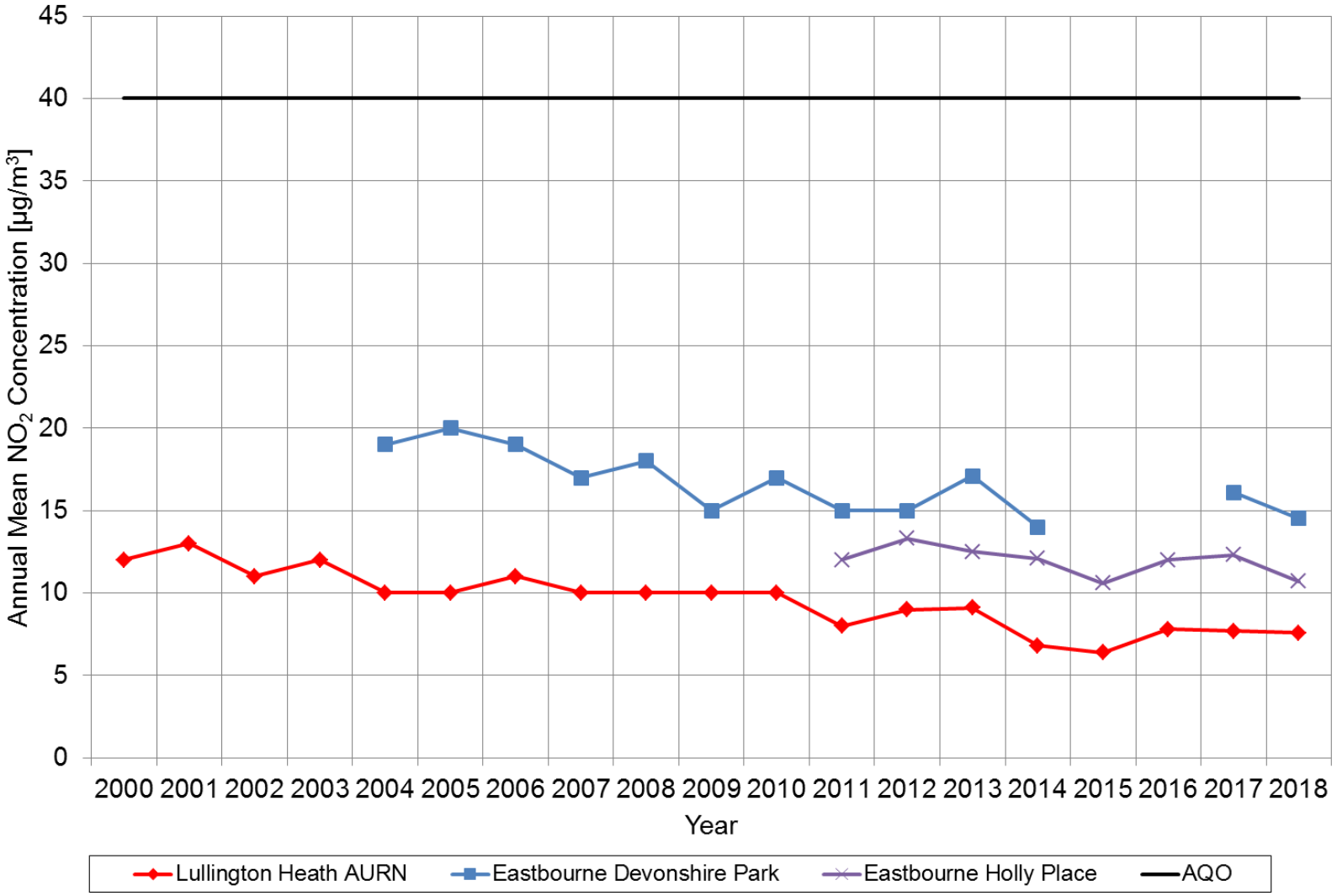


Table A.4 – 1-Hour Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
					2014	2015	2016	2017	2018
LL1	Rural	Automatic	99	99	0 (43)	0 (42.7)	0	0	0
EB1	Urban Background	Automatic	98	98	0	-	-	0 (68.9)	0
EB3	Urban Background	Automatic	52	52	0 (67.8)	0 (62)	0	0	0(59.8)

Notes:

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

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

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

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

Table A.5 – Annual Mean PM_{10} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	PM_{10} Annual Mean Concentration (µg/m³) (3)				
				2014	2015	2016	2017	2018
EB1	Urban Background	92.1	92.1	19.8	-	-	18.9	18.5
EB3	Urban Background	0	0	19.3	18.1	18	-	-

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

Notes:

Exceedances of the PM_{10} annual mean objective of 40µg/m³ are shown in **bold.**

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

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

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

Figure A.2 – Trends in Annual Mean PM_{10} Concentrations

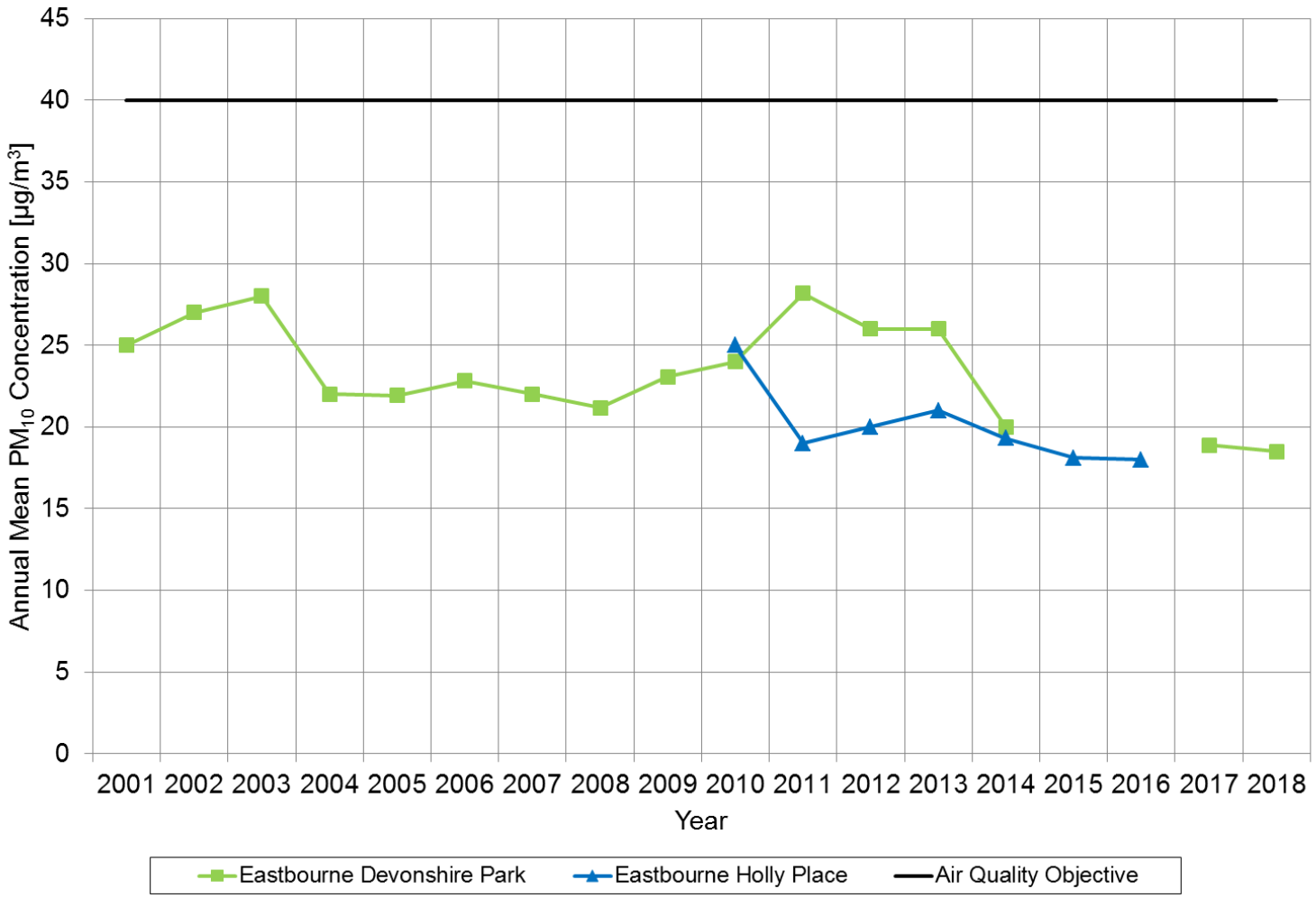


Table A.6 – 24-Hour Mean PM_{10} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	PM_{10} 24-Hour Means > 50µg/m^3 (3)				
				2014	2015	2016	2017	2018
EB1	Urban Background	92.1	92.1	6 (32.9)	-	-	0 (22)	2
EB3	Urban Background	0	0	7 (29.1)	1 (26)	2	-	-

Notes:

Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 not to be exceeded more than 35 times/year) are shown in **bold.**

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

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

(3) If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

Figure A.3 – Trends in Number of 24-Hour Mean PM_{10} Results >50µg/m^3

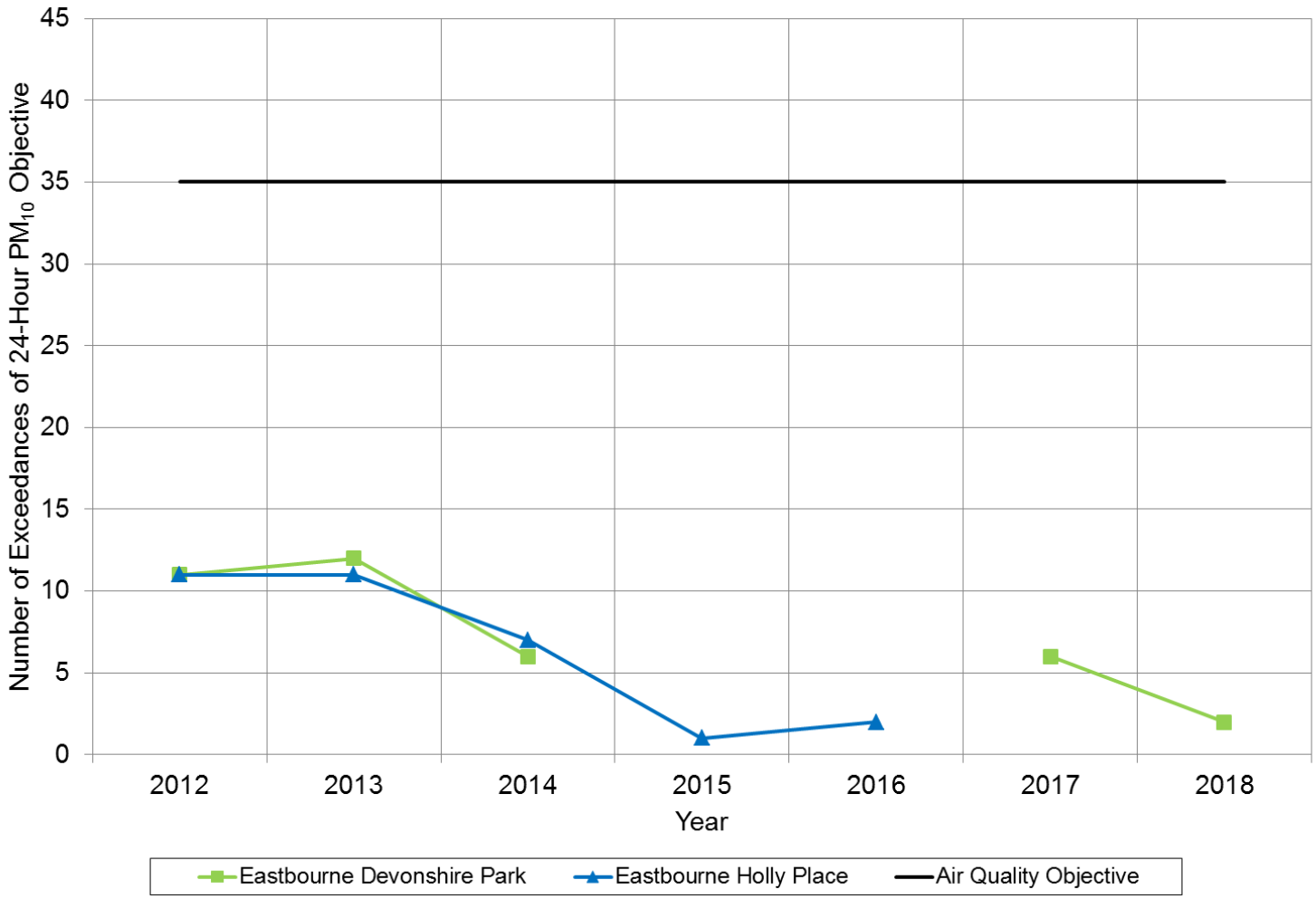


Table A.7 – $PM_{2.5}$ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	$PM_{2.5}$ Annual Mean Concentration (µg/m³) (3)				
				2014	2015	2016	2017	2018
EB3	Urban Background	98.1	98.1	12.4	10.4 (12.3)	12.7 (14.4)	11.3	12.7

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

Notes:

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

Figure A.4 – Trends in Annual Mean $PM_{2.5}$ Concentrations

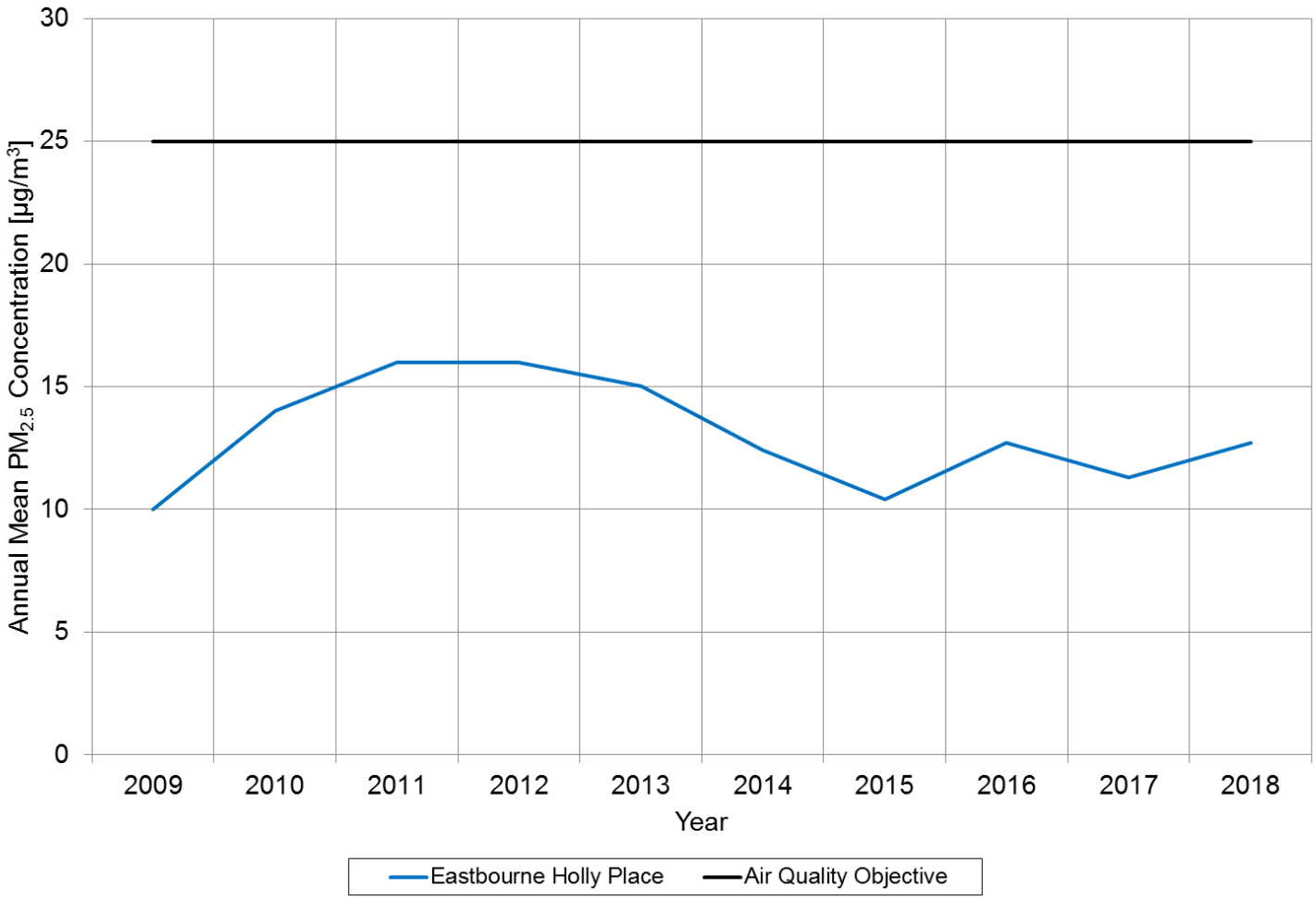


Table A.8 – SO_2 Monitoring Results

Site ID	Site Type	Valid Data Capture for monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	Number of Exceedances 2018 (percentile in bracket) (3)		
				15-minute Objective (266 µg/m³)	1-hour Objective (350 µg/m³)	24-hour Objective (125 µg/m³)
LL1	Rural	100	100	0 (13.0)	0 (10.9)	0 (8.3)

Notes:

Exceedances of the SO_2 objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year)

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

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

(3) If the period of valid data is less than 85%, the relevant percentiles are provided in brackets.

Table A.9 – Annual Mean O_3 Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	O_3 Annual Mean Concentration (µg/m³) (3)				
				2014	2015	2016	2017	2018
AR2	Rural	99	99	50.7	53.3	46.2	50.1	53.2
LL1	Rural	94	94	54.4	56.6	55	55.4	61.1

Notes: (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) All means have been "annualised" as per Technical Guidance LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A.5 – Trends in Annual Mean O_3 Concentrations

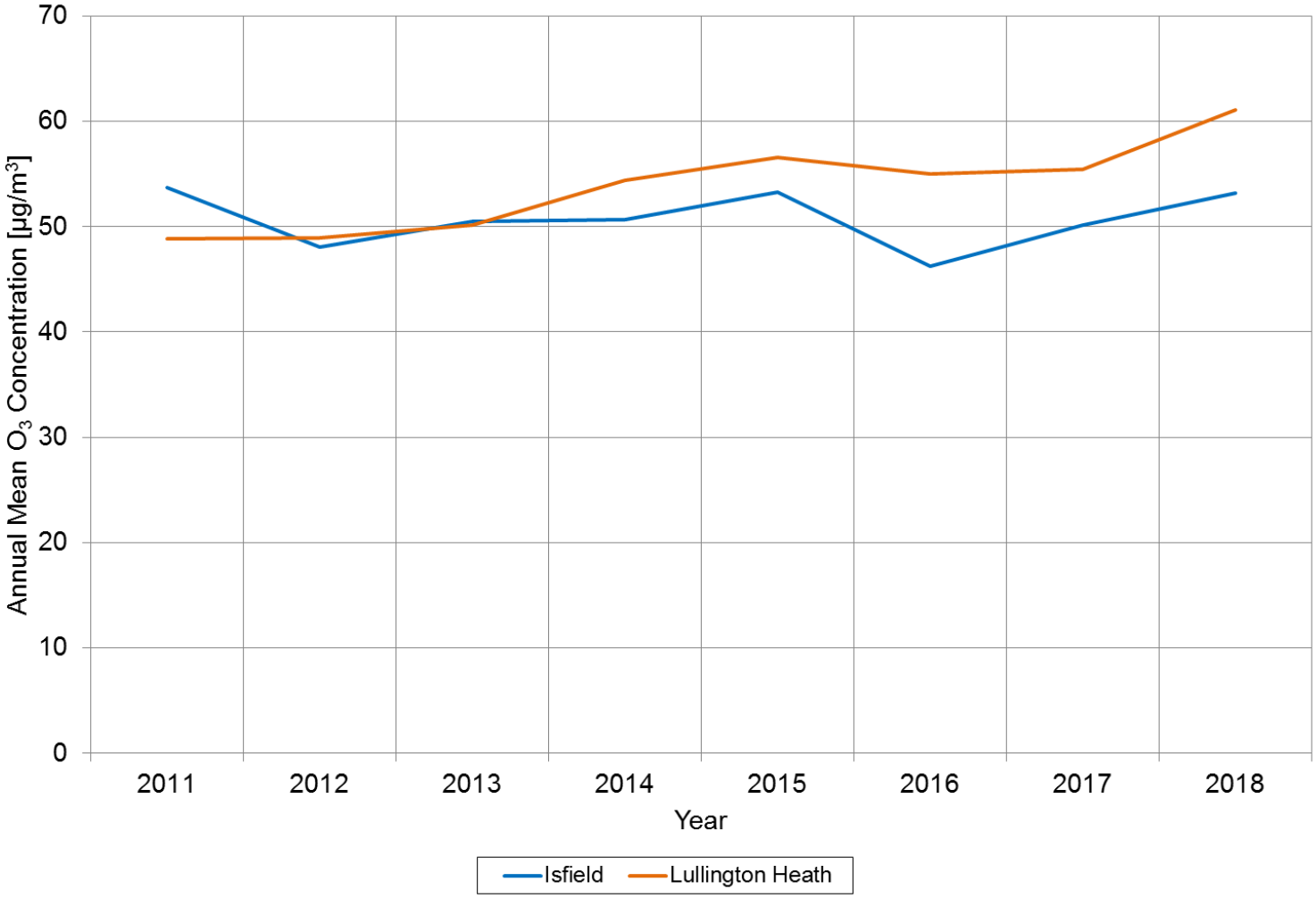


Table A.10 – Running 8-Hour Mean O_3 Monitoring Results

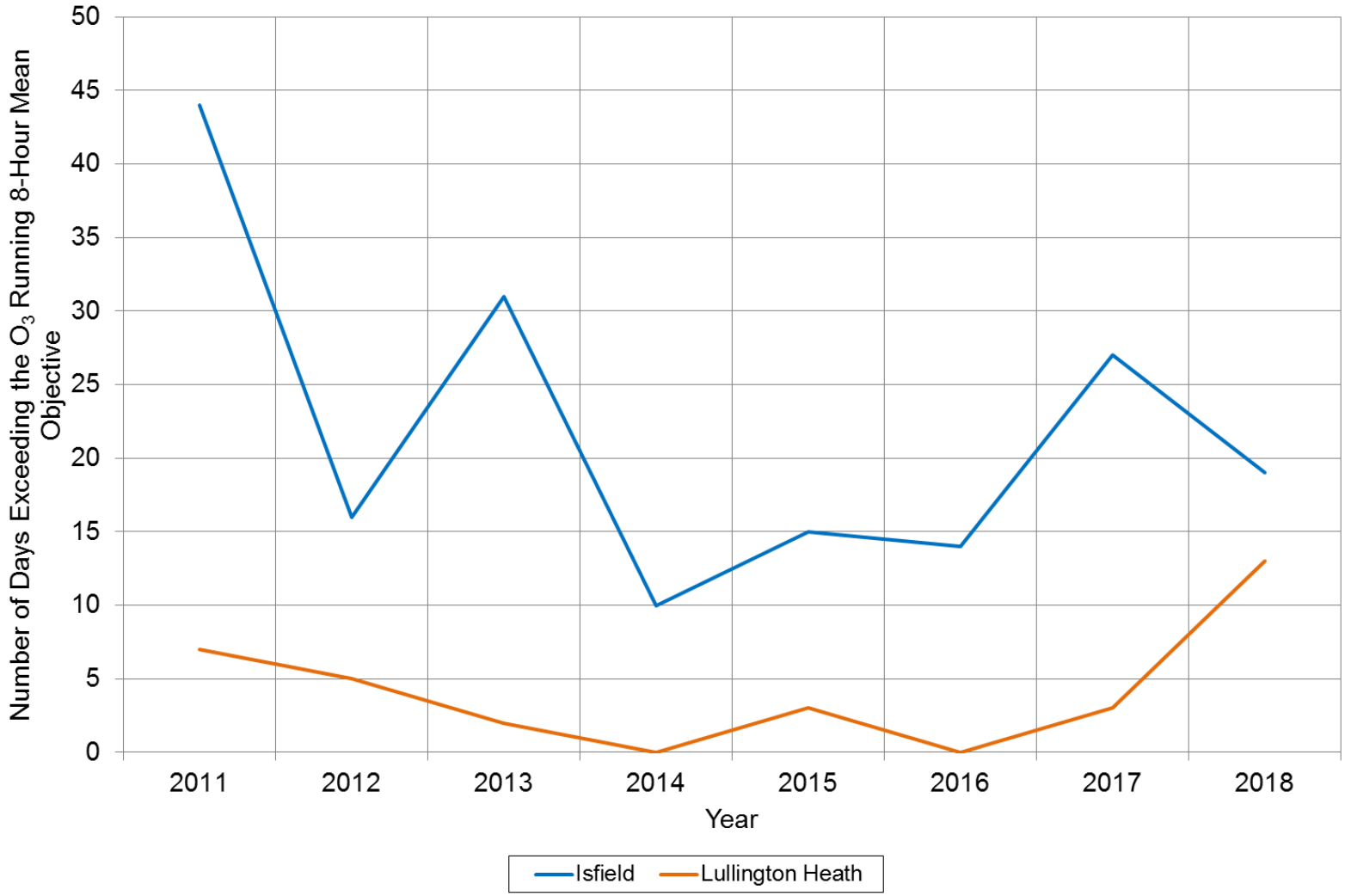
Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	Days With O_3 Running 8-Hour Means > 120µg/m^3				
				2014	2015	2016	2017	2018
AR2	Rural	99	99	10	**15**	**14**	**27**	**19**
LL1	Rural	94	94	0	3	0	3	**13**

Notes: Exceedances of the O_3 running 8-hour mean objective (120 µg/m^3 not to be exceeded more than 10 days/year) are shown in **bold.**

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

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

Figure A.6 – Trends in Number of Days Exceeding the Running 8-Hour Mean O_3 Objective (100µg/m^3)



Appendix B: Full Monthly Diffusion Tube Results for 2018

Table B.1 – NO_2 Monthly Diffusion Tube Results - 2018

Site ID	NO_2 Mean Concentrations (µg/m³)														
													Annual Mean		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.93) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
W1	16.7	19.8		12.9		11.0	10.1	10.2		15.9	20.9	16.9	14.9	13.9	12.5
W2	26.0	30.5	19.3	26.9	24.5		25.4	22.1	19.5	26.0	31.7	26.9	25.3	23.6	18.7
W3	15.8	19.8		16.0	13.8	11.1	13.1	12.8	13.5	18.1	22.3	19.3	16.0	14.9	12.1
W4	39.1	**41.2**	**45.7**		39.3	30.2	**47.2**	38.5	37.7	37.9	39.4	38.2	39.5	36.7	27.2
W5	32.7	38.5	32.6	36.6	**41.1**	34.5	35.9	32.4	34.5	37.1	33.1	31.8	35.1	32.6	20.6
W6	28.3	30.7	38.3	29.4	29.7	26.5	27.9	23.0	27.1	29.1	33.0	26.4	29.1	27.1	25.8
W7	25.3	27.4	35.7	20.1	21.3	17.4	20.1		17.1		18.3	20.5	22.3	20.8	15.6
W8	37.4	**43.5**	16.3	35.1	39.9	**41.1**		39.0	36.9	38.3	**41.8**	35.7	36.8	34.2	24.6
W9	12.9	12.8	**44.2**	10.9	8.9	8.7	7.8	7.1	7.5	11.9	15.9	13.9	13.6	12.6	11.1
W10	37.8	39.6	29.9	39.8	36.6	26.8	**48.9**	39.8	39.6	36.2	36.3	34.5	37.2	34.6	32.2

☐ **Local bias adjustment factor used**

☒ **National bias adjustment factor used**

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

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

Notes:

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

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

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

(2) Distance corrected to nearest relevant public exposure.

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

Significant changes to sources

No significant changes to sources to report.

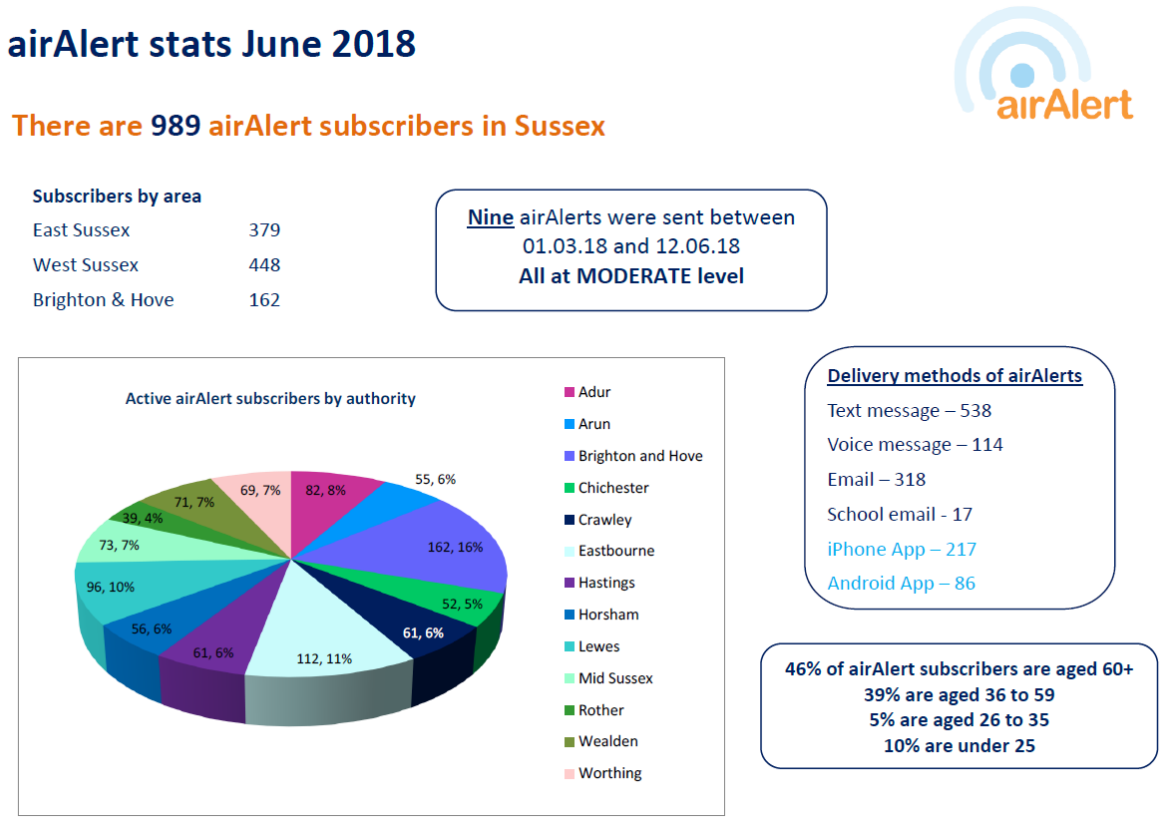
Detailed modelling or monitoring for changes to AQMAs

No detailed modelling or monitoring campaign has been conducted to determine whether an AQMA needs to be declared, amended or revoked.

Additional evidence in support of measures for Action Plans

Measure n.4: airAlert. As of June 2019, the total number of subscribers to the airAlert service by the Sussex Air Quality Partnership has increased to 989, and the number of subscribers in Wealden District was 70 which has not changed from 2017.

Figure B.1 – airAlert Statistics June 2019



Diffusion Tube Bias Adjustment Factors

Bias adjustment is effectively a calculated factor which shows whether diffusion tubes are over or under-reading ambient concentrations, thereby allowing a correction to be made.

Wealden District Council does not carry out a co-location study with diffusion tubes and an automatic continuous analyser, and so it is necessary to use the national database of bias adjustment factors (version 03/19) to select the appropriate bias adjustment factor for diffusion tubes prepared by Gradko. Figure C.1 shows the appropriate national bias adjustment factor used in this report.

Figure C.1: National Diffusion Tube Bias Adjustment Factor for Wealden District Council (Gradko).

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 03/19

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadhseet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of June 2019
LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List — If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List — If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List — If a year is not shown, we have no data[2]

Step 4: Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.

If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@uk.bureauveritas.com or 0800 0327953

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[2] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[5]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2018	R	Ards and North Down Borough Council	11	36	29	27.4%	G	0.78
Gradko	20% TEA in water	2018	R	Gedling Borough Council	12	33	32	5.6%	G	0.95
Gradko	20% TEA in water	2018	R	Lisburn & Castlereagh City Council	12	32	24	32.1%	G	0.76
Gradko	20% TEA in water	2018	R	Monmouthshire County Council	12	38	36	4.7%	G	0.96
Gradko	20% TEA in water	2018	UB	Northampton Borough Council	12	16	13	26.8%	G	0.79
Gradko	20% TEA in water	2018	R	Bedford Borough Council	11	32	29	9.2%	G	0.92
Gradko	20% TEA in water	2018	R	Borough Council of King's Lynn and West No	12	26	24	6.0%	G	0.94
Gradko	20% TEA in water	2018	R	Cheshire West and Chester	12	36	37	-2.5%	G	1.03
Gradko	20% TEA in water	2018	R	Cheshire West and Chester	12	43	40	6.1%	G	0.94
Gradko	20% TEA in water	2018	R	Fareham Borough Council	12	28	34	-17.5%	G	1.21
Gradko	20% TEA in water	2018	R	Fareham Borough Council	12	37	34	8.9%	G	0.92
Gradko	20% TEA in water	2018	R	Fareham Borough Council	12	32	28	12.6%	G	0.89
Gradko	20% TEA in water	2018	R	NOTTINGHAM CITY COUNCIL	12	35	34	0.3%	G	1.00
Gradko	20% TEA in water	2018	R	Bracknell Forest Borough Council	12	44	37	19.4%	G	0.84
Gradko	20% TEA in water	2018	R	Brighton & Hove City Council	9	48	50	-3.7%	G	1.04
Gradko	20% TEA in water	2018	R	Eastleigh Borough Council	11	28	32	-12.0%	G	1.14
Gradko	20% TEA in water	2018	R	Eastleigh Borough Council	12	42	38	10.2%	G	0.91
Gradko	20% TEA in water	2018	UB	Eastleigh Borough Council	12	27	28	-4.4%	G	1.05
Gradko	20% TEA in water	2018	R	Gateshead Council	12	29	25	13.9%	G	0.88
Gradko	20% TEA in water	2018	R	Gateshead Council	12	32	29	10.8%	G	0.90
Gradko	20% TEA in water	2018	R	Gateshead Council	9	40	41	-1.8%	G	1.02
Gradko	20% TEA in water	2018	R	Wokingham Borough Council	12	38	33	13.2%	G	0.88
Gradko	20% TEA in water	2018	R	Bath & North East Somerset	12	40	39	4.0%	G	0.96
Gradko	20% TEA in water	2018	R	Bedford Borough Council	10	30	27	8.8%	G	0.92
Gradko	20% TEA in water	2018	KS	Marylebone Road Intercomparison	11	93	85	9.3%	G	0.91
Gradko	20% TEA in water	2018	R	South Gloucestershire Council	12	21	20	6.3%	G	0.94
Gradko	20% TEA in water	2018	R	Thurrock Borough Council	12	53	52	2.3%	S	0.98
Gradko	20% TEA in water	2018	R	Thurrock Borough Council	12	34	30	15.1%	G	0.87
Gradko	20% TEA in water	2018	R	Thurrock Borough Council	12	31	24	28.8%	G	0.78
Gradko	20% TEA in water	2018	UB	Thurrock Borough Council	12	27	25	9.2%	S	0.92
Gradko	20% TEA in water	2018		**Overall Factor[3] (30 studies)**				Use		0.93

Discussion of Choice of Factor to Use

Wealden District Council has no means of deriving a local bias adjustment factor as there is no co-location study with diffusion tubes and a continuous analyser. Therefore, the national bias adjustment factor has been used.

PM Monitoring Adjustment

The PM_{10} data from the FDMS continuous analysers at Eastbourne Devonshire Park (EB1) and Holly Place (EB3) measure gravimetric-equivalent PM_{10} concentrations, and therefore no additional adjustment has been necessary. For consistency, the data presented in this report is the same as included in the Eastbourne 2018 ASR.

Short-term to Long-term Data Adjustment

Data capture in 2018 was 75% or higher for all monitoring sites in Wealden District. Details of short-term to long-term data adjustment for the automatic monitor at Eastbourne Devonshire Park in Eastbourne Borough are given in the Eastbourne 2018 ASR.

All the diffusion sites had data capture rate of 75% or more in 2018, therefore no annualisation was required.

QA/QC of Automatic Monitoring

As previously described in Section 2.1, monitoring stations within East Sussex are part of the SAQMN and, therefore, measurements made at these sites are traceable to national standards and operational procedures defined for the regional network. AURN sites such as Lullington Heath and Holly Place are managed by Defra contractors and data collected at these sites are traceable to the UK AURN national standards.

QA/QC of Diffusion Tube Monitoring

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 HSL Workplace Analysis Scheme for Proficiency (WASP) PT scheme.

Defra and the Devolved Administrations advise that diffusion tubes used for Local Air Quality Management should be obtained from laboratories that have demonstrated satisfactory performance in the AIR PT scheme.

Wealden District Council used Gradko International for the supply and analysis of diffusion tubes, with a 20% triethanolamine (TEA) in water preparation. In all of the 8 most recent AIR PT testing rounds running from September 2016 until August 2018, Gradko achieved 100% satisfactory results, so there is high confidence in the accuracy of the diffusion tube results.

Distance Correction Using the NO_2 Fall-off with Distance Calculator

Annual average NO_2 data from non-automatic monitoring sites W1, W2, W3, W4, W5, W6, W7, W8, W9 and W10 in 2018 have been corrected for distance using the NO_2 Fall-Off with Distance Calculator (Version 4.2) and total NO_2 concentrations from the DEFRA Background Maps for 2018. Detailed results for the calculations are included in Table C.1.

A distance factor has been calculated as the ratio between the distance-corrected and the bias-adjusted annual average NO_2 concentration at all sites in 2018. These factors have been applied to all monitored annual average NO_2 concentrations in 2018 in Table B.1.

Table C.1 – Distance Correction Calculations - 2018

Site ID	Distance (m)			Annual Mean NO_2 Concentrations (µg/m^3)			Distance Factor
	Tube - Kerb	Tube - Receptor	Receptor-Kerb	DEFRA Mapped Background	Bias Adjusted (0.87) and Annualised	Distance Corrected to Nearest Exposure	
W1	2.0	7.5	9.5	10.2	13.9	12.5	0.90
W2	2.0	7.5	9.5	10.2	23.6	18.7	0.79
W3	1.0	15.0	16.0	10.0	14.9	12.1	0.81
W4	2.0	7.5	9.5	10.5	36.7	27.2	0.74
W5	1.0	13.0	14.0	9.9	32.6	20.6	0.63
W6	1.0	0.5	1.5	11.5	27.1	25.8	0.95
W7	1.0	7.5	8.5	8.8	20.8	15.6	0.75
W8	2.0	8.0	10.0	8.6	34.2	24.6	0.72
W9	0.1	5.0	5.1	9.8	12.6	11.1	0.88
W10	2.0	1.0	3.0	9.8	34.6	32.2	0.93

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

Contains Ordnance Survey data © Crown copyright and database right 2018

AECOM
Sunley House, 4 Bedford Park, Croydon, CR0 2AP
Tel: +44 (0)20 8639 3500, Fax: +44 (0)20 8663 6723
www.aecom.com

2018 Wealden Monitoring Locations

Legend

- 2018 Wealden Diffusion Tubes
- 2018 Continuous Monitors
- Local Authority Boundary

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[22]	
	Concentration	Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

Table E.2 – Additional objectives from the UK Air Quality Strategy

Pollutant	Air Quality Objective[15]	
	Concentration	Measured as
Ozone (O_3)	120 µg/m^3, not to be exceeded more than 10 days a year	Running 8-hour mean
Particulate Matter ($PM_{2.5}$)	25 µg/m^3	Annual Mean

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
ESCC	East Sussex County Council
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SAQMN	Sussex Air Quality Monitoring Network
SO_2	Sulphur Dioxide

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