2018 Air Quality Annual Status Report (ASR)

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

(June, 2018)

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Executive Summary: Air Quality in Our Area

This Report constitutes the 2018 Air Quality Annual Status Report (ASR) for South Cambridgeshire District Council. The Report includes air quality monitoring data from 2017. It also covers other issues and developments that have occurred in the last twelve months, since the ASR of 2017 that may have an impact on local air quality.

South Cambridgeshire is a rural district undergoing significant growth, particularly associated with new or expanded satellite towns/villages around Cambridge City which the district of South Cambridgeshire encompasses.

The area has good road and rail links with London and the South-East. The M11/A11 and A14 corridors pass through the District to the west, south and north of Cambridge respectively.

To date, air quality issues within the District of South Cambridgeshire have been linked directly to the volume of traffic that runs through it, specifically along the A14. The A14 is congested on a regular basis between Bar Hill (to the North-West of Cambridge) and Milton (to the North-East). This has resulted in the declaration of an Air Quality Management Area for nitrogen dioxide (NO_2) and particulates (PM_{10}) along this stretch.

Traffic levels have continued to grow along the A14 through the district so that the road is now almost at saturation. In 2015, a scheme to improve the section of the A14 north of Cambridge was completed, undertaken under the Government's 'Pinch-Point' programme and comprised adding an additional lane in both eastbound and westbound directions between junctions 31 and 32. In addition, wholescale proposed improvements to the A14 between Cambridge and Huntingdon were confirmed by Highways England in 2016 after several years of uncertainty. These works commenced in May 2017 (to be completed by 2020) and should significantly alleviate impacts on local air quality in the management area. Meanwhile South Cambridgeshire District Council will continue to implement the measures outlined in its Air Quality Action Plan (AQAP) for the existing AQMA. The AQAP will be reviewed once these works are completed. A re-modelling of the management area might be necessary to consider the revocation of the existing AQMA.

Future major developments are largely residential and reliant on road-based transport for travel and commuting to the Cambridge city, London and the surrounding area.

The demand for housing, particularly affordable housing, is very high. The majority of the growth is associated with major developments such as 'Northstowe' a new c.10,000 dwelling settlement being developed to the north west of Cambridge currently under construction. Similar developments on former wartime military bases are also planned for Waterbeach Barracks (c.6,000-10,000 dwellings), followed by Bourn Airfield and also Cambourne West together with several other significant developments on the periphery of Cambridge City ('North West Cambridge', Marshall's 'Wing' site and Trumpington Sporting Village, amongst others).

The majority of these developments will rely on existing transport infrastructure with additional planned public transport generally limited to buses on existing roads, an additional bus stop on the currently operational guided busway at Northstowe, and a new station in Chesterton (completed & operational in May 2017), just north of Cambridge Station on the existing east coast mainline. Possible future public transport infrastructure projects associated with the City Deal for Cambridge include dedicated guided busways from Cambourne West through Bourn as well as Waterbeach Barracks, although a definitive commitment to these schemes has not yet been made. One of these schemes, the Cambourne West busway, is a policy requirement for the Bourn air field development and the Council's air quality staff have provided initial feasibility support for the scheme due to the advantages it may offer over conventional private car transport.

The challenge of maintaining good air quality in the wider district is focussed on minimising impacts from new major developments. Most of the new developments, when subject to detailed modelling, do not identify any significant exceedances of national air quality objectives because they are being built in rural areas where background pollution levels are low. However, the cumulative effect of multiple large concurrent developments is likely to pose a long term risk to air quality in the district.

This is a key challenge for the Council to overcome in ensuring due consideration is given to air quality through the planning process despite a clear and urgent need for new housing. It is acknowledged that greater partnership between local authorities,

transport planners and public health professionals is vital to implement any significant improvements with regards to air quality.

For new developments, efforts have therefore been focussed to minimise impacts on air quality through implementation of actual low emission deliverables through planning conditions. These measures include:

- Electric Vehicles charging points and electrical infrastructure to facilitate the future installation of additional charging points
- Installation of low emission boilers
- Sustainable building methods and renewable energy requirements
- Enhanced cycle provision and methods to encourage non-car transport
- Active ventilation on new buildings in sensitive areas.

South Cambridgeshire District Council will continue monitoring at all existing sites within the District and will introduce a new Air Quality Strategy. The next air quality review and assessment report will be the 2019 ASR.

The review of the monitoring data in 2017 has identified the following:

- The objectives for Nitrogen Dioxide and Particulates were met at all monitoring locations (three continuous and 27 passive monitoring sites) with good data capture. The data indicates a general improvement of air quality since 2016.
- The monitoring data relating to the existing AQMA also achieved relevant objectives. However, there is a slight increase in NO_2 levels at tubes located along the A14, which is likely due to the local congestion as the result of the A14 improvement works.
- The assessment of new sources has not identified any specific sources that have not been considered previously. A detailed assessment of any new sources is not therefore required.

Air Quality in South Cambridgeshire

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].

Within South Cambridgeshire, the absence of heavy industry means that the key pollutants of concern are Nitrogen Dioxide and Particulates associated with automotive transport. The A14 runs through the district and is a key link from Felixstowe supplying freight to the Midlands, contributing particulates from diesel engines. It is along this road that the Council declared an Air Quality Management Area (AQMA) in 2008 due to exceedances of nitrogen dioxide and particulates. These pollutants have been monitored for several years and show recent improvements.

Actions to Improve Air Quality

It is recognised by the Council that implementing measures which will actually deliver improvements or mitigate impacts in relation to air quality are often not tangible and difficult to achieve. Particularly on major new developments where local planning policies do not categorically state what measures will be required unless national objectives are threatened.

As such, efforts have been made in 2017 to achieve improvements through the use of planning conditions and site-specific Supplementary Planning Documents (SPD) to specifically state what measures will be required to minimise the impact on local air quality. Furthermore, the need for a new Air Quality Strategy was recognised to support the new approach by the Council in minimising impacts on local air quality within the whole district and not just within the AQMA.

[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

Conclusions and Priorities

The overall results from this year's monitoring data show a general decreasing trend at most monitoring locations, which although quite modest does back the trend of improving air quality over recent years.

For the coming year, the council will actively move away from a standard of just achieving national limit objectives and will pursue a longer term and practical measures to reduce impacts on local air quality. This will consequently reduce the health impacts of air pollution on public health. This will be achieved through close partnership between the Council and Cambridgeshire County Council, Planning and Policy teams, Transport Planners, Public Health and Highways England.

Local Engagement and How to get Involved

The Greater Cambridge Partnership is an initiative aimed at providing more sustainable transport options, making it easier for people to travel by public transport, cycle or on foot, reducing traffic and easing congestion. The four partners are:

- Cambridge City Council
- Cambridgeshire County Council
- South Cambridgeshire District Council
- University of Cambridge

Regular Local Liaison Forums are being carried out and the public can get involved.

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1 Local Air Quality Management

This report provides an overview of air quality in South Cambridgeshire District Council during 2017. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

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

This Annual Status Report (ASR) is an annual requirement showing the strategies employed by South Cambridgeshire District Council to improve air quality and report any progress that has been made.

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

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

A summary of AQMAs declared by South Cambridgeshire District Council can be found in Table 2.1. Further information related to declared AQMAs, including maps of AQMA boundaries are available online.

Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to the AQMA.

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
AQMA 1 (Revoked)	2007	NO2 Annual Mean	Bar Hill - Milton	Area Along A14 between Bar Hill and Milton	YES	42	µg/m3	-	-	-	-	-
AQMA 1	2008	NO2 Annual Mean	Bar Hill - Milton	Area Along A14 between Bar Hill and Milton	YES	42	µg/m3	23	µg/m3	Air Quality Action Plan for Cambridgeshire Growth Areas	2009	Link
AQMA 1	2008	PM10 Daily Mean	Bar Hill - Milton	Area Along A14 between Bar Hill and Milton	YES	52	Exceedances	2	Exceedances	Air Quality Action Plan for Cambridgeshire Growth Areas	2009	Link

☒ **South Cambridgeshire 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 South Cambridgeshire

South Cambridgeshire District Council has taken forward a number of direct measures during the current reporting year of 2018 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. More detail on these measures can be found in the respective Action Plan. Key measures relate to the completion of major highway improvements although it is acknowledged that the key driver in these aspects has been other factors rather than air quality.

A new monitoring station has been installed at Lolworth following a funding agreement by Highways England. Annual data will be presented to the Council for review. In 2018-19, the Council expects to further pursue and formalise its approach to low emission strategies adopted on new developments. It will also continue to support sustainable transport planning and public health initiatives through partnership working with local stakeholders in an effort to deliver positive outcomes associated with the City Deal, the Joint Strategic Needs Partnership and associated schemes.

Defra's appraisal of last year's ASR accepted the report and presented a number of points for the Council to consider in further LAQM efforts and reporting.

Defra recommended further consideration be given to the status of the AQMA as the result of the A14 improvements works and determine whether revocation is the most appropriate course of action. The Council is committed to reviewing the AQMA once the improvement works are completed and meanwhile will continue to monitor the pollution levels within the AQMA. As Defra recommended appropriate distance correction for the site with the highest measured concentration within the AQMA will be undertaken to assist in determining the need for revocation of the AQMA.

Defra has also recommended that the monitoring locations be clearly pinpointed on any maps included. This is presented in appendix D.

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	Low Emission Measures	Transport Planning, Infrastructure & Promoting Travel Alternatives	Promotion of cycling/ Sustainable Transport	Developer Contributions	2016	2016	To be confirmed – May involve ratio of PPs issued with LES.	NA	PPs now being issued with Low Emission Strategies	2016	Support from central Gov't would help
2	Guided Bus Way	Transport Planning & Infrastructure	Bus Route Improvements	Cambridgeshire County Council (CCC)	2009-2010	2011	N/A	None	Completed	N/A	
3	A14 Improvement –Junction 31-32 (E/B & W/B)	Traffic Management	Strategic highway improvements	CCC	N/A	2015	N/A	None	Completed Autumn 2015	N/A	
4	A14/M11 Re-alignment	Traffic Management	Strategic highway improvements	CCC/ Highways England	N/A	2016-20	Central Gov't/Highways England Commitment	None	Work to commence 2016/7 (Package 1)	2020	
5	Policy Guidance and Development Control	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	South Cambridgeshire District Council (SCDC)	2015	2016	LDF Policy NE/16	None	SPD or Developers Guide for Low Emission Strategy measures	2016	
6	City Deal	Transport Planning & Infrastructure Promoting Travel Alternatives	Bus route improvements & Promotion of cycling/ Sustainable Transport	CCC/ Cambridge City Council	2015-2030	2016	Connect existing and new residential and employment areas with high quality public transport networks, including new orbital bus routes around Cambridge & comprehensive network of pedestrian and cycle route.	None	Proposed scheme for making bus, cycle and walking journeys more convenient and safer from Northstowe announced.	Tranche 1 schemes by 2019	

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.

The Public Health Outcomes Framework (PHOF) includes an indicator relating to fine particulate matter, the "fraction of all-cause mortality attributable to anthropogenic particulate air pollution (measured as fine particulate matter, PM2.5)". This was reported as 5.3% for Cambridgeshire in 2016.

The Cambridgeshire Health and Wellbeing Board reviewed a Transport and Health Joint Strategic Needs Assessment (JSNA) report in 2014 in which the air pollution was also considered. The report noted that there are levels of air pollution in Cambridgeshire that could impact health, even though most annual averages may not be over air quality thresholds. Through the JSNA process, stakeholders identified several options for addressing air pollution in Cambridgeshire such as:

- Lower emission transport fleet (buses and taxis)
- Modal shift from cars to walking and cycling
- Review and promote the use of means to reduce person exposure in the short term such as Text Alerts to vulnerable people, monitoring indoor air quality

The Greater Cambridgeshire Greenways Project involves a high quality network of routes from South Cambridgeshire into Cambridge from some of the surrounding towns and villages aiming to increase levels of cycling and walking, in order to reduce traffic congestion as the city grows, as well as to improve the health of its population.

South Cambridgeshire District Council undertakes monitoring for $PM_{2.5}$ at one automatic monitoring station, Girton. The monitored concentrations at Girton site in 2017 are slightly higher than that predicated by Defra confirming the existing hotspot is affected by traffic.

The Council wishes to introduce future measures to address $PM_{2.5}$ as part of the oncoming Air Quality Action Plan review and Air Quality Strategy, ensuring that the Public Health perspective is integrated into all relevant policies. The Council is currently reviewing the possibilities to install a new $PM_{2.5}$ monitor.

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

3.1 Summary of Monitoring Undertaken

South Cambridgeshire District Council operated Automatic Monitoring Stations at three sites and also undertook non-automatic (passive) monitoring of NO_2 at 27 sites within the District in 2017.

Automatic Monitoring Stations are located at Orchard Park (Cambridge), Girton and Impington. They measure PM_{10} and NO_2. Girton site also measures $PM_{2.5}$. The NO_2 and PM_{10} annual mean objective was achieved at all monitor locations.

The NO_2 annual mean objective was achieved at all diffusion tubes within the district and the AQMA. However, the results show a slight increase at tubes location within the AQMA.

3.1.1 Automatic Monitoring Sites

The Automatic Monitoring Stations at Girton and Impington are representative of nearby receptors situated alongside the A14. The Orchard Park monitor is a background site located within the grounds of a school. Both Orchard Park and Impington site are located within the Air Quality Management Area for NO_2 and $PM_{10.}$

Data capture for NO_2 and PM_{10} was above 95% for Orchard Park and Impington and 94% for Girton. $PM_{2.5}$ data capture was also 94% for Girton site.

The monitoring results show that

- The annual mean objective for both NO_2 and PM_{10} was achieved at all sites
- The annual mean objective for $PM_{2.5}$ was also achieved at Girton site
- For all sites, NO_2 hourly mean objective i.e. (hours where concentrations were calculated to be >200$\mu g/m^3$) was achieved
- For all sites, the PM_{10} daily mean objective i.e. (days where concentrations were calculated to be >50$\mu g/m^3$) was achieved

Table A.1 in Appendix A shows the details of the sites.

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

3.1.2 Non-Automatic Monitoring Sites

Data capture was over 75% for all locations except for DT3 and DT6. These tubes were withdrawn from the network due to dangerous access. Tube DT8 had a data capture of 67% due to local roadworks and restricted access. Therefore data for these tubes were annualised according to Technical Guidance LAQM.TG16 (Box 7.9). Alternative locations will be introduced in the following year to ensure appropriate coverage of the monitoring network within the district.

Following the national bias adjustment process, results for all diffusion tubes show compliance with the annual mean objective for Nitrogen Dioxide.

The current monitoring results show slight increase in NO_2 concertation for the tubes located along the A14 compared to the results of 2016. This is likely due to the ongoing A14 improvement road works which has resulted in significant increase in local congestions. Table A.2 in Appendix A shows the details of the sites.

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

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)

Results for all diffusion tubes and monitoring stations show compliance with the annual mean objective for Nitrogen Dioxide.

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 2017 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year. No such exceedances were recorded at any of the monritong sites.

3.2.2 Particulate Matter (PM_{10})

South Cambridgeshire District Council monitored PM_{10} at all monitoring locations. The annual and daily mean objectives were achieved at all of the three monitoring sites with good data capture. The monitoried data over the past five years show a general downward trend in PM_{10} concentrations.

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.

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. No such exceedances were recorded at any of the monritong sites.

3.2.3 Particulate Matter ($PM_{2.5}$)

South Cambridgeshire District Council monitored $PM_{2.5}$ historically at Bar Hill site which was decommissioned in 2012. $PM_{2.5}$ monitoring started at Girton site in December 2011. The concentrations at both the previous and new site have remained fairly stable throughout the monitoring periods. The highest level recorded was 14µg/m^3 measured in 2013 at the new location. The annual mean concentration in 2017 was 11 µg/m^3.

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

3.2.4 Sulphur Dioxide (SO_2)

South Cambridgeshire Council do not monitor sulphur dioxide concentrations as no relevant sources have been identified in previous rounds of updating and screening.

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)
IMP	Impington (A14)	Roadside	543739	261625	NOx (NO2) PM10	YES	ET M200E/ ET BAM1020	Y (12m)	N/A	2
ORCH	Orchard Park Primary School (A14)	Urban Background	544558	261579	NOx (NO2) PM10	YES	ET M200E/ ET BAM1020	Y (1m)	N/A	2
GIRT	Girton	Roadside	542676	260667	NOx (NO2) PM10, PM2.5	NO	ET M200E/ ET BAM1020	Y (5m)	5	2

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)
DT1	1 Coppice, Histon	Urban Background	544230	262048	NO2	N	7m	0.5m	N	2
DT2	The Gables, High Street, Histon	Roadside	543770	263678	NO2	N	5m	1m	N	2
DT3	Hill Farm Cottages, Lolworth	Roadside	536926	264956	NO2	Y	N	4m	N	2
DT4	White Lion, 96 High St., Sawston	Urban Background	548600	249136	NO2	N	5m	1m	N	2
DT5	Rhadegund Farm Co. Lolworth	Roadside	538744	263640	NO2	Y	0m	33m	N	2
DT6	64 High St., Linton	Roadside	556179	246815	NO2	N	7m	0.5m	N	2
DT7	20 High St.,Tadlow	Roadside	528131	247399	NO2	N	10m	2m	N	2
DT8	47 High Street, Harston	Urban Background	542554	251002	NO2	N	5m	1m	N	2
DT9	3 Garner Close, Milton	Urban Background	547452	263175	NO2	N	5m	1m	N	2
DT10	1A Weavers Field, Girton	Urban Background	542537	261467	NO2	Y	15m	1m	N	2
DT11	Heath Hse., A505, Thriplow	Urban Background	544034	244585	NO2	N	10m	1m	N	2
DT12	19 Lonetree Av., Impington	Roadside	544119	261862	NO2	Y	7m	0.5m	N	2

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)
DT13	1 Brook Close, Histon	Urban Background	543955	263588	NO2	N	2m	1m	N	2
DT14	22 Water Lane, Histon	Roadside	544050	263306	NO2	N	2m	0.5m	N	2
DT15	Cambridge Rd, Impington	Urban Background	544243	261819	NO2	Y	7m	0.5m	N	2
DT16	Hackers Fruit Farm, Lolworth	Roadside	539846	262826	NO2	Y	5m	12m	N	2
DT17	5 Mill Lane, Sawston	Roadside	548545	249366	NO2	N	15m	1m	N	2
DT18	1 Catchall Farm Cottages	Roadside	540509	262290	NO2	Y	1m	10m	N	2
DT19	Crafts Way, Bar Hill	Roadside	538472	263675	NO2	N	15m	1m	N	2
DT20	Chieftain Way, Orchard Park	Roadside	544828	261738	NO2	Y	1m	0.5m	N	2
DT21	Topper Street, Orchard Park	Roadside	545056	261784	NO2	Y	1m	0.5m	N	2
DT22	Flack End, Orchard Park	Roadside	545435	261906	NO2	Y	2m	35m (from A14 WB)	N	2
DT23a	Orchard Park School	Urban Background	544557	261571	NO2	Y	1m	50m	Y	2
DT23b	Orchard Park School	Urban Background	544557	261571	NO2	Y	1m	50m	Y	2
DT23c	Orchard Park School	Urban Background	544557	261571	NO2	Y	1m	50m	Y	2
DT26	Co-op, High Street, Histon	Roadside	543768	263708	NO2	Y	1.5m	2.6m	N	2

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)
DT27	13 Engledow Drive, Orch. Park	Urban Background	545259	261873	NO2	Y	5m	4.5m	N	2
DT28	22 Topper Street , Orch. Park	Roadside	545169	261764	NO2	Y	4.2m	0.2m	N	2
DT29	Church Lane, Little Abington	Urban Background	552961	249251	NO2	Y	14m	2.0m	N	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.

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 2017 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
					2013	2014	2015	2016	2017
IMP	Roadside	Automatic Monitor	96	96	27	23	22	23	23
ORCH	Urban Background	Automatic Monitor	99	99	22	19	18	18	18
GIRT	Roadside	Automatic Monitor	95	95	26	25	24	23	23
DT1	Urban Background	Diffusion Tube	100	100	15.3	18.9	17.4	21.3	17.2
DT2	Roadside	Diffusion Tube	100	100	28.2	31.5	30.6	27.8	27.4
DT3	Roadside	Diffusion Tube	50	50	27.5	31.8	29.8	27.6	26.5*
DT4	Urban Background	Diffusion Tube	100	100	28	28.3	23.8	26.6	26.1
DT5	Roadside	Diffusion Tube	100	100	26	21.7	19	20.6	16.2
DT6	Roadside	Diffusion Tube	58	58	28.2	31.1	27.4	27.9	29.2*
DT7	Roadside	Diffusion Tube	100	100	14.1	11.9	10.4	11.8	12.1
DT8	Urban Background	Diffusion Tube	67	67	25.7	28	28.4	28.6	27.3*
DT9	Urban Background	Diffusion Tube	100	100	19.9	17.3	16.4	17.8	17.5
DT10	Urban Background	Diffusion Tube	100	100	26.8	30.5	26	26.2	26.3
DT11	Urban Background	Diffusion Tube	100	100	25.9	28.2	26.1	26	24.6

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2017 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
					2013	2014	2015	2016	2017
DT12	Roadside	Diffusion Tube	100	100	20.2	21.1	17.9	19.4	18.8
DT13	Urban Background	Diffusion Tube	100	100	19	19.7	17.7	19.2	18.5
DT14	Roadside	Diffusion Tube	100	100	25.2	28.6	24.4	27	26.4
DT15	Urban Background	Diffusion Tube	100	100	25.1	22.3	20.2	20.3	19.4
DT16	Roadside	Diffusion Tube	92	92	42.9	38	32.8	37.1	28.6
DT17	Roadside	Diffusion Tube	100	100	17.8	15.1	14.3	16.4	14.1
DT18	Roadside	Diffusion Tube	75	75	26.4	25.4	21.7	24.1	25.8
DT19	Roadside	Diffusion Tube	92	92	23.7	22.9	19.8	24.5	20.3
DT20	Roadside	Diffusion Tube	100	100	21.2	21.9	17.6	23.1	18.2
DT21	Roadside	Diffusion Tube	100	100	22	20.8	18.2	20.5	18.8
DT22	Roadside	Diffusion Tube	100	100	24.8	24.1	20.6	22.4	21.2
DT23a	Urban Background	Diffusion Tube	100	100	19.4	20.4	17.3	17.8	16.6
DT23b	Urban Background	Diffusion Tube	100	100	19.2	19.8	16.8	17.9	16.2
DT23c	Urban Background	Diffusion Tube	100	100	19.6	19.4	17.9	17.4	15.9
DT26	Roadside	Diffusion Tube	100	100	21.1	21.2	18.6	19.7	18.9

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2017 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
					2013	2014	2015	2016	2017
DT27	Urban Background	Diffusion Tube	100	100	24.6	24	20.8	22.1	21.2
DT28	Roadside	Diffusion Tube	100	100	21.6	21.5	20.3	21	21.3
DT29	Urban Background	Diffusion Tube	100	100	15.2	12.5	11.3	12.5	11

☒ **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.**

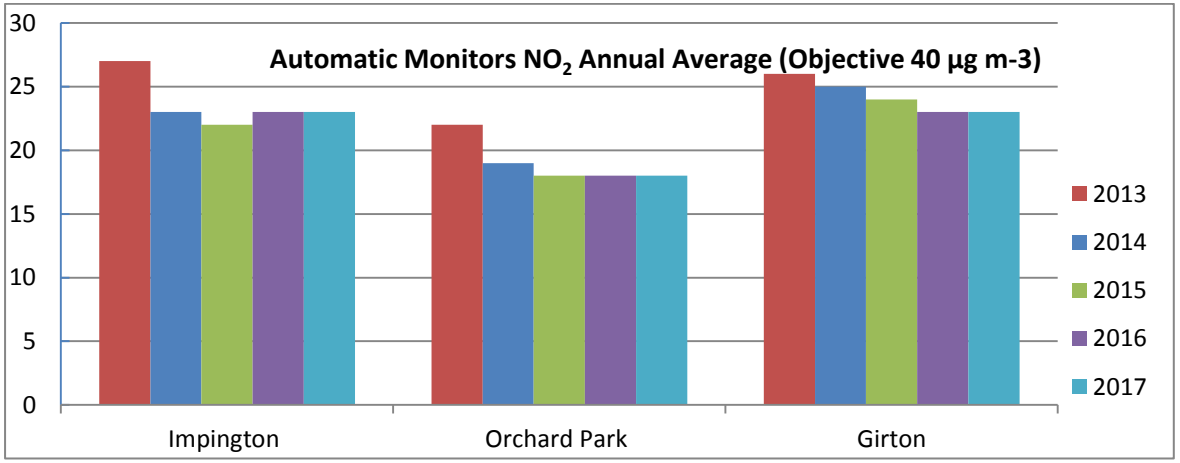
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(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.

*Annualised data

Figure A.1 – Trends in Annual Mean NO_2 Concentrations



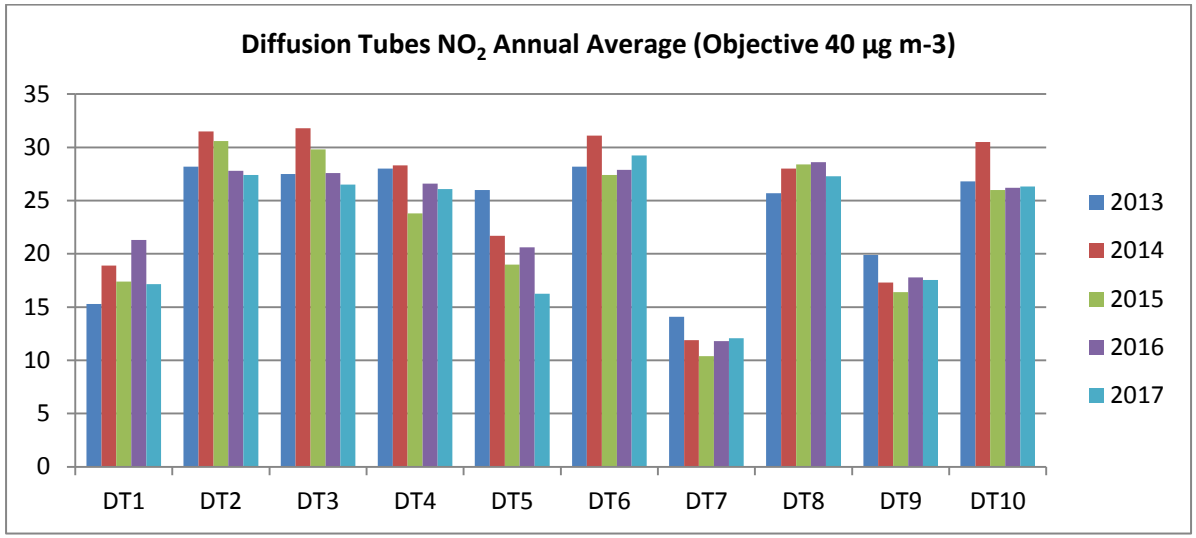
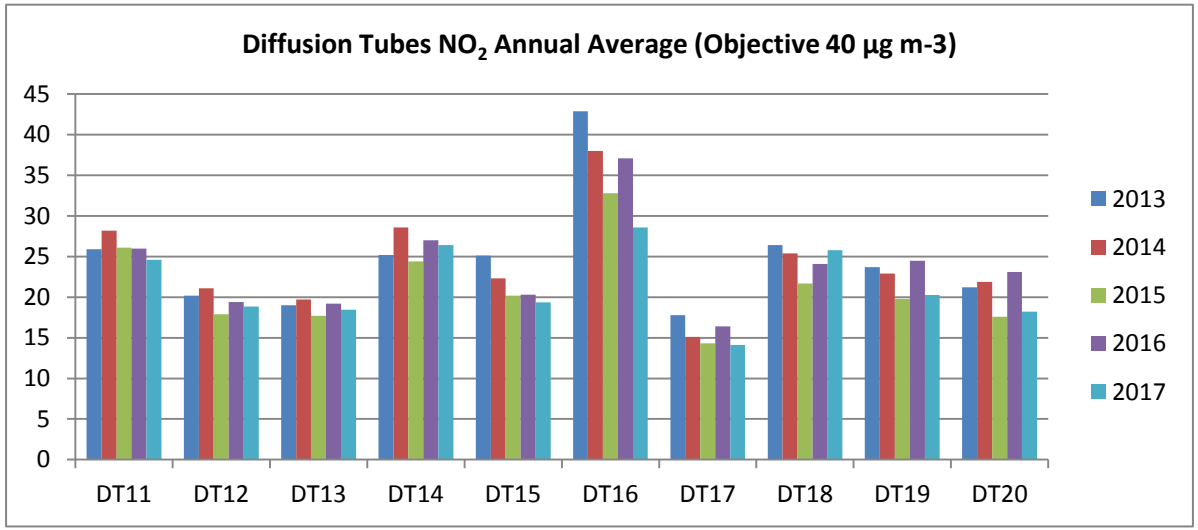


Figure A.1 – Trends in Annual Mean NO_2 Concentrations – continued



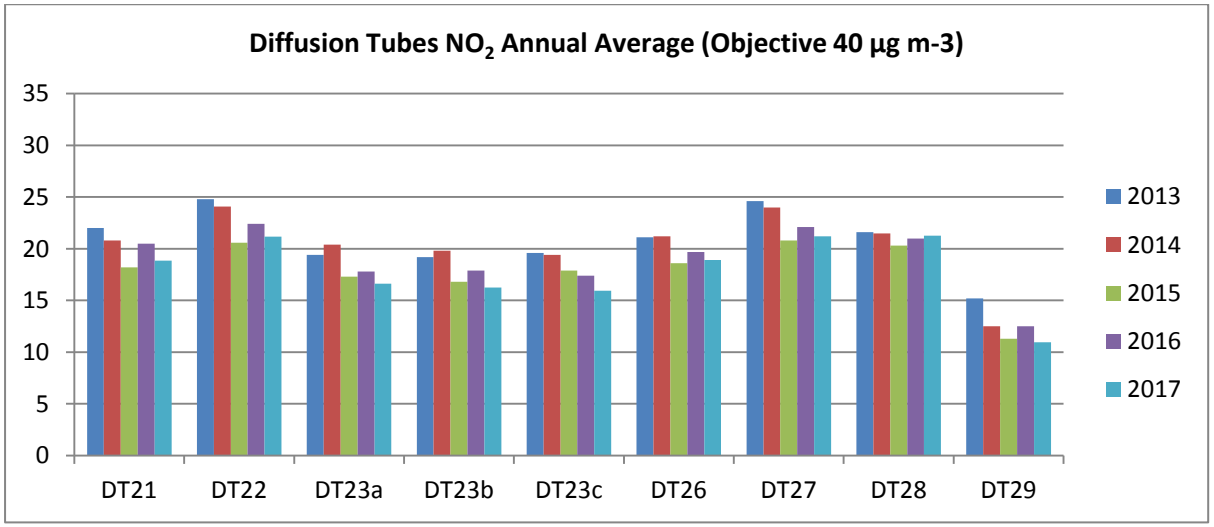


Table A.4 – 1-Hour Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2017 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
					2013	2014	2015	2016	2017
IMP	Roadside	Automatic	96	96	1	0	0	0	0
ORCH	Urban Background	Automatic	99	99	**0 (86)**	0	0	0	0
GIRT	Roadside	Automatic	95	95	0	0	0	0	0

Notes:

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

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

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

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

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

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2017 (%) (2)	PM_{10} Annual Mean Concentration ($\mu g/m^3$) (3)				
				2013	2014	2015	2016	2017
IMP	Roadside	98	98	**55**	22	18	17	16
ORCH	Urban Background	96	96	22	22	16	16	14
GIRT	Roadside	94	94	30	16	11	17	17

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

Notes:

Exceedances of the PM_{10} annual mean objective of 40$\mu g/m^3$ 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

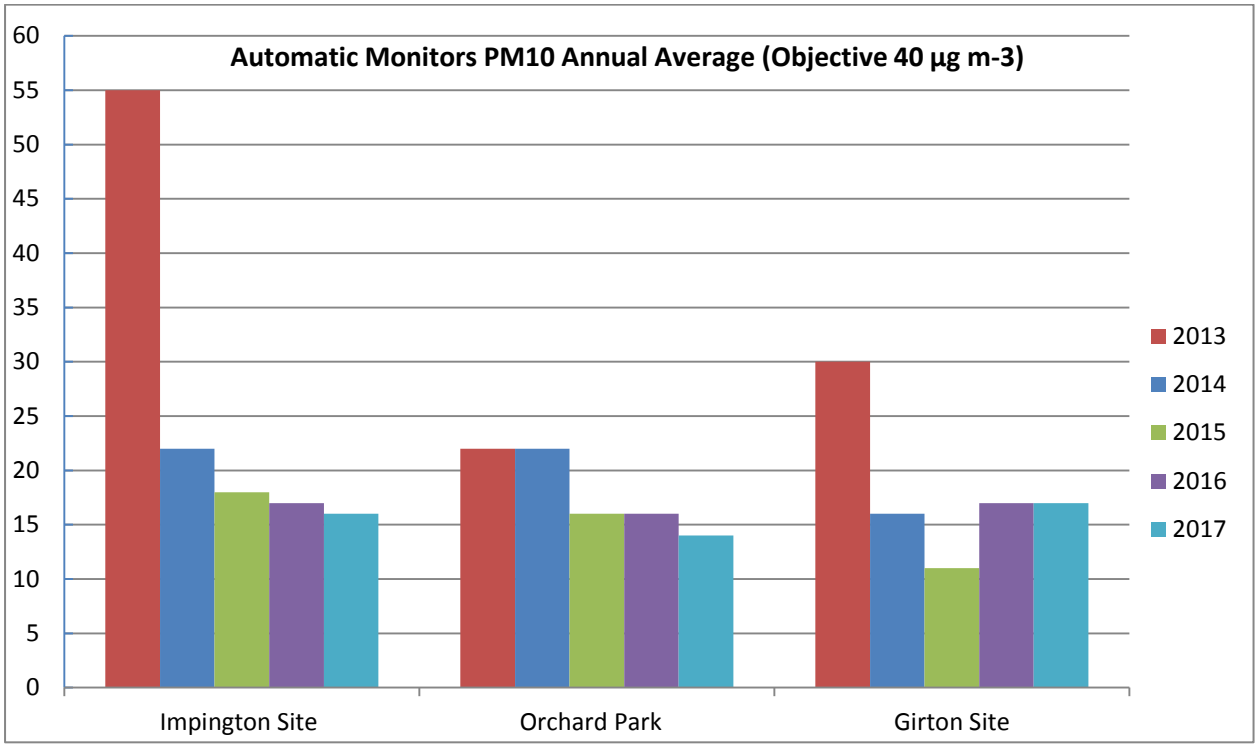


Table A.6 – 24-Hour Mean PM_{10} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2017 (%) (2)	PM_{10} 24-Hour Means > 50µg/m^3 (3)				
				2013	2014	2015	2016	2017
IMP	Roadside	98	98	21	4	2	1	2
ORCH	Urban Background	96	96	7	7	1	1	1
GIRT	Roadside	94	94	23	2	1	1	1

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.

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

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2017 (%) (2)	$PM_{2.5}$ Annual Mean Concentration ($\mu g/m^3$) (3)				
				2013	2014	2015	2016	2017
GIRT	Roadside	94	94	14	12	11	13	11

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

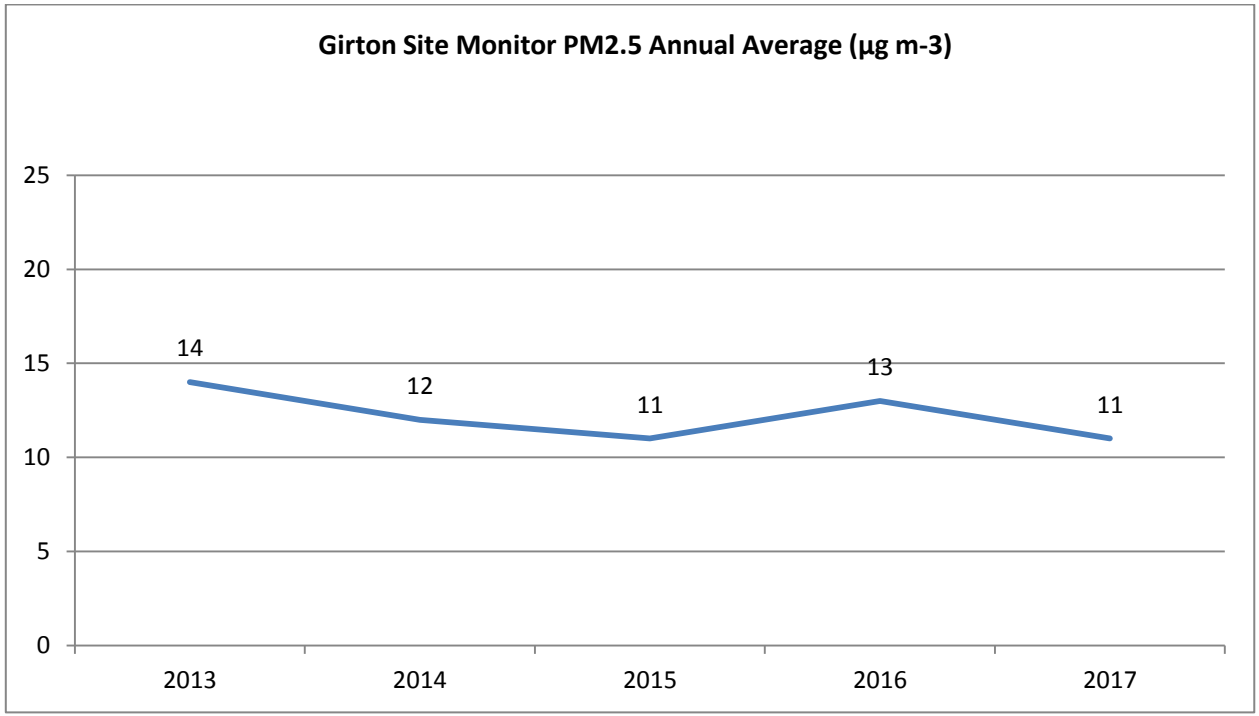
Notes:

(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.3 – Trends in Annual Mean $PM_{2.5}$ Concentrations



Appendix B: Full Monthly Diffusion Tube Results for 2017

Table B.1 – NO_2 Monthly Diffusion Tube Results - 2017

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (0.77) and Annualised (1)
DT1	**40.3**	25.4	21.9	14.4	26.1	14.5	14.2	18.3	17.2	23.0	28.6	23.5	22.3	17.2
DT2	**51.6**	**41.5**	32.9	38.1	27.5	31.7	28.9	31.4	34.2	35.2	37.6	36.6	35.6	27.4
DT3	36.1	**45.2**	**43.3**	38.7	25.6	32.1	-	-	-	-	-	-	36.8	26.5*
DT4	**57.8**	33.5	38.4	32.1	28	23.9	23.5	26.6	34.8	33	35	39.8	33.9	26.1
DT5	36.5	26.4	22.9	19.8	26	10.8	16.2	14.4	19.7	15	25.7	19.8	21.1	16.2
DT6	**50.6**	**44.6**	**41.3**	36.7	31.9	32.6	25.8	-	-	-	-	-	37.6	29.2*
DT7	32.3	21.3	16.3	12	10.1	7.1	6.4	11.7	15.2	15.5	21.7	18.6	15.7	12.1
DT8	**58.2**	**42.4**	31.6	27.1	28.8	21.1	missing	23.6	30.6	-	-	-	32.9	27.3*
DT9	**41.7**	27.9	25.3	16.9	16.4	13	12.9	16.6	19.7	24.9	30.7	27.4	22.8	17.5
DT10	**51**	**46.4**	39.6	27.8	25.8	29.2	23.9	26.4	31.3	34.3	38.5	35.9	34.2	26.3
DT11	**52.9**	29.9	38.8	24.9	24.8	27.5	23.8	24.5	35.3	30.3	36.3	34.5	32.0	24.6
DT12	**42.9**	31.9	27	18.9	17.9	14	13.4	20.6	20.6	28.7	29.8	27.8	24.5	18.8
DT13	**50.1**	27.8	28.2	20.4	18.3	13.9	12.2	15.8	23.4	24.2	32.5	20.8	24.0	18.5
DT14	**50.8**	36.7	37.7	29.8	25.7	23.5	21.6	26.6	30.5	39.7	**47.9**	**41**	34.3	26.4
DT15	**43**	34.7	28.3	21	22.5	19	15.1	20.3	20.1	18.3	32.4	27.1	25.2	19.4
DT16	**62.4**	**43.6**	32.8	38.3	**49.6**	20.7	29.5	30.7	39.8	25.8	35.1	missing	37.1	28.6

Site ID	NO_2 Mean Concentrations (µg/m^3)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (0.77) and Annualised (1)
DT17	29.2	25.8	20.9	16.4	15.5	9.5	11.6	10	16.9	18.5	22.5	23.4	18.4	14.1
DT18	35	missing	missing	33.1	**45.2**	26.1	33.1	31.1	38.6	28.6	38.6	25.4	33.5	25.8
DT19	**47.5**	31	27	26.1	24	15.1	16.7	17	25.3	missing	32.1	27.6	26.3	20.3
DT20	**48.5**	27.9	27.1	23.6	18.2	12.5	12.6	17.2	20.7	20.3	28.9	26.6	23.7	18.2
DT21	**46.8**	29.4	25.3	23	19.5	13.1	15.2	15.1	23.5	19.7	35.2	27.8	24.5	18.8
DT22	**52.5**	34.1	32.5	27.5	22.9	13.7	15.8	16.7	24.7	22.3	36	31.1	27.5	21.2
DT23a	**40**	20.1	22.6	19.3	16.7	10.9	13.2	14.7	19.7	20	36.4	25.4	21.6	16.6
DT23b	37.7	23.6	22.7	22.3	14.8	12	13.4	14.2	21.3	20.6	28.6	21.9	21.1	16.2
DT23c	31	25.9	22.5	20.3	14.8	12.9	13.3	15.3	19.6	19.5	32.8	20.6	20.7	15.9
DT26	**51.3**	35.7	20.2	19.3	20.3	16.8	16	16.7	22	23.8	32	20.7	24.6	18.9
DT27	**47.7**	35	29.3	30.6	22.4	16.6	16.2	18.4	24.6	26.7	33	29.8	27.5	21.2
DT28	**44.2**	33.2	30.9	25.9	16.8	16.6	15.3	18.3	27.2	34.6	36.9	31.6	27.6	21.3
DT29	25.2	15.2	15.7	13.4	11.7	7.1	7.7	8.6	14	17.1	17.4	17.9	14.3	11.0

☒ **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. * Annualised data.

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

Automatic Monitoring

QA/QC of automatic monitoring data is carried out by AEA Technology (http://www.aeat.co.uk) now Ricardo – AEA.

Tri-annual audits of the monitoring stations are carried out by AEA Technology.

Services of all the three AQ monitoring stations i.e. Impington, Girton and Orchard Park are carried out bi-annually by the equipment suppliers; Enviro - Technology.

The sites are manually calibrated on a monthly basis by the Local Site Operative. The output from the calibrations is forwarded to AEAT now Ricardo – AEA for QA/QC and ratification purposes.

South Cambridgeshire District Council is a member of the Calibration Club, operated by AEAT now Ricardo – AEA.

All NOx analysers are chemiluminescence analysers

All particulate matter analysers are BAMs. In line with current guidance, BAM data is multiplied by 1.3 to give the gravimetric equivalent.

Non-Automatic Monitoring

The monitoring of nitrogen dioxide by diffusion tube has been an on-going project since 1995.

During 2016, NO_2 monitoring was undertaken at 27 sites within the district using passive diffusion tubes. However, the Orchard Park School monitoring site was used as a co-location site with triplicate tubes co-located with the continuous monitor.

The tubes are supplied and analysed by Environmental Scientifics Group (ESG - formerly Harwell Scientifics), a UKAS accredited laboratory (0322). The tube preparation method is 50% TEA in Acetone and analysis is by desorption with distilled water, with the extract analysed using a segmented flow auto analyser with ultraviolet detection. The exposure periods for the diffusion tubes are those of the UK Nitrogen Dioxide Diffusion Tube Network run by NETCEN which effectively is a four or five week duration. QA/QC procedures are as detailed in the UK NO_2 Diffusion Tube Network Instruction Manual which can be found here.

Data capture for all tube results was sufficient as to not warrant annualisation except for DT3, DT6 & DT8.

A national bias adjustment factor of 0.77 has been applied to the 2017 diffusion tube results.

The address of the analysing lab is:

Environmental Scientifics Group (ESG) Ltd
12 Moorbrook
Southmead Industrial Park
Didcot
Oxon
OX11 7HP

ESG Ltd confirms that the methods and procedures they follow meet the guidelines set out in Defra's "Diffusion Tubes for Ambient Monitoring: Practical Guidance".

ESG takes part in the WASP Proficiency Scheme. The laboratory performance is rated at the highest level of "good".

Annualisation Information According to Box 7.9 TG(16)

Chosen Background Sites	Data Capture 2017 %	Location Grid Reference	Approximate Distance to DT3 (mile)	Approximate Distance to DT6 (mile)	Approximate Distance to DT8 (mile)	2017 annual Mean Am
Wicken Fen	97	556316, 269179	15	15	15	9
Market Harborough	94	483340, 295886	40	55	45	9
Oxford St Ebbes	97	451168, 205382	65	70	65	14

Annualisation Factor for Period Mean January to June – Tube DT3			
Background Site	Annual mean 2017 (Am)	Period Mean 2017 (Pm)	Ratio (Am/Pm)
Wicken Fen	9	9.7	0.928
Market Harborough	9	9.8	0.918
Oxford St Ebbes	14	14.6	0.959
		Average (Ra)	**0.935**

Annualisation Factor for Period Mean January to July - Tube DT6			
Background Site	Annual mean 2017 (Am)	Period Mean 2017 (Pm)	Ratio (Am/Pm)
Wicken Fen	9	8.8	1.023
Market Harborough	9	9.1	0.989
Oxford St Ebbes	14	13.8	1.014
		Average (Ra)	**1.009**

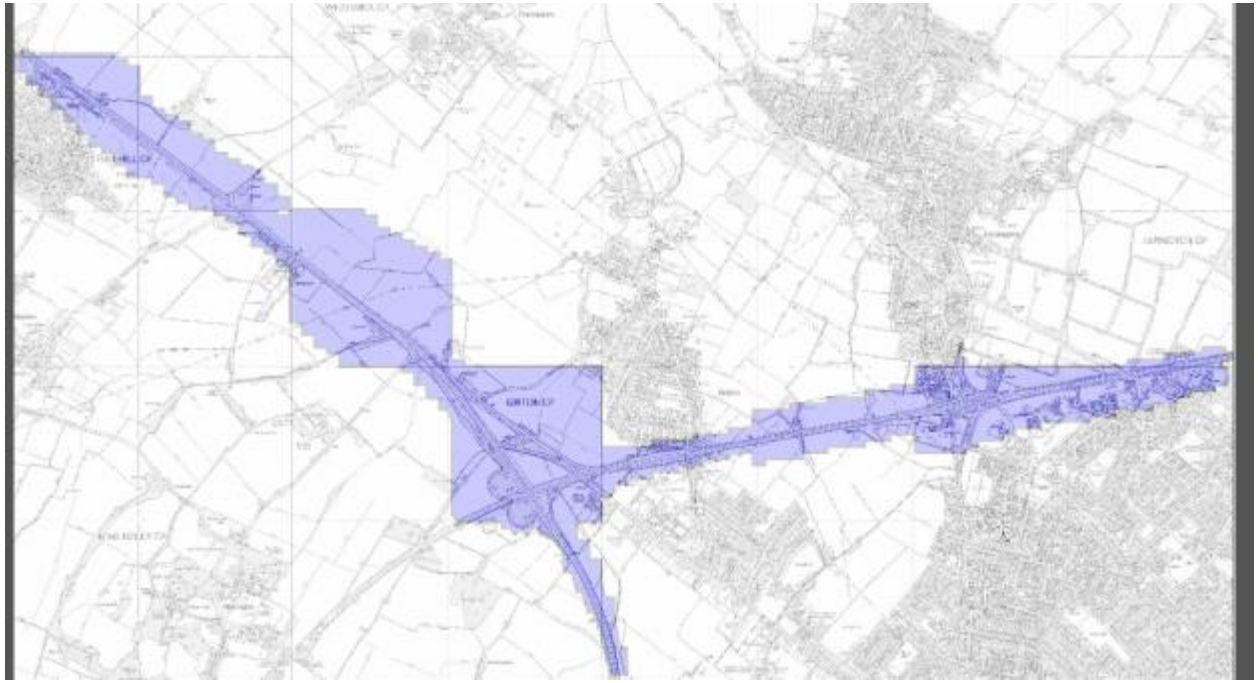
Annualisation Factor for Period Mean January to September - Tube DT8			
Background Site	Annual mean 2017 (Am)	Period Mean 2017 (Pm)	Ratio (Am/Pm)
Wicken Fen	9	8.1	1.111
Market Harborough	9	8.7	1.034
Oxford St Ebbes	14	13.3	1.053
		Average (Ra)	**1.066**

National Bias Adjustment Information

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[5] (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[6]	Bias Adjustment Factor (A) (Cm/Dm)
ESG Didcot	50% TEA in acetone	2017	R	Suffolk Coastal DC	12	45	37	21.7%	G	**0.82**
ESG Didcot	50% TEA in acetone	2017	R	Dumfries and Galloway Council	12	36	29	23.3%	G	**0.81**
ESG Didcot	50% TEA in acetone	2017	KS	Marylebone Road Intercomparison	12	106	79	34.3%	G	**0.74**
ESG Didcot	50% TEA in acetone	2017	R	Vale of White Horse District Council	11	31	25	26.0%	G	**0.79**
ESG Didcot	50% TEA in acetone	2017	UB	Cardiff City Council	10	29	21	35.1%	G	**0.74**
ESG Didcot	50% TEA in acetone	2017	R	Cambridge City Council	12	45	33	37.7%	G	**0.73**
ESG Didcot	50% TEA in acetone	2017	R	Wrexham County Borough Council	12	20	17	14.5%	G	**0.87**
ESG Didcot	50% TEA in acetone	2017	UI	North Lincolnshire Council	12	22	16	40.7%	G	**0.71**
ESG Didcot	50% TEA in acetone	2017	KS	Caerphilly CBC	12	37	32	15.8%	G	**0.86**
ESG Didcot	50% TEA in acetone	2017	R	Caerphilly CBC	11	44	29	51.2%	G	**0.66**
ESG Didcot	50% TEA in acetone	2017	UB	City of York Council	12	23	15	53.4%	G	**0.65**
ESG Didcot	50% TEA in acetone	2017	R	City of York Council	10	37	28	30.8%	G	**0.76**
ESG Didcot	50% TEA in acetone	2017	R	City of York Council	11	32	23	41.0%	G	**0.71**
ESG Didcot	50% TEA in acetone	2017	R	City of York Council	12	40	25	58.6%	G	**0.63**
ESG Didcot	50% TEA in acetone	2017	R	Hambleton District Council	10	21	20	4.0%	G	**0.96**
ESG Didcot	50% TEA in acetone	2017	R	Horsham District Council	11	35	29	18.1%	G	**0.85**
ESG Didcot	50% TEA in acetone	2017	R	Horsham District Council	12	31	26	21.3%	G	**0.82**
ESG Didcot	50% TEA in acetone	2017	R	Horsham District Council	11	33	23	41.1%	G	**0.71**
ESG Didcot	50% TEA in acetone	2017	UC	Leeds City Council 1	12	41	32	28.5%	G	**0.78**
ESG Didcot	50% TEA in acetone	2017	R	Leeds City Council 10	11	48	38	25.1%	S	**0.80**
ESG Didcot	50% TEA in acetone	2017	R	Leeds City Council 2	12	47	35	34.4%	S	**0.74**
ESG Didcot	50% TEA in acetone	2017	R	Leeds City Council 4	11	56	43	29.1%	S	**0.77**
ESG Didcot	50% TEA in acetone	2017	R	Leeds City Council 7	11	38	27	39.8%	S	**0.72**
ESG Didcot	50% TEA in acetone	2017	R	Slough Borough Council	12	45	35	26.4%	G	**0.79**
ESG Didcot	50% TEA in acetone	2017	UB	Slough Borough Council	12	32	25	28.6%	G	**0.78**
ESG Didcot	50% TEA in acetone	2017	UB	Slough Borough Council	11	39	33	19.2%	G	**0.84**
ESG Didcot	50% TEA in acetone	2017	R	Tunbridge Wells	12	56	40	38.2%	G	**0.72**
ESG Didcot	50% TEA in acetone	2017		**Overall Factor[8] (27 studies)**				**Use**		**0.77**

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

South Cambridgeshire District Council AQMA for NO_2 and PM_{10} Link



Automatic Monitors Location

Diffusion Tubes Location


Oakington
A14
B1050
Bar Hill
DT19
DT5
Huntingdon Road
Slate Hall Farm
Dry Drayton Road
The Plantation
Oakington Road
Hacker's Fruit Farm
DT16
A14
The Folly
Catch Hall
DT18
Dry Drayton
Icehouse Grove
Sheepcloss Spinney
Park Street
Duck End
Beck Brook


Farm
21
DT3
Hill Farm
Cottages
Lolworth Spring
Roger's
Wood
Robins Lane
A14
Grange
Cottage
Lolworth


Girton
DT10
A14
Huntingdon Road
14


Babraham Road
New Road
DT17
A1301
Mill La
DT4
Sawston


Sandpit Plantation
New Barn
Bourn Bridge Road
Little Abington
DT29
Hildersham Road
Sluice Wood
A1307


Symonds La
Back Road
Balsham Road
DT6
High Street
Mill La
Hursal Heath Road
Linton
A1307


Plantation
36
Heath Pond Cottages
Novus House
Heath Farm
A505
DT11


Tadlow
The Spinney
B1042
DT7
Tadlow


Harston
DT8
High Street
Church Street
A10

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

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

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

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_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
SO_2	Sulphur Dioxide

References

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