South Cambridgeshire District Council

2019 Air Quality Annual Status Report (ASR)

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

Local Authority Officer:

Soraya Hashemi

Department:

Health and Environmental Services

Address:

South Cambridgeshire Hall

Cambourne Business Park

Cambourne

Cambridgeshire

CB23 3EA

Telephone

01954 713640

E-mail:

air.quality@scambs.gov.uk

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Signed off by:

- Mike Hill – The Interim Chief Executive
- Cllr Bill Handley – The Cabinet Lead Member for Environment
- Dr Liz Robin – The Director of Public Health

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Executive Summary: Air Quality in our area, South Cambridgeshire District Council

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.

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

South Cambridgeshire District Council (SCDC) is a rural district undergoing a significant growth with new or expanded 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.

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 (AQMA) for Nitrogen Dioxide (NO2) and Particulate Matter (PM10) along this stretch in 2008.

These pollutants have been monitored at several locations with both Diffusion Tubes and Automatic monitors. The monitoring results show a decreasing trend in pollution levels and have remained below the national objective levels over the past five years.

Several improvements schemes have been undertaken or are still ongoing on the A14 in recent years. In 2015, improvements between junctions 31 and 32 of the A14 were commenced under the Government's 'Pinch-Point' programme. The scheme involved adding an additional lane for both eastbound and westbound directions.

Since 2017, major improvements works on A14 between Cambridge and Huntingdon have been commenced by Highways England. The scheme is expected to be completed by 2020 and significantly alleviate impacts on local air quality in the management area.

Future major developments are to be largely residential and reliant on road-based transport for travel and commuting to the city, London and the surrounding area. The demand for housing is therefore very high. The majority of the growth is associated with significant developments such as Northstowe (10,000 dwellings) to the North West of Cambridge, Waterbeach Barracks (600010,000 dwellings) to the North East of Cambridge, Bourn Airfield and Cambourne West to the West of Cambridge.

Given the scale of the future developments and their potential to introduce new hotspots where air quality could become a concern, the need for a more robust and up to date monitoring network across the district has been acknowledged.

Most of the housing developments within the district benefit from our low background pollution levels. Therefore, individual developments may not show significant impacts on local air quality when subject to detailed modelling. However, it is likely that the cumulative impacts of multiple developments will pose a long- term risk to air quality if no mitigation measures are implemented to maintain our air quality. This is particularly a challenge where local planning policies do not categorically state what measures are required to improve or mitigate impacts on air quality unless national health objectives are exceeded. Therefore, the need for district-wide air quality measures to maintain air quality was acknowledged through a draft Air Quality Strategy last year which is now under review.

Furthermore, our new Local Plan was adopted in September 2018. The new Local Plan gives a further consideration to air quality through a planning condition for major developments across the district. This condition is focused on promotion of sustainable transport measures to reduce the emissions associated with traffic.

Actions to Improve Air Quality

The challenge of maintaining good air quality in the wider district has been the focus last year. This has been mainly achieved through close partnership with Council Planning and Policy teams, Public Health and Highways England. A summary of main actions taken last year are as follows;

- A Supplementary Planning Document (SPD) on Sustainable Design & Construction is in preparation to support the new Local Plan. Efforts have been made to ensure that air quality requirements are included in this SPD to support the developers with planning applications. These requirements include measures to promote sustainable and low emission transport, behavioural change schemes, modal shifts and support for low emission public transport.
- Efforts have been made to secure implementation of low emission deliverables through planning conditions and Site-Specific Supplementary Planning Documents for major developments such as Waterbeach New Town and Bourn Airfield.
- A new monitor for PM2.5 (Particulate Matters) was installed at Orchard Park School near the A14 and will be operational in summer 2019. This was achieved through a partnership with Highways England and will form a new initiative to monitor air quality at schools near major roads.

Conclusions and Priorities

The review of the monitoring data in 2018 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 overall data indicates a general improvement of air quality since 2016.
- The monitoring data relating to the AQMA also achieved relevant objectives.
- We have undertaken diffusion tube monitoring around the Northstowe New Town since June 2016. The monitoring results are presented in this report for the first time. No exceedances above objective levels were recorded.
- Five additional diffusion tubes were introduced to the monitoring network with regards to ongoing or future developments. The results are below objective levels.
- No new sources of pollution have been identified.

Priorities:

- Implementation of practical low emission measures for major developments district wide.
- Review and update of the monitoring network to ensure wider area of the district is covered.
- Review of the status of AQMA and its revocation as recommended by Defra (due to consistent compliance with objective levels).
- Continue to monitor pollution levels along A14 during the improvements works.

Local Engagement and How to get involved

Details and reports of Air Quality Service are available on our website for public. Share your views and concerns via email address air.quality@scambs.gov.uk and follow our Facebook page[6] for general updates and news.

Do your share to improve air quality in South Cambridgeshire by:

- Avoid using your car for short trips (under 2 miles) – short trips are very polluting as modern engines needs to reach a very high temperature to work efficiently.
- Try using public transport, cycling or walking more often.
- Walking and cycling help you to stay healthy plus save you money in fuel costs.
- Switch it off – turn off your engine if you are caught in a traffic jam or have to wait at level crossings; not only will this reduce your emission but you will save fuel too.
- When driving, use techniques that help you use less fuel.
- You could use 10% less fuel and save money by following the tips on the AA website.
- Consider using an alternative fuel vehicle – There is a growing market for electric vehicles.
- Consider living car free.
- Join a car club.
- Use journey-planning apps such as 'MyBusTrip' or 'MotionMap' for travel by bus, train, walking and cycling.
- Consider working at home occasionally or car sharing.
- Use less energy at home – wood, coal, oil and gas burning all add to air pollution.
- Make your children aware of the impact that day to day activities have on air quality.
- The 'Kidz 4 Clean Air' website has puzzles, games and information about air quality for children (http://www.clean-air-kids.org.uk/)

Local Air Quality Management

This report provides an overview of air quality in South Cambridgeshire District Council 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 South Cambridgeshire 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.

Actions to Improve Air Quality

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 can be found in Table 2.1. Further information related to declared AQMA, including maps of AQMA boundaries are available on our website.

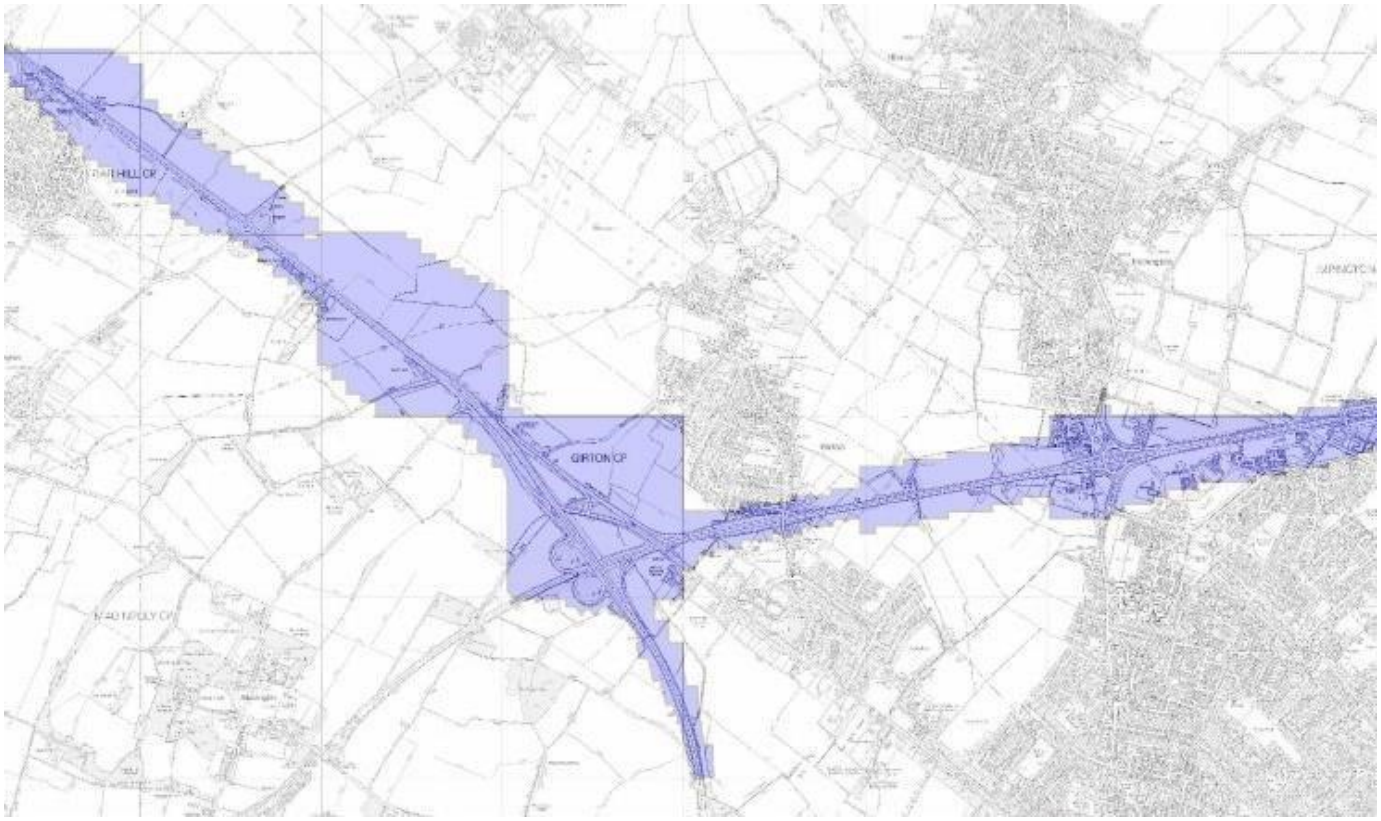


Figure 1 – Map to show the Air Quality Management Area

For reference, a map of South Cambridgeshire's monitoring locations is available in Appendix D.

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 to Milton	Area along A14	Yes	42	µg/m3	Nil	Nil	Nil	Nil	Nil
AQMA 1	2008	NO2 Annual Mean	Bar Hill to Milton	Area along A14	Yes	42	µg/m3	19	µg/m3	Air Quality Action Plan for Cambridgeshire	2009	
AQMA1	2008	PM10 Daily Mean	Bar Hill to Milton	Area along A14	Yes	52	Exceedances	1	Exceedances	Air Quality Action Plan for Cambridgeshire Growth Areas	2009	

South Cambridgeshire District Council confirm the information on UK-Air regarding their AQMA(s) is up to date

Progress and Impact of Measures to address Air Quality in South Cambridgeshire District Council

Defra's appraisal of last year's ASR concluded that we should review the current monitoring programme and redistribute resources where sites have consistently demonstrated compliance well below objective levels. Defra has also concluded that there is no evidence that the AQMA status should continue to be retained since no exceedances of objective levels have occurred within the AQMA since 2013 and recommended that AQMA should be considered for revocation.

Defra's recommendations have been acknowledged and the following actions have been taken;

- New diffusion tubes were included in the monitoring network in relation to ongoing or future developments.
- Diffusion tube monitoring was undertaken at Northstowe New Town. The data for these tubes are available since June 2016 and is presented in this report for the first time.
- A new $PM_{2.5}$ automatic monitor has been installed at Orchard Park School near the A14 and expected to be operational in summer 2019.
- It was acknowledged that the monitored levels within the AQMA have been in compliance with the objective levels over the past five years. We will therefore review the revocation of the AQMA as recommended by Defra but will continue to monitor air quality in this area until the A14 improvements works are completed.

In addition, a further review of the monitoring network and a survey to identify new hotspots will be undertaken to ensure the wider area of the district is monitored.

South Cambridgeshire has taken forward a number of measures during the current reporting year of 2018 in pursuit of improving and maintaining good air quality in wider district.

A new Supplementary Planning Document (SPD) on Sustainable Design & Construction is in preparation to support our new Local Plan. Air quality requirements have been included in this SPD to support the major developments across the district through planning process. These requirements include detailed measures to minimise the impact of the developments on local air quality through sustainable and low emission transport, behavioural change schemes and support for low emission public transport.

Efforts have been made to secure implementation of low emission measures and deliverables through planning conditions and Site Specific Supplementary Planning Documents (SPDs) for developments such as Waterbeach New Town and Bourn Airfield.

A new monitor for $PM_{2.5}$ (Particulate Matters) was installed at Orchard Park School near the A14 and is expected to be operational in summer 2019. This was achieved through partnership with Highways England and forms a new initiative to monitor actual exposure levels at schools near major roads.

Other key measures relate to the completion of major highway improvements along the AQMA. Although it is acknowledged that the key driver in these aspects has been other factors rather than air quality alone. Details of all measures completed, in progress or planned are set out in the Progress on Measures to Improve Air Quality table.

Progress on Measures to Improve Air Quality

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
1	Low Emission Strategies	Policy Guidance and Development Control, Alternatives to private vehicle use	Promotion of Sustainable Transport, Car clubs, cycling, etc.	Developers Contributions	2018 – 2019	2018 – 2019	To be confirmed – May involve ratio of PPs issued with LES	N / A	In progress	N / A
2	Guided Bus Way	Transport Planning and Infrastructure	Bus Route Improvements	Cambridgeshire County Council	2009 – 2010	2011	N / A	None	Completed	N / A
3	A14 improvement – junction 31 – 32	Traffic Management	Strategic highway improvements	Cambridgeshire County Council	N / A	2015	N / A	None	Completed Autumn 2015	N / A

	(E / B & W / B)									
4	A14 / M11 Realignment	Traffic Management	Strategic highway improvements	Cambridgeshire County Council	N / A	2016 – 2020	Central Government / Highways England Commitment	None	Work to commence 2016 / 2017 (Package 1)	2020
5	Policy Guidance and Development Control	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	South Cambridgeshire District Council	2015	2016	LDF Policy NE / 16	None	SPD or Developers Guide for Low Emission Strategy measures	2016
6	City Deal	Transport Planning and Infrastructure Promoting Travel Alternatives	Bus route improvements and promotion of cycling / sustainable transport	Cambridgeshire City and County Council	2015 – 2030	2016	Connect existing and new residential and employment areas with high quality public transport networks,	None	Proposed scheme for making bus, cycle and walking journeys more convenient and safer	Tranche 1 schemes by 2019

							including new orbital bus routes around Cambridge & comprehensive network of pedestrian and cycle route.		from Northstowe announced.	

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.

South Cambridgeshire District Council undertakes monitoring for $PM_{2.5}$ on Huntingdon Road. The $PM_{2.5}$ concentrations monitored at Girton site were slightly higher than that predicated by Defra in 2018 confirming an area affected by traffic.

Additional monitoring of $PM_{2.5}$ was considered and a new monitor was installed at Orchard Park School near the A14. The aim of this initiative is to monitor the actual levels of exposure for most sensitive receptors near major roads. The monitor is expected to be operational in summer 2019.

We have participated in the publicity campaigns to provide information about impacts of wood burning, what type of wood to burn and how to burn it efficiently by Defra. The information is available online[9]. Furthermore, a publicity campaign about traffic idling near schools is anticipated for Clean Air Day next year.

County Council elected members have noted the impacts of poor air quality and have passed a resolution to work with its partner councils and other public bodies towards promoting a programme of active participation across Cambridgeshire to address air pollution more collaboratively, including the development of communication resources, training and learning events, guidance for communities on air quality monitoring, and collaborative working.

The Greater Cambridgeshire Partnership's Greenways project[10] aims to establish a high-quality network of twelve separate routes into Cambridge from surrounding towns and villages. It involves high quality network of routes from South Cambridgeshire into Cambridge city which aims to increase the level of safe cycling and walking in order to reduce traffic congestion as the city grows.

The Public Health England (PHE) provides the government, local government, the NHS and the public with evidence-based professional, scientific expertise and support. They have included a specific health indicator relating to fine particulate matter within the Public Health Outcomes Framework (PHOF). It is called the fraction of all-cause mortality attributable to anthropogenic particulate air pollution (measured as fine particulate matter, $PM_{2.5}$). This was reported as 5.3% for Cambridgeshire in 2016.

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

Summary of Monitoring Undertaken

South Cambridgeshire District Council operates Automatic Monitoring Stations at three sites and undertakes non-automatic (passive) monitoring of NO_2 at 27 sites within the District. Automatic Monitoring Stations are located at Orchard Park (Cambridge), Girton and Impington. All stations monitor PM_{10} and NO_2. Girton site also measures $PM_{2.5}$.

Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives. The Automatic Monitoring Stations at Girton and Impington sites are representative of nearby receptors. The Orchard Park monitor is a background site located within the school grounds. 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 was 98% for Impington site, 97% for Orchard Park and 95% for Girton site. Orchard Park and Impington sites achieved 92% for PM_{10}. Girton site achieved 91% for PM_{10} and 92% for $PM_{2.5}$.

The monitoring results show that:

- No exceedances of annual mean objective for NO_2 or PM_{10} was recorded
- No exceedances of annual mean objective for $PM_{2.5}$ was recorded
- The hourly mean objective for NO_2 hourly mean was achieved at all sites
- The daily mean objective for PM_{10} was achieved at all sites

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.

Non-Automatic Monitoring Sites

We undertook non- automatic (passive) monitoring of NO_2 at 27 sites during 2018. The monitoring network was subject to some changes as follows;

- DT3 and DT16 were withdrawn from the network due to dangerous access.
- DT6 in Linton and DT8 in Harston were relocated and renamed as DT-6N and DT-8N respectively to represent a roadside location with relevant exposure.

- New diffusion tubes were added to the network to improve the monitoring area with regards to future and ongoing developments. These include DT-28N on Cambridge road in Milton, DT30N on Denny road in Waterbeach and DT-32N on Ely road A10.

In addition, we have commenced a monitoring programme for the Northstowe New Town since June 2016. Diffusion tubes results are presented in this report for the first time. These tubes are labelled as DT-LN (1 to 5).

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.

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.

Nitrogen Dioxide (NO2)

Data capture was over 75% for all diffusion tubes except for DT10, DT18 and DT32N with 42%, 50% and 58% respectively. The low data capture was due to missing tubes for DT10 and dangerous access for DT18. DT32N was added to the monitoring network in April. The results for these tubes were subject to annualisation according to Technical Guidance LAQM.TG16 (Box 7.9).

Following National Bias Adjustment, results for all diffusion tubes remain below the annual mean objective for 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. 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.

Particulate Matter (PM10)

No exceedances above objective limits have been recorded. Table A.5 in Appendix A compares the ratified continuous monitored PM10 daily mean concentrations for the past 5 years with the air quality objective of 50µg/m3, not to be exceeded more than 35 times per year.

Particulate Matter (PM2.5)

Monitored levels remain below the objective levels. Table A.6 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past 5 years.

Monitoring Results

Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) [1].	Distance to curb of nearest road (m) [2].	Inlet Height (m)
IMP	Impington (A14)	Roadside	543739	261625	NO_x (NO_2) PM_{10}	Yes	ET M200E / ET BAM1020	Y (12 m)	2	2
ORCH	Orchard Park Primary School (A14)	Urban Background	544558	261579	NO_x (NO_2) PM_{10}	Yes	ET M200E / ET BAM1020	Y (1 m)	N / A	2
GIRT	Girton	Roadside	542676	260667	NO_x (NO_2) PM_{10} PM_{25}	No	ET M200E / ET BAM1020	Y (5 m)	5	2

Notes:

[1] 0 m 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.

Details of Non-Automatic Monitoring Site

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1].	Distance to curb of nearest road (m) [2].	Tube collocated with a Continuous Analyser?	Height (m)
DT1	1 Coppice, Histon	Urban Background	544230	262048	NO2	No	7 m	0.5 m	No	2
DT2	The Gables, High Street, Histon	Roadside	543770	263678	NO2	No	5m	1m	No	2
DT3	Hill Farm Cottages, A14	Roadside	536926	264956	NO2	Yes	N	4m	No	2
DT4	96 High Street, Sawston	Urban Background	548600	249136	NO2	No	5m	1m	No	2
DT5	Rhadegund Farm Cottage, Bar Hill, A14	Roadside	538744	263640	NO2	Yes	1m	33m	No	2
DT6	64 High Street, Linton	Roadside	556179	246815	NO2	No	7m	0.5m	No	2
DT7	20 High Street, Tadlow	Roadside	528131	247399	NO2	No	10m	2m	No	2

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1].	Distance to curb of nearest road (m) [2].	Tube collocated with a Continuous Analyser?	Height (m)
DT8	47 High Street, Harston	Urban Background	542554	251002	NO2	No	5m	1m	No	2
DT9	3 Garner Close, Milton	Urban Background	547452	263175	NO2	No	5m	1m	No	2
DT10	1A Weavers Field, Girton	Urban Background	542537	261467	NO2	Yes	15m	1m	No	2
DT11	Heath House, A505, Thriplow	Urban Background	544034	244585	NO2	No	10m	1m	No	2
DT12	Lone Tree Avenue, Impington	Roadside	544119	261862	NO2	Yes	7m	0.5m	No	2
DT13	1 Brook Close, Histon	Urban Background	543955	263588	NO2	No	2m	1m	No	2
DT14	22 Water Lane, Histon	Roadside	544050	263306	NO2	No	2m	0.5m	No	2
DT15	72 Cambridge Road, Impington	Urban Background	544243	261819	NO2	Yes	7m	0.5m	No	2

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1].	Distance to curb of nearest road (m) [2].	Tube collocated with a Continuous Analyser?	Height (m)
DT16	Hackers Fruit Farm, A14	Roadside	539846	262826	NO2	Yes	5m	12m	No	2
DT17	5 Mill Lane, Sawston	Roadside	548545	249366	NO2	No	15m	1m	No	2
DT18	1 Catchall Farm, Cottages, A14	Roadside	540509	262290	NO2	Yes	1m	10m	No	2
DT19	Crafts Way, Bar Hill	Roadside	538472	263675	NO2	No	15m	1m	No	2
DT20	Chieftain Way, Orchard Park	Roadside	544828	261738	NO2	Yes	1m	0.5m	No	2
DT21	Neal Drive, Orchard Park	Roadside	545056	261784	NO2	Yes	1m	0.5m	No	2
DT22	Flack End, Orchard Park	Roadside	545435	261906	NO2	Yes	2m	35m	No	2
DT23a	Orchard Park School	Urban Background	544557	261571	NO2	Yes	1m	50m	Yes	2

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1].	Distance to curb of nearest road (m) [2].	Tube collocated with a Continuous Analyser?	Height (m)
DT23b	Orchard Park School	Urban Background	544557	261571	NO2	Yes	1m	50m	Yes	2
DT23c	Orchard Park School	Urban Background	544557	261571	NO2	Yes	1m	50m	Yes	2
DT26	Co-op, High Street, Histon	Roadside	543768	263708	NO2	Yes	1.5m	2.6m	No	2
DT27	Engeldow Drive, Orchard Park	Urban Background	545259	261873	NO2	Yes	5m	4.5m	No	2
DT28	22 Topper Street, Ordhard Park	Roadside	545169	261764	NO2	Yes	4.2m	0.2m	No	2
DT29	Church Lane, Little Abington	Urban Background	552961	249251	NO2	No	14m	2.0m	No	2
DT-6N	22 High Street, Linton	Roadside	555942	246680	NO2	No	1m	2m	No	2
DT-8N	47 High Street, Harston	Roadside	542555	251001	NO2	No	5m	2m	No	2

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1].	Distance to curb of nearest road (m) [2].	Tube collocated with a Continuous Analyser?	Height (m)
DT-28N	73 Cambridge Road, Milton	Roadside	547436	262295	NO2	No	10m	2m	No	2
DT-30N	63, Denny End Rd, Waterbeach	Roadside	549154	266006	NO2	No	5m	2m	No	2
DT-32N	Banworth, Ely Road, A10	Roadside	548742	264698	NO2	No	10m	2m	No	2
DT-LN1	Old Railway Tavern	Roadside	539847	268169	NO2	No	5m	1m	No	2
DT-LN2	75 High St. Longstanton	Roadside	539570	266842	NO2	No	2m	1m	No	2
DT-LN3	1 Rampton Drift	Roadside	540553	266869	NO2	No	5m	1m	No	2
DT-LN4	37 Longstanton	Roadside	540963	264474	NO2	No	5m	1m	No	2
DT-LN5a	Longstanton bypass	Roadside	539614	267484	NO2	No	20m	1m	No	2

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1].	Distance to curb of nearest road (m) [2].	Tube collocated with a Continuous Analyser?	Height (m)
DT-LN5b	Longstanton bypass	Roadside	539614	267484	NO2	No	20m	1m	No	2
DT-LN5c	Longstanton bypass	Roadside	539614	267484	NO2	No	20m	1m	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.

Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1].	Valid Data Capture 2018 (%) [2].	NO2 Annual Mean Concentration (µg/m3) [3].				
					2014	2015	2016	2017	2018
IMP	Roadside	Automatic	98	98	23	22	23	23	19
ORCH	Urban Background	Automatic	97	97	19	18	18	18	14
GIRT	Roadside	Automatic	95	95	25	24	23	23	18
DT1	Urban Background	Tube	100	100	18.9	17.4	21.3	17.2	14.7
DT2	Roadside	Tube	100	100	31.5	30.6	27.8	27.4	27.1
DT3	Roadside	Tube	0	0	31.8	29.8	27.6	26.5*	N / A
DT4	Urban Background	Tube	100	100	28.3	23.8	26.6	26.1	24.7
DT5	Roadside	Tube	92	92	21.7	19	20.6	16.2	19.4
DT6	Roadside	Tube	0	0	31.1	27.4	27.9	29.2*	N / A
DT7	Roadside	Tube	75	75	11.9	10.4	11.8	12.1	8.6
DT8	Urban Background	Tube	0	0	28	28.4	28.6	27.3*	N / A
DT9	Urban Background	Tube	92	92	17.3	16.4	17.8	17.5	14.4

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1].	Valid Data Capture 2018 (%) [2].	NO2 Annual Mean Concentration (µg/m3) [3].				
					2014	2015	2016	2017	2018
DT10	Urban Background	Tube	42	42	30.5	26	26.2	26.3	25.8*
DT11	Urban Background	Tube	100	100	28.2	26.1	26	24.6	24.9
DT12	Roadside	Tube	92	92	21.1	17.9	19.4	18.8	15.1
DT13	Urban Background	Tube	92	92	19.7	17.7	19.2	18.5	17.2
DT14	Roadside	Tube	100	100	28.6	24.4	27	26.4	23.6
DT15	Urban Background	Tube	100	100	22.3	20.2	20.3	19.4	17.5
DT16	Roadside	Tube	0	0	38	32.8	37.1	28.6	N / A
DT17	Roadside	Tube	92	92	15.1	14.3	16.4	14.1	13.1
DT18	Roadside	Tube	50	50	25.4	21.7	24.1	25.8	33.1*
DT19	Roadside	Tube	0	0	22.9	19.8	24.5	20.3	N / A
DT20	Roadside	Tube	75	75	21.9	17.6	23.1	18.2	23.2
DT21	Roadside	Tube	100	100	20.8	18.2	20.5	18.8	16.7
DT22	Roadside	Tube	92	92	24.1	20.6	22.4	21.2	17.5
DT23a	Urban Background	Tube	83	83	20.4	17.3	17.8	16.6	16.4

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1].	Valid Data Capture 2018 (%) [2].	NO2 Annual Mean Concentration (µg/m3) [3].				
					2014	2015	2016	2017	2018
DT23b	Urban Background	Tube	83	83	19.8	16.8	17.9	16.2	16.5
DT23c	Urban Background	Tube	83	83	19.4	17.9	17.4	15.9	16.1
DT26	Roadside	Tube	100	100	21.2	18.6	19.7	18.9	17.8
DT27	Urban Background	Tube	100	100	24	20.8	22.1	21.2	17.9
DT28	Roadside	Tube	100	100	21.5	20.3	21	21.3	16.6
DT29	Urban Background	Tube	100	100	12.5	11.3	12.5	11.0	10.0
DT-6N	Roadside	Tube	100	100	-	-	-	-	20.2
DT-8N	Roadside	Tube	100	100	-	-	-	-	17.3
DT-28N	Roadside	Tube	100	100	-	-	-	-	22.8
DT-30N	Roadside	Tube	83	83	-	-	-	-	16.0
DT-32N	Roadside	Tube	58	58	-	-	-	-	23.4*
DT-LN1	Roadside	Tube	92	92	-	-	22.7	18.5	18.6
DT-LN2	Roadside	Tube	75	75	-	-	16.9	16.6	14.5

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1].	Valid Data Capture 2018 (%) [2].	NO2 Annual Mean Concentration (µg/m3) [3].				
					2014	2015	2016	2017	2018
DT-LN3	Roadside	Tube	83	83	-	-	13.2	12.7	11.8
DT-LN4	Roadside	Tube	92	92	-	-	15.2	14.6	12.1
DT-LN5a	Roadside	Tube	92	92	-	-	26.7	26.3	24.3
DT-LN5b	Roadside	Tube	92	92	-	-	26	26.7	23.9
DT-LN5c	Roadside	Tube	92	92	-	-	25.6	27.4	24.6

☒ Diffusion tube data has been bias corrected ☒ Annualisation has been conducted where data capture is <75%

Notes:

(*) Annualised data

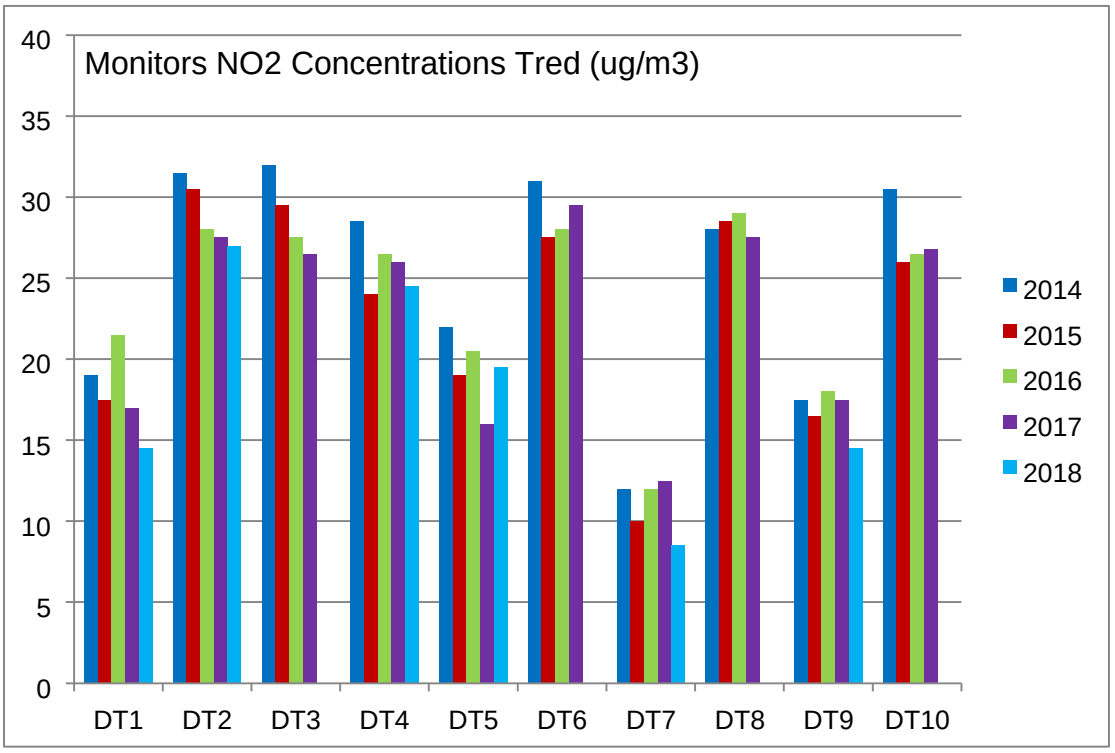
(NA) Not Active

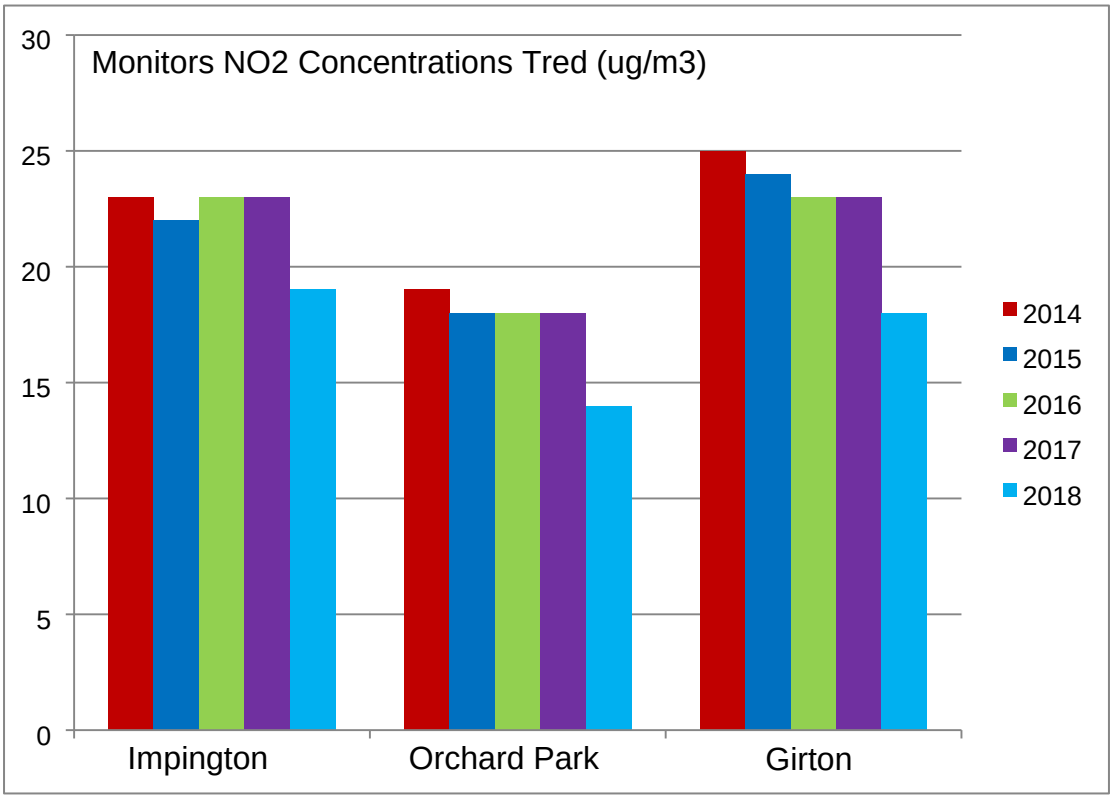
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(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%)

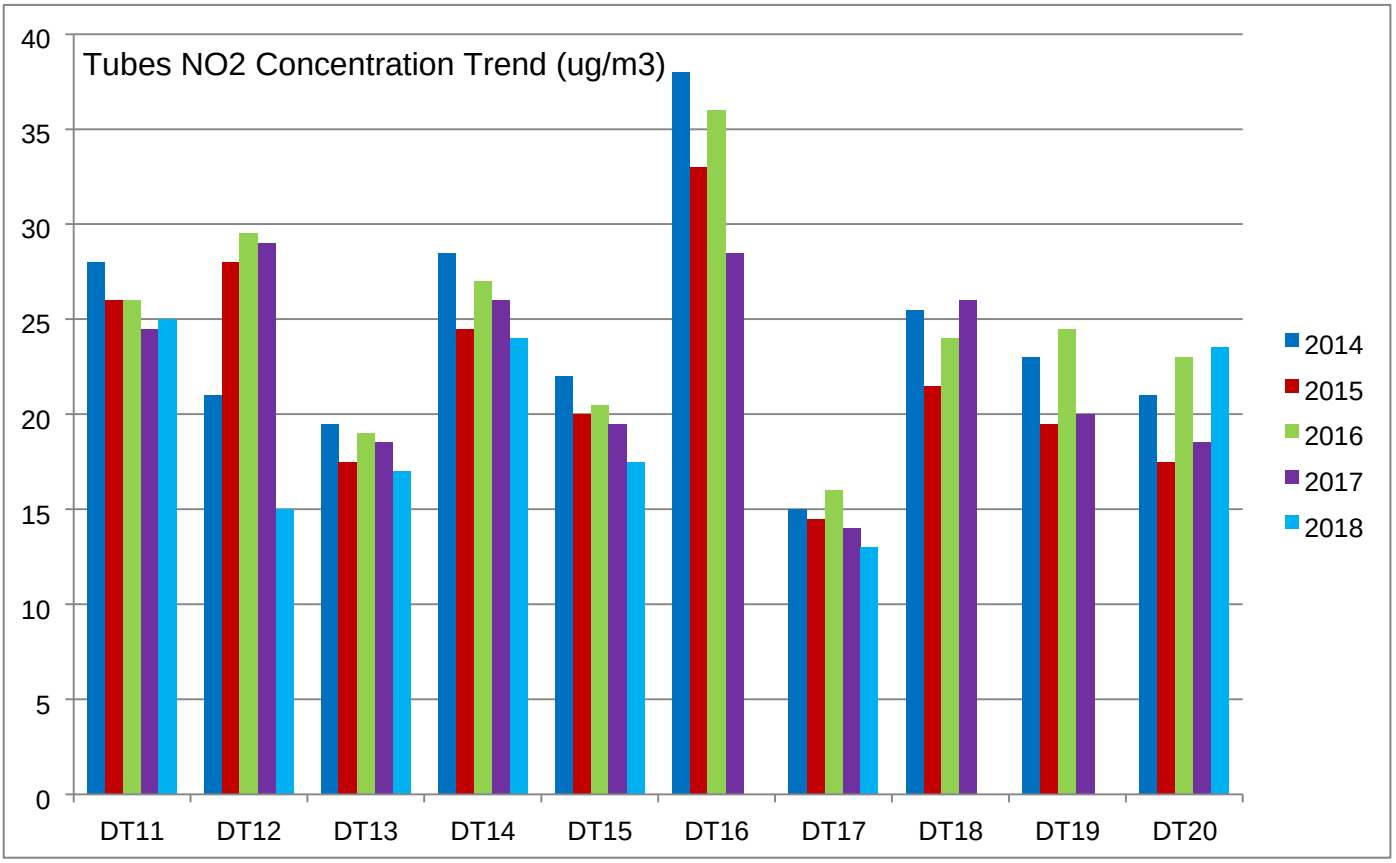
(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM. TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

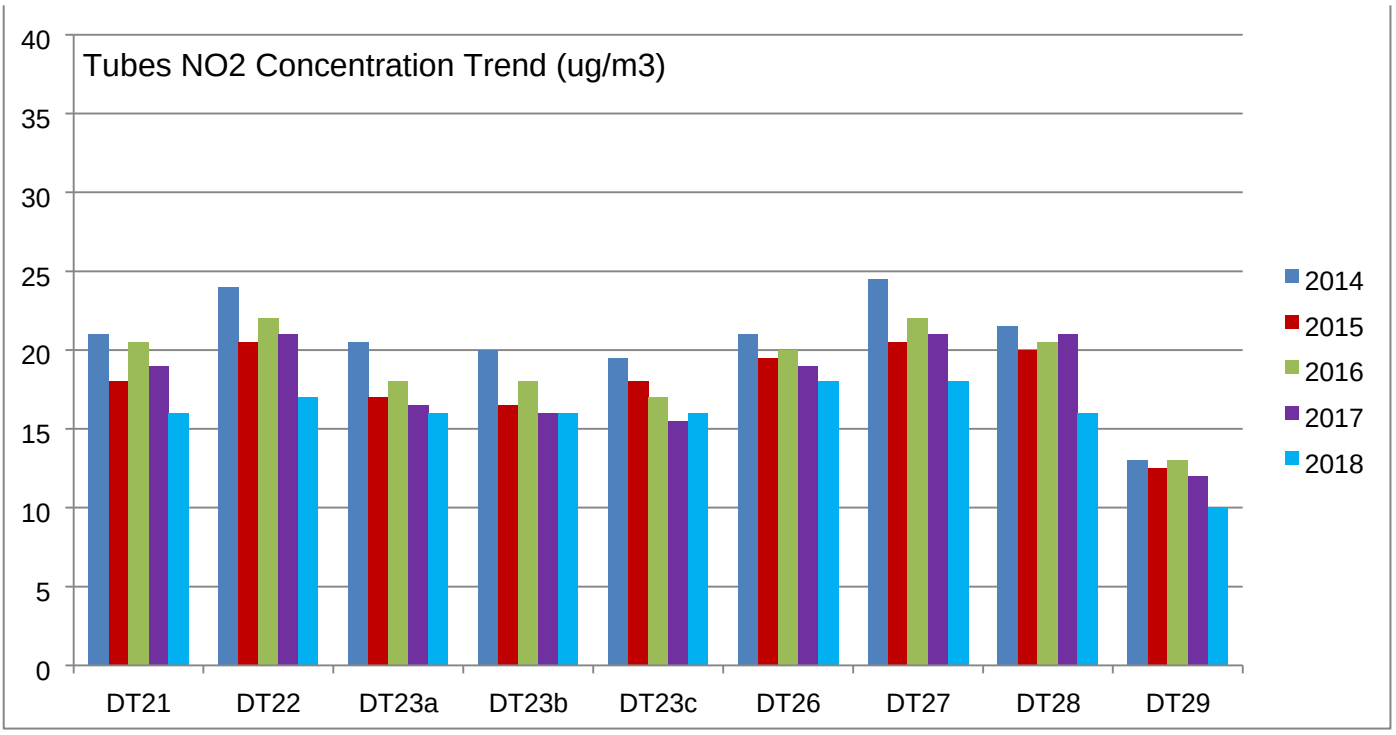
Trends in Annual Mean NO_2 Concentrations





Trends in Annual Mean NO_2 Concentrations – Continued





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].	NO2 1 – Hour Means 200 µg/m3 [3].				
					2014	2015	2016	2017	2018
IMP	Roadside	Automatic	98	98	0	0	0	0	0
ORCH	Urban Background	Automatic	97	97	0	0	0	0	0
GIRT	Roadside	Automatic	95	95	0	0	0	0	0

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

PM_{10} Annual Mean Concentration (µg/m^3)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) [1].	Valid Data Capture 2018 (%) [2].	PM10 Annual Mean Concentration (µg/m3 [3].				
				2014	2015	2016	2017	2018
IMP	Roadside	92	92	22	18	1	16	17
ORCH	Urban Background	92	92	22	16	16	14	14
GIRT	Roadside	91	91	16	11	17	17	17

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

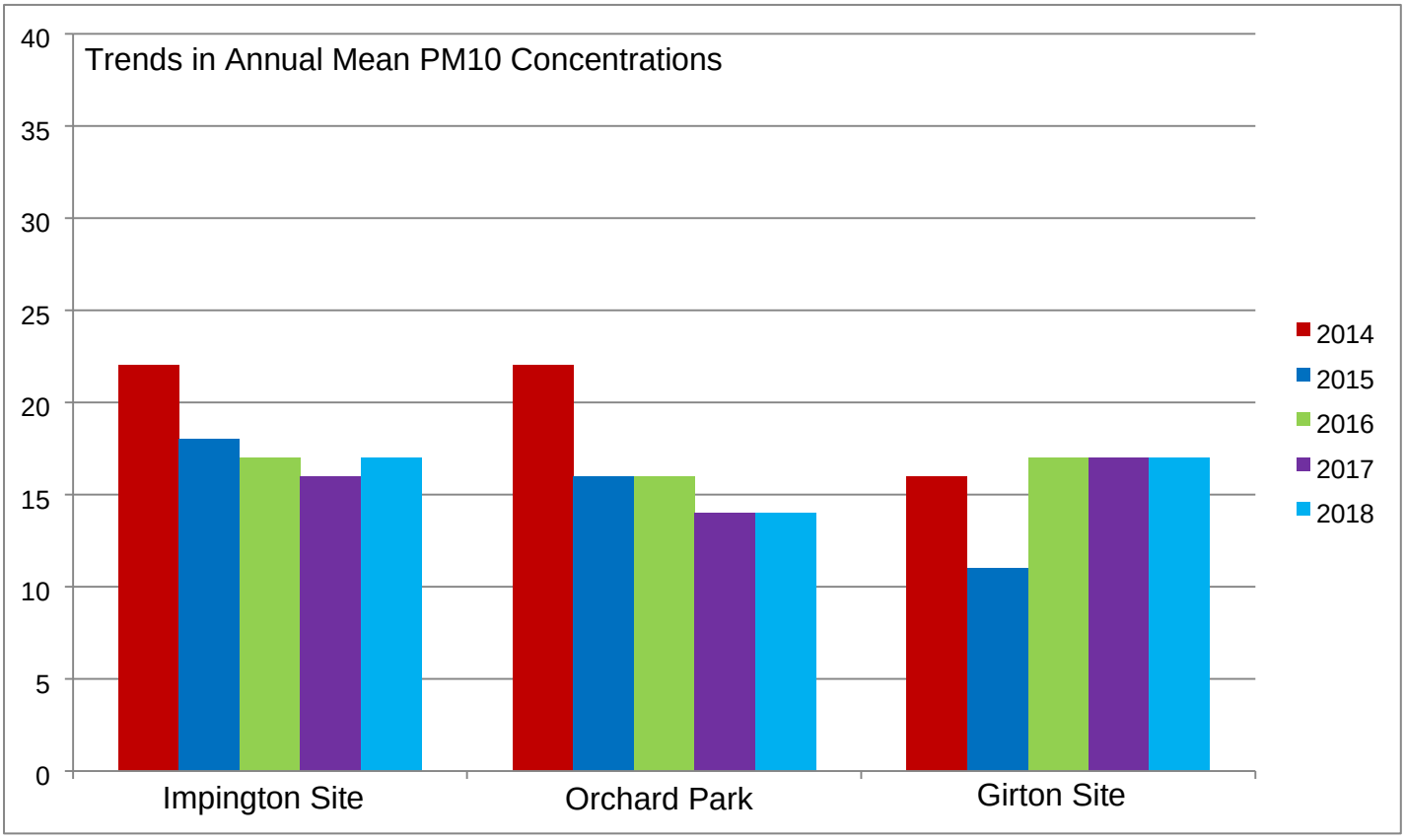
Notes:

[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.

Trends in Annual Mean PM_{10} Concentrations



24 Hour Mean PM10 Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) [1].	Valid Data Capture 2018 (%) [2].	PM10 24 – Hour Means > 50µg/m3 [3].				
				2014	2015	2016	2017	2018
IMP	Roadside	92	92	4	2	1	2	1
ORCH	Urban Background	92	92	7	1	1	1	1
GIRT	Roadside	91	91	2	1	1	1	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] If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

$PM_{2.5}$ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) [1].	Valid Data Capture 2018 (%) [2].	PM10 24 – Hour Means > 50µg/m3 [3].				
				2014	2015	2016	2017	2018
GIRT	Roadside	92	92	12	11	13	11	11

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

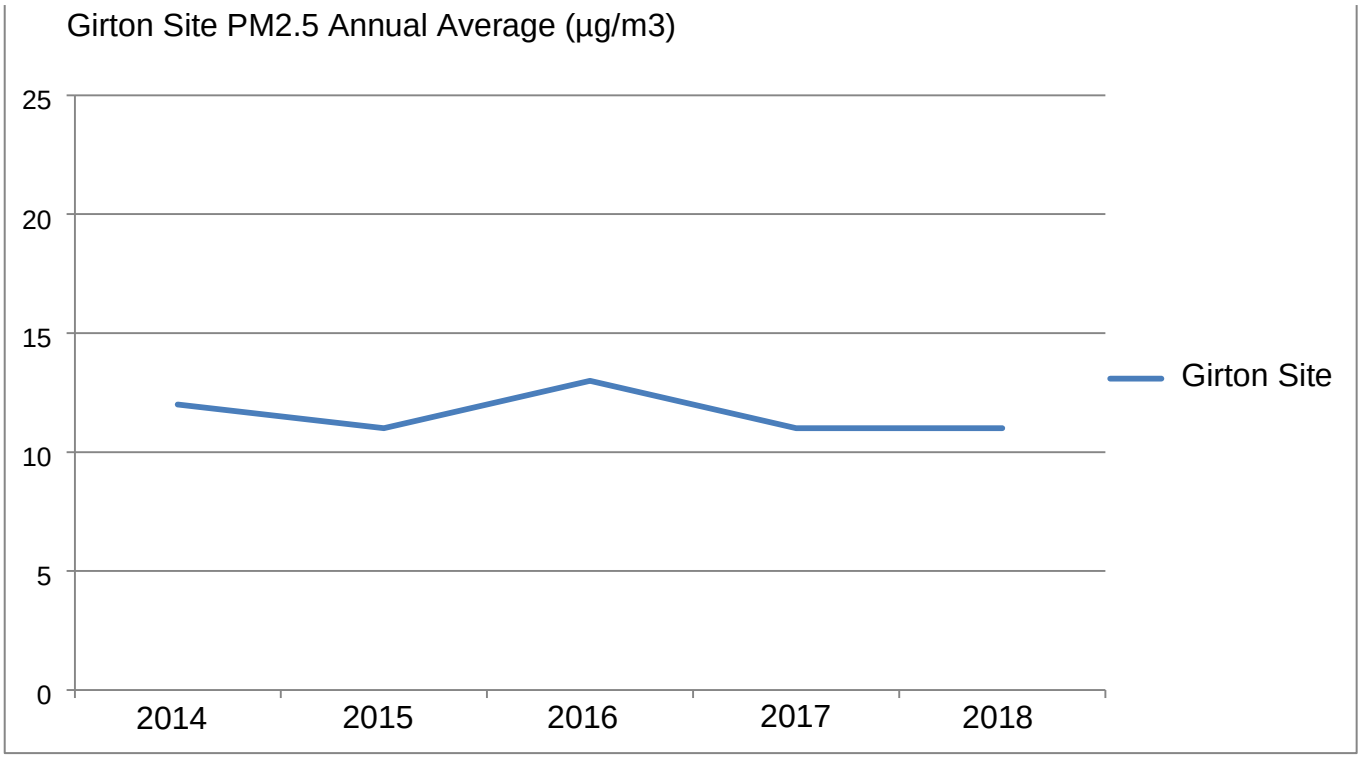
Notes:

[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.

Trends in Annual Mean $PM_{2.5}$ Concentrations



Full Monthly Diffusion Tube Results for 2018

NO2 Monthly Diffusion Tube Results – 2018

Site ID	NO2 Mean Concentrations (µg/m3)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (0.76) and Annualised [1]
DT1	24.6	24.1	25.1	16.6	15.8	10.0	16.2	14.2	20.1	18.1	25.4	22.0	19.4	14.7
DT2	40.9 [3]	35.3	43.4 [3]	37.4	32.6	23.7	36.8	31.0	39.9	31.3	39.9	36.1	35.7	27.1
DT3	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
DT4	38.5	38	33.1	30.7	28.2	23.1	30.8	27.6	32.1	36.3	36.1	35.8	32.5	24.7
DT5	19.9	25.8	27.9	20.4	33.7	24.3	25.4	14.1	17.9	24.6	-	46.3 [3]	25.	19.4
DT6	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
DT7	Missing	Missing	15.1	11.7	8.2	6	4.6	9.2	13.5	Missing	18.5	15.5	11.4	8.6
DT8	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
DT9	Missing	26.3	22.9	15.8	12.7	7.8	12.8	14.8	21	20.7	26.6	27.5	19.0	14.4
DT10	35.7	Missing	86 [3]	Missing	Missing	Missing	21.9	Missing	Missing	Missing	26.4	29.6	39.9	25.8 [4]
DT11	38.5	36.6	37.4	30.2	27.4	26.9	34.2	29.5	34.5	30.6	31.5	35.8	32.8	24.9

Site ID	NO2 Mean Concentrations (µg/m3)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (0.76) and Annualised [1]
DT12	Missing	24.3	25.9	22.5	12.7	10.5	15.9	15	22.2	20.7	28	21.2	19.9	15.1
DT13	31.9	27.7	26.8	19	14.2	16.7	16.9	15.3	23.6	Missing	28.8	28.5	22.7	17.2
DT14	41.9 [3]	28.8	42 [3]	25.5	26	17	26.6	22.7	33.4	32.8	40.2 [3]	25.4	31.0	23.6
DT15	31.	27.6	32.1	24.1	17.5	11.2	18.4	15.7	21.4	22	29.4	25.9	23.1	17.5
DT16	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
DT17	20.8	20.2	19.7	14.3	12.5	10.3	14.9	13.7	Missing	17.3	24.9	21	17.2	13.1
DT18	35.3	Missing	Missing	35.9	50.1 [3]	47.8 [3]	36.2	21	29.2	Missing	Missing	Missing	36.5	33.1 [4]
DT19	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
DT20	28.1	27.1	31.2	23.2	18.1	15.5	16.7	Missing	Missing	57.9 [3]	Missing	57 [3]	30.5	23.2
DT21	29.5	29.6	30.6	20.7	15.7	12.2	16.3	13.4	21.9	22.7	28.5	23.2	22.0	16.7
DT22	29.4	32.2	29.3	22.5	19.3	18.4	18	14.7	Missing	21.7	22	26.4	23.1	17.5
DT23a	27.3	20.6	21.5	17.8	12	11.2	13.3	Missing	Missing	25.8 [3]	22.5	23.8	21.6	16.4
DT23b	27	19.9	21.9	14.5	12.5	10.8	13.5	Missing	Missing	51.4 [3]	21.9	23.2	21.7	16.5

Site ID	NO2 Mean Concentrations (µg/m3)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (0.76) and Annualised [1]
DT23a	27.3	20.6	21.5	17.8	12	11.2	13.3	Missing	Missing	25.8 [3]	22.5	23.8	21.6	16.4
DT23b	27	19.9	21.9	14.5	12.5	10.8	13.5	Missing	Missing	51.4 [3]	21.9	23.2	21.7	16.5
DT23c	23.9	22.6	22.8	15.1	11.6	10.8	13	Missing	Missing	49 [3]	21.6	22	21.2	16.1
DT26	28.8	28.1	29.2	21.4	18.2	14.9	18.2	15.3	24.7	24.4	30.9	27.1	23.4	17.8
DT27	25.6	35.5	23.6	23	20.9	16.1	17.9	16.6	22.7	26.2	29.8	25.1	23.6	17.9
DT28	24.2	28.7	23.5	19.6	15.3	13.1	15.7	14.2	23.1	22.6	31.2	30.4	21.8	16.6
DT29	16.8	18.1	14.9	11.4	10.4	4.6	8.9	9.2	13.5	13.8	18.8	17.8	13.2	10.0
DT6N	28.2	32.6	28.1	27.2	20.7	19.4	22.4	20.9	26.1	29	34.2	29.8	26.6	20.2
DT8N	26.3	31.2	25.9	21.6	19.1	13.9	22.1	14.7	18.8	21.6	34.5	23.3	22.2	17.3
DT28N	42.2 [3]	35.9	27.9	28.6	19.2	16.6	22.9	22.3	33.6	30.4	24.3	38	30.0	22.8
DT30N	Nil	35.2	22.5	21.4	9.8	Missing	15.4	14.4	22.7	27.2	27.2	21.0	21.0	16.0
DT32N	Nil	Nil	Nil	26.8	29.1	23	28.6	25.4	Missing	Missing	28.3	33	27.7	23.4 [4]
DTLN1	26.1	27.4	27.7	24.2	18.7	19.3	22.8	18.2	26.9	28.1	30.4	Missing	24.5	18.6

Site ID	NO2 Mean Concentrations (µg/m3)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (0.76) and Annualised [1]
DTLN2	26.9	23.6	21.4	20.6	12.4	11.7	15.2	14.9	Missing	Missing	25.5	Missing	19.1	14.5
DTLN3	22.8	19	14.4	11.5	Missing	Missing	10	10.3	15.4	16.1	20	Missing	15.5	11.8
DTLN4	25.2	21.6	18	13.8	10.7	8	11.4	10.8	14.3	17.3	23.4	Missing	15.9	12.1
DTLN5a	28.6	28.1	28	28.6	30.6	31.5	41.2 [3]	30.1	39.3	37.1	28.9	Missing	32.0	24.3
DTLN5b	29.6	34.6	24.5	23.9	29.6	32.5	40.9 [3]	30.3	37.9	36.7	25.3	Missing	31.4	23.9
DTLN5c	36	33.1	27.9	26.6	27.6	34.6	38.6	31	40.3 [3]	34.7	25.7	Missing	32.4	24.6

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

Notes:

[1] See Appendix C for details on bias adjustment and annualisation.

[2] Distance corrected to nearest relevant public exposure.

[3] Exceedances of the NO_2 annual mean objective of 40µg/m$^{3.}$

[4] NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective.

Supporting Technical Information / Air Quality Monitoring Data QA / QC

Automatic Monitoring

South Cambridgeshire District Council is a member of the Calibration Club, operated by AEAT now Ricardo – AEA. All NO_x 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. QA / QC of automatic monitoring data is carried out by Ricardo – AEA (http://www.aeat.co.uk). Tri-annual audits of the monitoring stations are carried out by Ricardo. 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 Ricardo – AEA for QA / QC and ratification purposes.

Non-Automatic Monitoring

NO_2 monitoring was undertaken at 27 sites within the district using passive diffusion tubes. The samples have been analysed in accordance with SOCOTEC's standard operating procedure ANU / SOP / 1015. This method meets the guidelines set out in DEFRA's 'Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance.' The tubes were prepared by spiking acetone triethanolamine (50:50) onto the grids prior to the tubes being assembled. The tubes were desorbed with distilled water and the extract analysed using a segmented flow auto-analyser with ultraviolet detection. Please note:

(i) As set out in the practical guidance, the results were initially calculated assuming an ambient temperature of 11^{oC}, the reported values have been adjusted to 20^{oC} to allow for direct comparison with EU limits.

(ii) The reported results have not been bias adjusted.

This analysis of diffusion tube samples to determine the amount of nitrogen dioxide present on the tube is within the scope of our UKAS schedule. Any further calculations and assessments requiring exposure details and conditions fall outside the scope of our accreditation. In the AIR PT intercomparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes, SOCOTEC currently holds the highest rank of a satisfactory laboratory.

A national bias adjustment factor of 0.76 has been applied to the 2018 diffusion tube results. Data capture for all tube results was sufficient as to not warrant annualisation except for DT10, DT18 & DT32N.

Annualisation for DT10, DT18 & DT32N according to Box 7.9 TG (16)

Background Site	Date Capture %	NG	Distance to DT18	Distance to DT32N	Distance to DT10	2018 Annual Mean Am	Period mean DT18	Period mean DT32N	Period mean DT10	Ratio (Am / Pm) for DT18	Ratio (Am / Pm) for DT32N	Ratio (Am / Pm) for DT10
Wicken Fen	97	556316 269179	8	17	17	7.7	6.4	6.7	9.4	1.20	1.14	0.82
Market Harborough	98	483340 295886	44	46	46	8.0	6.5	7.2	9.8	1.23	1.11	0.81
Oxford St Ebbes	100	451168 205382	65	66	66	14.8	12.9	13.5	16.1	1.15	1.06	0.92
								Average of Ratios		1.19	1.11	0.85

Tube ID	Annual Mean Not Adjusted	(Ra) Annualisation Factor	Annualised Mean	National Bias Adjusted Mean 0.76
DT18	36.5	1.19	43.5	33.1
DT32N	27.7	1.11	30.8	23.4
DT10	39.9	0.85	33.9	25.8

National Bias Adjustment Factor

Analysed By	Method	Year	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	Bias Adjustment Factor (A) (Cm / Dm)
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Cambridge City Council	12	42	30	40.2%	G	0.71
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Canterbury City Council	11	38	28	35.8%	G	0.74
SOCOTEC Didcot	50% TEA in acetone	2018	Urban Background	Canterbury City Council	12	16	12	36.3%	G	0.73
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Hambleton District Council	12	21	18	20.8%	G	0.83
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Ipswich Borough Council	12	34	29	17.9%	G	0.85
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	City of York Council	12	41	27	54.2%	G	0.65

Analysed By	Method	Year	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	Bias Adjustment Factor (A) (Cm / Dm)
SOCOTEC Didcot	50% TEA in acetone	2018	Urban Background	City of York Council	11	22	15	52.0%	G	0.66
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	City of York Council	12	34	26	30.8%	G	0.76
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	City of York Council	11	30	23	32.9%	G	0.75
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Dumfries and Galloway Council	12	36	30	19.8%	G	0.83
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Knowsley MBC	12	47	38	26.5%	G	0.79
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Suffolk Coastal DC	11	44	33	32.4%	G	0.76

Analysed By	Method	Year	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	Bias Adjustment Factor (A) (Cm / Dm)
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Thanet District Council	10	26	21	25.4%	G	0.80
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Horsham District Council	11	33	23	42.4%	G	0.70
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Horsham District Council	12	33	29	17.2%	G	0.85
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Horsham District Council	12	30	26	16.1%	G	0.86
SOCOTEC Didcot	50% TEA in acetone	2018	Urban Background	Slough Borough Council	10	38	31	25.6%	G	0.80
SOCOTEC Didcot	50% TEA in acetone	2018	SU	Slough Borough Council	11	32	22	46.7%	G	0.68

Analysed By	Method	Year	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	Bias Adjustment Factor (A) (Cm / Dm)
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Slough Borough Council	11	39	32	22.5%	G	0.82
SOCOTEC Didcot	50% TEA in acetone	2018	Roadside	Vale of Glamorgan	12	39	25	57.8%	G	0.63
SOCOTEC Didcot	50% TEA in acetone	2018	KS	Marylebone Road Intercomparison	9	96	87	9.1%	G	0.92
							Overall Factor (24 Studies)		Use	0.76

Map(s) of Monitoring Locations and AQMAs

Automatic Monitoring Stations Location

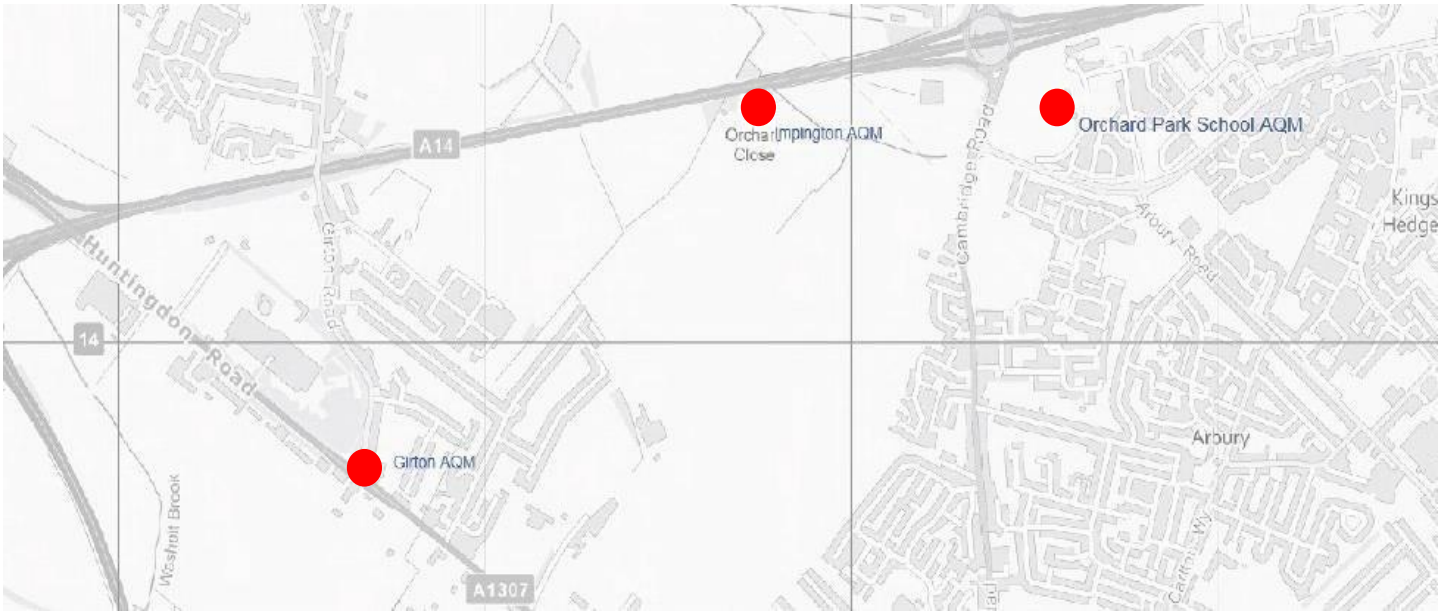


Figure 2 – Automatic Monitoring Stations Location

Diffusion Tubes Location

Orchard Park and Impington Tubes

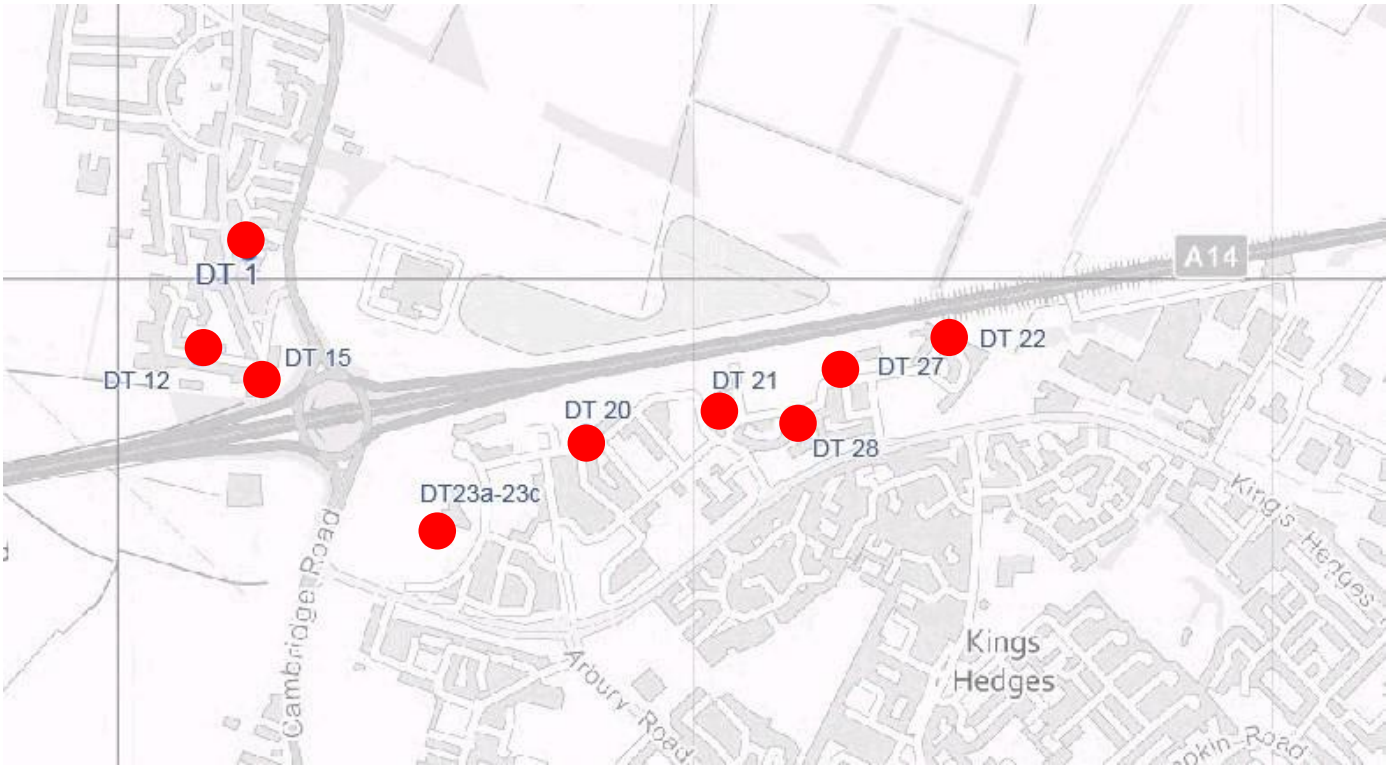


Figure 3 – Orchard Park and Impington Tubes

Histon Tubes

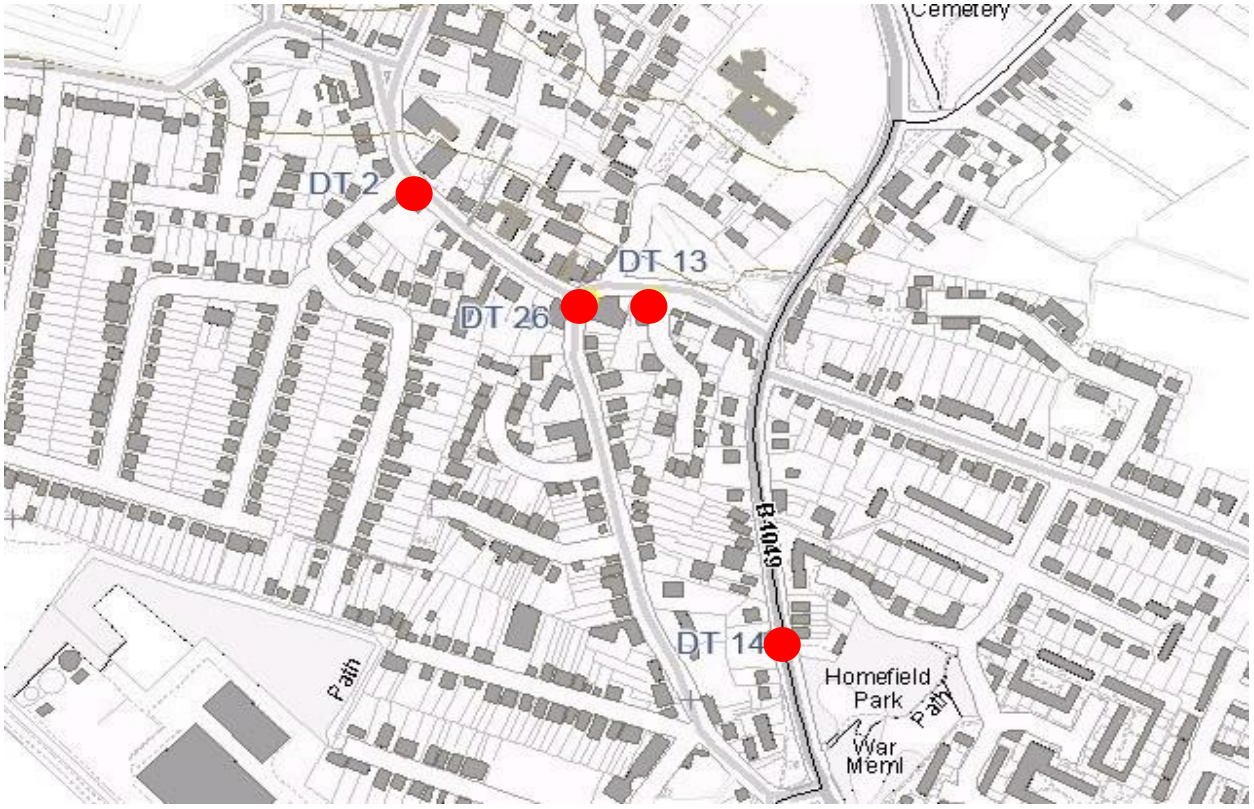


Figure 4 – Histon Tubes

Bar Hill and A14 Tubes

Figure 5 – Bar Hill and A14 Tubes

Waterbeach Tube

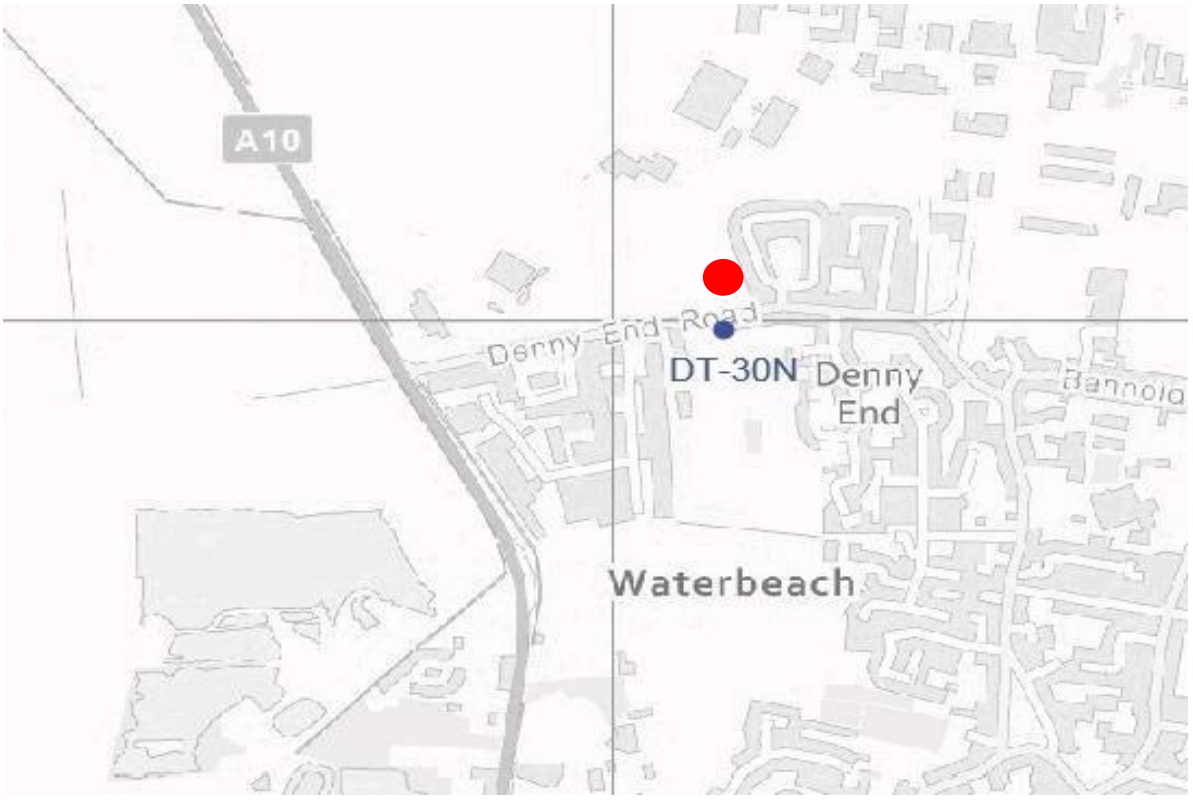


Figure 6 – Waterbeach Tube

Milton Tubes

Figure 7 – Milton Tubes

Tubes South of District

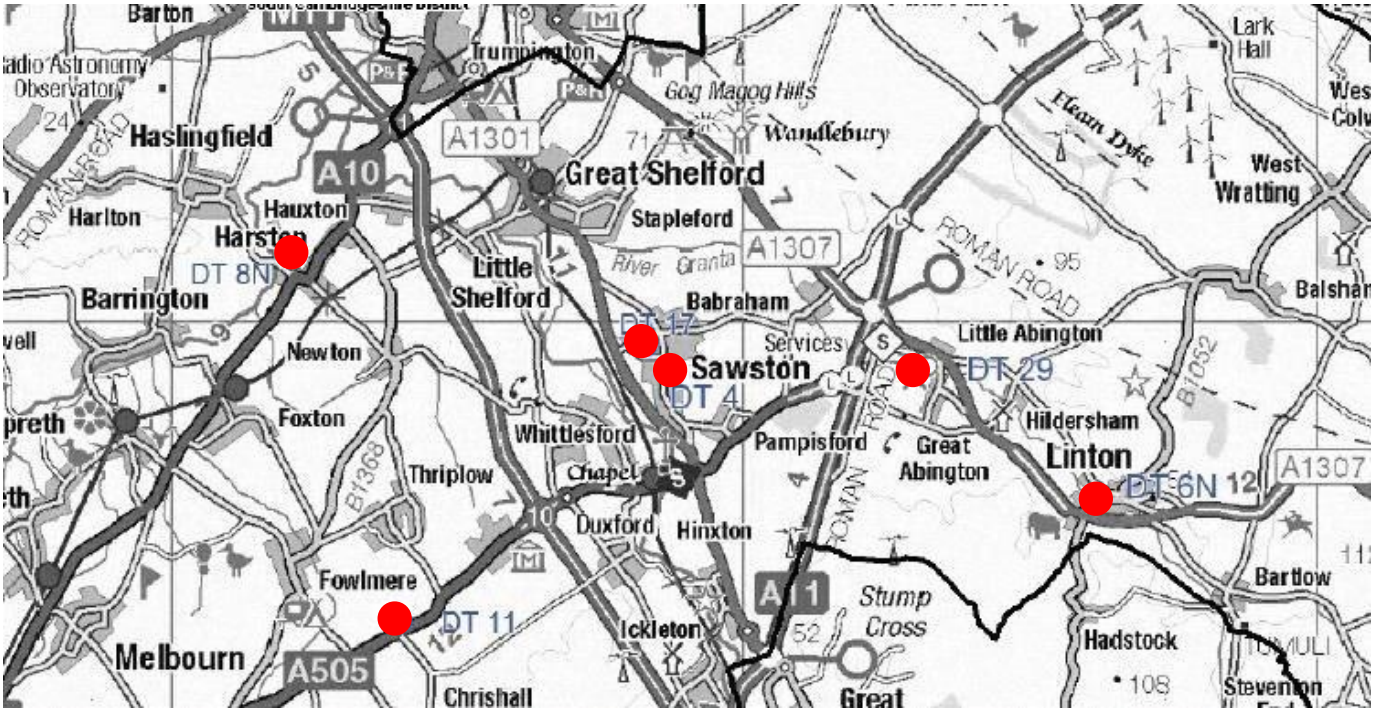


Figure 8 – Tubes South of District

Tadlow Tube

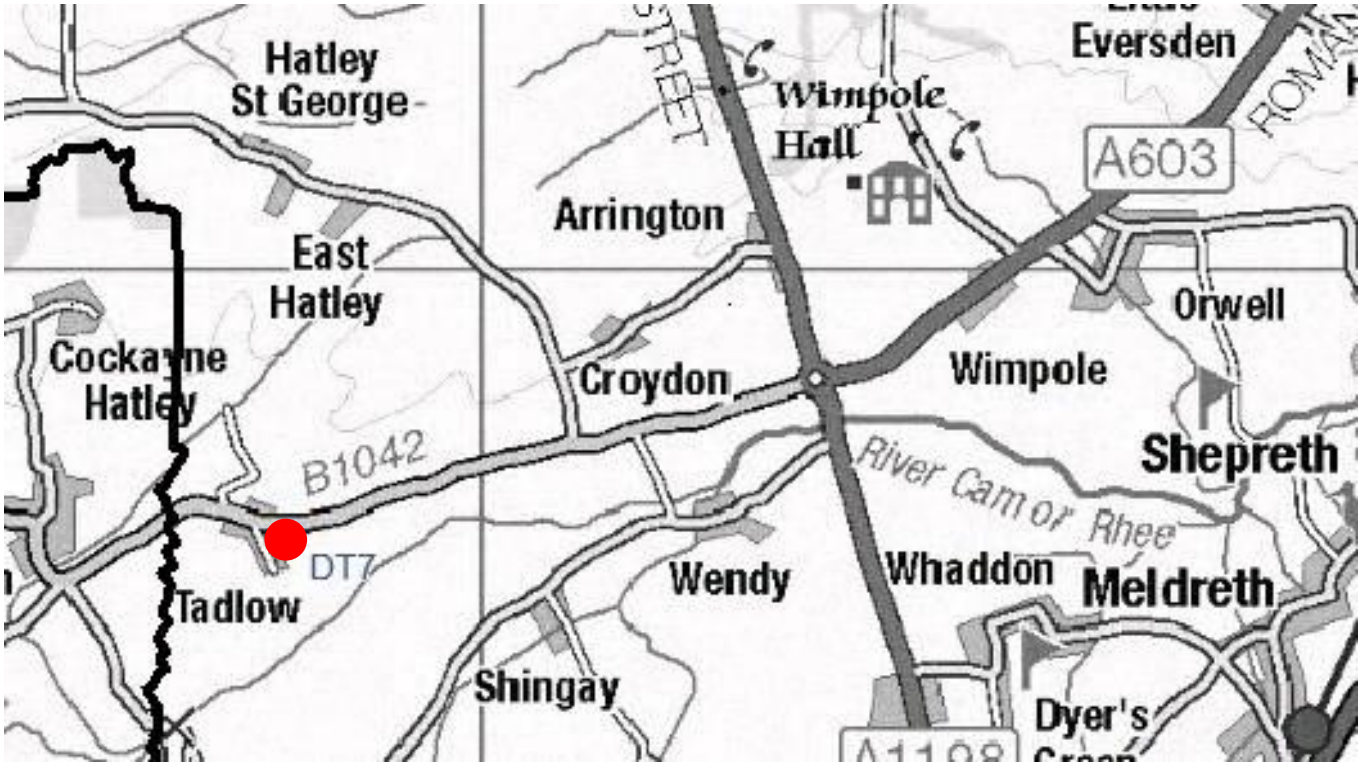


Figure 9 – Tadlow Tube

Summary of Air Quality Objectives in England

Air Quality Objectives in England

Pollutant	Air Quality Objective	
	Concentration	Measured as
Nitrogen Dioxide (NO2)	200 µg/m3 not to be exceeded more than 18 times a year	1 hour mean
	40 µg/m3	Annual mean
Particulate Matter (PM10)	50 µg/m3 not to be exceeded more than 35 times a year	24 hour mean
	40 µg/m3	Annual mean
Sulphur Dioxide (SO2)	350 µg/m3 not to be exceeded more than 24 times a year	1 hour mean
	125 µg/m3 not to be exceeded more than 3 times a year	24 hour mean
	266 µg/m3 not to be exceeded more than 35 times a year	15 minute mean

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
NO2	Nitrogen Dioxide
NOx	Nitrogen Oxides
PM10	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM2.5	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA / QC	Quality Assurance and Quality Control
SO2	Sulphur Dioxide

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