

2021 Air Quality Annual Status Report (ASR)

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

August, 2021

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Executive Summary: Air Quality in Our Area

The 2021 Annual Status Report is designed to provide the public with information relating to local air quality in Uttlesford, to fulfil Uttlesford District Council's statutory duty to review and assess air quality within its area, and to determine whether or not the air quality objectives are likely to be achieved.

In 2020, Uttlesford District Council measured **no** exceedances of the Air Quality Objectives.

Air Quality in Uttlesford

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, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas^{1,2}.

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

Uttlesford is considered to be rural in nature and has the principal town of Saffron Walden as its administrative centre. Uttlesford is dissected by the M11 motorway and A120 trunk road which support Stansted International Airport in the south of the district.

Traffic emissions are the most significant source of air pollution within the district. Within Saffron Walden, the historic layout of the town results in problems with traffic flow and congestion particularly at peak times.

Uttlesford District Council has one Air Quality Management Area (AQMA) within Saffron Walden town centre, declared for Nitrogen Dioxide (NO₂) annual mean exceedances. However, for the fourth year running, no exceedances have been measured. This gives the Council grounds to examine whether the AQMA can be revoked.

¹ Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

² Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Air quality appraisal: damage cost guidance, July 2020

⁴ Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

Conclusions and Priorities

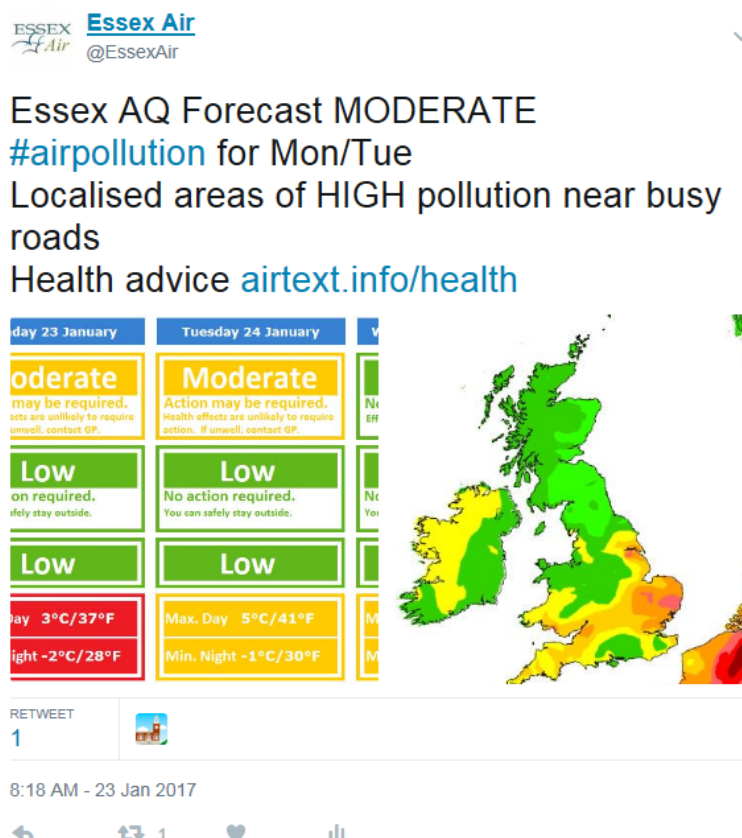
Uttlesford District Council have concluded that:

- No air quality exceedances have been identified in 2020.
- Measured air pollution in 2020 has reduced significantly from previous years due to Covid-19 related national lockdowns and regional tiered restrictions because of the reduced traffic movements
- There are no new developments that will have a significant impact on air quality.

Local Engagement and How to get Involved

Uttlesford District Council is a member of the Essex Air Quality consortium. The Essex Air [web site](#) provides a daily forecast of air pollution which is based off [UK-AIR](#) data feeds. Also, the [@EssexAir](#) twitter feed provides localised weekly air pollution forecasts.

Figure i.1 Essex Air Twitter Air Quality Notifications



Links to Defra recommended actions and health advice are provided when air pollution is likely to be moderate or higher. This will enable those with heart or lung conditions, or other breathing problems to make informed judgements about their levels of activity or exposure.

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1 Local Air Quality Management

This report provides an overview of air quality in Uttlesford during 2020. 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 Uttlesford District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E..

2 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 should prepare an Air Quality Action Plan (AQAP) within 12 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Uttlesford District Council can be found in Table 2.1. The table presents a description of the three AQMAs that are currently designated within Uttlesford.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
Saffron Walden AQMA	Declared 01/08/2007 Amended 12/09/2012	NO ₂ Annual Mean	Circle of radius 1400m radius centred on Elm Grove in Saffron Walden Town Centre.	No	42.9	No exceedance	Uttlesford Air Quality Action Plan 2017-2022 01/10/2017	https://www.uttlesford.gov.uk/CHttpHandler.ashx?id=7346&p=0

Appendix D: Map of Monitoring Locations and AQMA provides maps of AQMAs and also the air quality monitoring locations in relation to the AQMAs.

The air quality objectives pertinent to the current AQMA designations are as follows:

- NO₂ Annual Mean

This 2021 Annual Status Report identifies that pollutant concentrations are well below the Air Quality Objectives (at relevant exposure) for the fourth year running and that it is appropriate to undertake assessment of revoking the current AQMA.

Progress and Impact of Measures to address Air Quality in Uttlesford

Uttlesford District Council and Essex County Council have a number of ongoing measures to improve air quality in Uttlesford. These are detailed in Table 2.2 below.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	To revise planning policies which will ensure the impact on air quality in the AQMA is given adequate consideration and weight in the decision-making process.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2017	2023	Uttlesford District Council	Uttlesford District Council	NO				Low, but potential to mitigate against emission increases associated with future growth.	Policies contained in the Local Plan once adopted. Use of sec 106 funds to implement action plan	Policies have been included in the submitted Regulation 19 Local Plan. Cost: within existing resources.	Following the examination of the proposed Local Plan, it was withdrawn in April 2020. Work has started on a new local plan
2	To produce a planning Technical Guidance document for air quality, to ensure the impacts of new development on the AQMA, new receptors in the AQMA, and the level of mitigation are fully considered in all applications.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2017	2023	Uttlesford District Council	Uttlesford District Council	NO				Low, but potential to mitigate against emission increases associated with future growth.	Publicly available by December 2017	Technical Guidance document has been completed and included in the Regulation 19 Local Plan. Cost within existing resources	Pending approval of new Local Plan
3	To work with ECC to facilitate the provision of new cycle/pedestrian routes and cycle storage, and promote the routes available.	Transport Planning and Infrastructure	Cycle network	2017		Uttlesford District Council / Essex County Council	Uttlesford District Council / Essex County Council	NO				Low, dependant on reduction in number of vehicles on road network	Number of new routes provided, increase in no of storage facilities per annum and users of facilities year on year	UDC has held meetings with ECC to review existing provisions and work with ECC on an on-going basis to achieve outcomes. Recently govt funding has been released and UDC will be making bids to support the UDC cycle strategy	Outcomes dependent on priorities, funding & developer contributions, which the plan cannot timescale.
4	UDC to increase cycle storage on Council owned sites in Saffron Walden where	Transport Planning and Infrastructure	Cycle network	2017		Uttlesford District Council	Uttlesford District Council	NO				Low, dependant on reduction in number of vehicles on road network	Increase in no of storage facilities and users of facilities from baseline	To link in with the Travel plan. Engage with property services & apply for funding where appropriate	

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
	practical to do so.													where need has been identified. .	
5	To assist ECC in working with local schools and businesses in the review and upgrading of existing travel plans or to assist individual schools or businesses to develop and promote plans	Promoting Travel Alternatives	School Travel Plans	2017		Uttlesford District Council / Essex County Council	Uttlesford District Council / Essex County Council	NO				Low, dependant on reduction in number of vehicles on road network	Number of new or upgraded TPs. Increase in walking or cycling to school or workplace from baseline	Cost within existing resources	Reliance on joint working with ECC and other stakeholders to develop new travel plans.
6	To support the extension of phone signal coverage and superfast broadband service to all parts of the district.	Promoting Travel Alternatives	Encourage / Facilitate home-working	2017		Uttlesford District Council / Essex County Council	Uttlesford District Council / Essex County Council	NO				Low, dependant on reduction in number of vehicles on road network	Number of businesses and homes enabled to access superfast broadband by 2019. Increase in no of people regularly working from home	UDC investment of £500k towards inclusion in Superfast Essex broadband procurement to be implemented by end of 2019. This has been delayed until December 2022	
7	To work with ECC Highways to develop a scheme of measures aimed at improving junction capacity within the AQMA identified to be necessary as part of the Local Plan once adopted.	Traffic Management	UTC, Congestion management, traffic reduction	2019		Essex County Council	Essex County Council	NO				Medium, dependant on reduced congestion	Junction capacity improvements at the four key junctions identified in the action plan. Reduction in queue lengths from identified baseline.	UDC has held meetings with ECC to review existing provisions and work with ECC on an on-going basis to achieve outcomes, regular further meetings to be held. Some funding available from sec 106 agreements.	Reliant on ECC work programme following approval of the Local Plan and developer contributions once commenced. Timescale beyond control of UDC. Developer contributions have been diverted to pedestrian safety issues & traffic calming on Debden Road
8	To work with ECC to assess whether changes to junction configurations and signal controls, control of parking	Traffic Management	UTC, Congestion management, traffic reduction	2017		Essex County Council	Essex County Council	NO				Medium, dependant on reduced congestion	Improvements to junctions carried out, improved parking on main routes, restrictions to HGVs.	No progress. To engage with ECC and North Essex Parking Partnership (NEEP)	Reliant on ECC and North Essex Parking Partnership (NEEP) to be in agreement with any changes. No

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
	measures on main routes through the town and access to the centre by HGVs which will demonstrably reduce congestion can be identified and implemented ahead of adoption of the local plan												Reduction in queue lengths		realistic target date can be applied
9	To support targeted enforcement of parking restrictions where identified to be an issue, on main routes through the town	Traffic Management	Workplace Parking Levy, Parking Enforcement on highway	2017		Uttlesford District Council	Uttlesford District Council	NO				Low, dependant on reduced congestion	No of parking penalty notices issued on main routes	Planned work stream delayed. Cost within existing resources.	
10	To provide clear informative signage to Swan Meadow car park, new amenities, leisure centre, food stores, Audley End	Transport Planning and Infrastructure	Other	2017	2019	Uttlesford District Council	Uttlesford District Council	NO				Low, dependant on reduced congestion	No of new signs provided	Appropriate signage on approaches to facilities provided, to be kept under review as new development is delivered	Completed
11	To review UDC travel plan and review opportunities for a shared travel plan with partner organisations using UDC facilities	Promoting Travel Alternatives	Workplace Travel Planning	2017		Uttlesford District Council	Uttlesford District Council	NO				Low, dependant on reduced congestion	Revised UDC TP by end of 2017. Reduction in car travel to work as measured by survey & occupied car spaces, reduction in business mileage of 5% pa	Under review following changes arising from the Covid -19 pandemic. To link in with the Councils Climate Change Strategy. Cost within existing resources	
12	To pursue options to install renewable energy technologies at suitable sites within Saffron Walden, to review UDC fleet	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2017		Uttlesford District Council	Uttlesford District Council	NO				Medium	No kW renewable energy within SW, review of fuel usage and type, no of UDC LEVs	Meetings held with vehicle procurement to consider options for fleet procurement and conversion of existing fleet to low emission fuel, and cost benefit.	Awaiting resources

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
	procurement and implement changes where identified as practicable, and likely emission reductions justify the capital expenditure													Uttlesford Norsk partnership replaced 17 older vehicles with Euro 6 complaint fleet. This included 2x electric vehicles	
13	To encourage ECC to procure bus services with integrated timetables, high quality facilities, and a frequent and reliable service linked to the rail service at Audley End. Information on Public Transport services to be readily available in UDC buildings and via the website.	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2017		Uttlesford District Council / Essex County Council	Uttlesford District Council / Essex County Council	NO				Low	No of new or improved services available, information available in UDC buildings. Increase in bus usage of 5%	No progress	Awaiting resources
14	To identify opportunities to raise public awareness of air quality issues through education initiatives and publicity campaigns	Public Information	Via leaflets	2017		Uttlesford District Council	Uttlesford District Council	NO				Low, dependant on behavioural changes	No of campaigns, target one per annum.	Targeted campaign delivered to schools & the general public, coincided with National Clean Air Day in June 2018 & June 2019 Cost within existing resources. 2020 event delayed due to Covid -19 pandemic	Ongoing, however limited due to resource
15	To provide advice and raise awareness of car sharing and associated database software available to employers	Alternatives to private vehicle use	Car & lift sharing schemes	2017		Uttlesford District Council	Uttlesford District Council	NO				Low dependant on reduced congestion	No of new car sharing schemes set up, target one per annum. Reduction of 1-5% of private car commuter journeys	In house promotion linked to Clean Air Day 2018 & 2019. Project suspended due to Covid-19 pandemic. Cost within existing resources	Scheme uptake outside control of UDC. However, district wide promotion of schemes to take place on an annual basis as part of other awareness linked to measure 14.

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
16	To consider the provision of preferential charging for UDC controlled parking spaces for vehicles meeting low emission standards	Traffic Management	Emission based parking or permit charges	2017		Uttlesford District Council	Uttlesford District Council	NO				Low, dependant on raised uptake of LEVs	Review of charging policy	Project delayed due to resource issues. Feasibility study delayed until Spring 2021	
17	To engage with the Uttlesford licensed operators with the aim of introducing emission controls for licensed taxis operating within the AQMA.	Promoting Low Emission Transport	Taxi Licensing conditions	2017	2019	Uttlesford District Council	Uttlesford District Council	NO				Low	Review of licensing policy	Upgraded licensed vehicle emissions policy.	Completed
18	To encourage ECC to set emission standards for new and existing buses under contract operating within the AQMA	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	2017		Essex County Council	Essex County Council	NO				Low	Review of contractual arrangements	No progress	Awaiting resources
19	To work with the operators of fleet vehicles within the town to facilitate the introduction of LEV's	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2018		Uttlesford District Council	Uttlesford District Council	NO				Potentially medium, dependant on uptake of vehicles.	No of LEV fleet vehicles on town road network.	No progress	Reliance on engagement with fleet operators to achieve outcome.
20	Provide electric charging points on UDC owned parking spaces in the town where practical and economically feasible to do so, and encourage the provision of points at suitable privately owned sites	Promoting Low Emission Transport	Procurring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2018		Uttlesford District Council	Uttlesford District Council	NO				Potentially medium, dependant on uptake of vehicles.	No of points installed per annum, target 4	Ongoing. Charging points at the Common Car Park have been delivered. Currently there is a £100K bid, plus £40K match funding for additional car parks in place. 4 post at London Road are planned for August	
21	To work with ECC on introducing delivery time restrictions to High Street SW	Freight and Delivery Management	Quiet & out of hours delivery	2017		Essex County Council	Essex County Council	NO				Low	Restrictions in place, reductions in HGV parking	No progress	Awaiting resources

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
22	To carry out additional monitoring of NO2 within Saffron Walden to inform basis for decision making.	Public Information	Other	2017	2019	Uttlesford District Council	Uttlesford District Council	NO				Low, provides evidence base for actions	Provision of localised data for incorporation into air quality modelling	Permanent Automatic monitoring station at London Road scheduled for 2019. Extension of diffusion tube sites to include co-location.	Completed

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.

Uttlesford District Council monitors PM_{2.5} concentrations at four locations across the district using one BAM 1020 reference monitor, one Osiris particle monitor and two Aeroqual AQY sensors. The table below compares the measured concentrations with Defra background mapping.

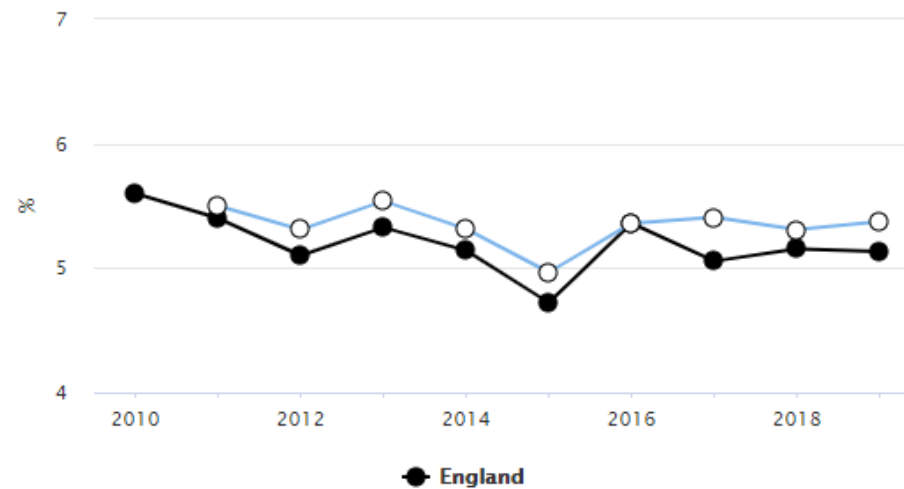
Table 2.3 – PM_{2.5} Monitoring Locations

Monitoring Location	Easting	Northing	Monitoring Method	Monitored Concentration (Annual Mean)	Defra 2020 Background Map (2018 Based Map)	Difference	Primary Local Source of PM _{2.5}
Thaxted Road, Saffron Walden	554357	238444	Nephelometer	Poor Data Quality No Results Reported	9.5µg/m ³	N/A	Road Traffic
London Road, Saffron Walden	553570	237908	Beta Attenuation	15.1µg/m ³	9.4µg/m ³	5.7µg/m ³	Road Traffic
Hill House near Stansted Airport	555917	223377	Optical Particle Counter	9.5µg/m ³	9.5µg/m ³	0µg/m ³	Agriculture Aviation
Thaxted	561224	230889	Optical Particle Counter	11.1µg/m ³	9.3µg/m ³	1.8µg/m ³	Road Traffic

The Osiris particle monitor and Aeroqual sensors are providing air quality data for information only. Only data from the BAM reference monitor is formally reported.

The Public Health Outcomes Framework indicator D01 – Fraction of mortality attributable to particulate (PM_{2.5}) air pollution which for 2019 gave a value of 5.4% which has improved from 5.5% in 2011. These values are broadly similar to other authorities within the region.

Figure 2.1 – Public Health Framework Indicator D01 Fraction of all-cause adult mortality attributable to anthropogenic particulate air pollution



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

- Use of Essex Air twitter to encourage the reporting of smoky vehicles through the DVSA reporting service. It is possible to report either heavy goods vehicles or public service vehicles (buses).
- Regular inspections of permitted industry where combustion and non-combustion processes could lead to anthropogenic emissions of PM_{2.5}

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

This section sets out the monitoring undertaken within 2020 by Uttlesford District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2016 and 2020 to allow monitoring trends to be identified and discussed.

No exceedances of the nitrogen dioxide air quality objectives have been identified and the long-term trend for monitored concentrations is downwards.

Quality assurance and quality control information for the automatic analysers, diffusion tubes bias adjustments and other adjustments applied (e.g. annualisation and/or distance correction) are presented in Appendix C. Maps showing the location of the monitoring sites are presented in Appendix D.

Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Uttlesford District Council undertook automatic (continuous) monitoring with reference analysers at two sites during 2020.

- Site UTT2 Thaxted Road, Saffron Walden measuring NO₂
- Site UTT3 London Road, Saffron Walden measuring NO₂

Table A.1 in Appendix A presents detail of these sites.

Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

In addition, one Osiris particle monitor and two Aeroqual AQY sensors were deployed. These are not reference sensors, so the monitoring results are not detailed in this section but are presented in Appendix G.

3.1.2 Non-Automatic Monitoring Sites

Uttlesford District Council undertook non-automatic (i.e. passive) monitoring of NO₂ at 31 sites during 2020. Table A.2 in Appendix A presents the details of the non-automatic sites.

3.1.3 Nitrogen Dioxide (NO₂)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B. includes distance corrected values, only where relevant.

Table A.5 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year.

In 2020, Uttlesford District Council measured no exceedances of the Air Quality Objectives and as such it is very unlikely that an exceedance of the 1-hour mean objective has occurred at any of the monitoring sites.

3.1.1 Particulate Matter (PM₁₀)

Table A.6 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. Measured annual mean PM₁₀ concentrations were higher in 2020 than previous years.

Table A.7 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past five years with the air quality objective of 50µg/m³, not to be exceeded more than 35 times per year. The number of daily mean concentrations in excess of 50µg/m³ was less than 2019.

3.1.2 Particulate Matter (PM_{2.5})

PM_{2.5} is the pollutant which has the biggest impact on public health and on which the Public Health Outcomes Framework (PHOF) indicator is based. Although not covered by the LAQM regulations, Uttlesford District Council undertakes monitoring of PM_{2.5}.

Table A.8 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past five years. Measured annual mean PM_{2.5} concentrations were higher in 2020 than in 2019.

Appendix A: Monitoring Results

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
UTT2	Junction Thaxted Rd & Radwinter Rd, Saffron Walden	Roadside	554357	238444	NO _x , NO, NO ₂	NO	Chemiluminescent	0	2	1
UTT3	London Road, Saffron Walden	Roadside	553570	237908	NO _x , NO, NO ₂ ; PM ₁₀ ; PM _{2.5}	NO	Chemiluminescent, BAM, BAM (with Smart Heater)	6	3	2.8

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
UT001	High Street, Saffron Walden	Urban Centre	553709	238417	NO ₂	Yes	15.0	1.5	No	2.0
UT003	Gibson Gardens, Saffron Walden	Urban Background	553554	238218	NO ₂	Yes	5.1	1.5	No	2.0
UT004	YHA, Saffron Walden	Kerbside	553598	238595	NO ₂	Yes	0.8	0.4	No	2.0
UT005	Thaxted Road, Saffron Walden	Kerbside	554336	238454	NO ₂	Yes	2.4	0.5	No	2.0
UT009	Burton End	Roadside	552403	223965	NO ₂	No	17.0	27.0	No	2.0
UT010	Newport M11	Kerbside	551246	233649	NO ₂	No	40.0	0.1	No	2.0
UT011	33 High Street, Saffron Walden	Urban Centre	553697	238452	NO ₂	Yes	0.0	2.7	No	2.0
UT012	Town Hall, Saffron Walden	Urban Background	553879	238510	NO ₂	Yes	20.0	0.1	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
UT015	57 High Street, Saffron Walden	Roadside	553739	238317	NO ₂	Yes	0.0	4.0	No	2.0
UT016	Radwinter Road, Saffron Walden	Roadside	554413	238474	NO ₂	Yes	8.0	1.6	No	2.0
UT017	Stortford Rd, Lt Canfield	Roadside	560023	221444	NO ₂	No	14.0	2.5	No	2.0
UT018	17 Cambridge Road, Stansted	Roadside	551035	225199	NO ₂	No	3.0	1.5	No	2.0
UT019	Silver Street, Stansted	Roadside	550950	225039	NO ₂	No	3.5	2.0	No	2.0
UT020	Grove Hill, Stansted	Roadside	551535	225065	NO ₂	No	0.0	3.3	No	2.0
UT021	41 East Street, Saffron Walden	Roadside	554212	238436	NO ₂	Yes	0.0	2.0	No	2.0
UT024	Takeley Hill, Hatfield Forest	Rural	554671	221010	NO ₂	No	N/A	118.0	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
UT028	London Rd, Saffron Walden	Roadside	553755	238092	NO ₂	Yes	0.8	2.0	No	2.0
UT029	Debden Road, Saffron Walden	Roadside	553770	238076	NO ₂	Yes	0.5	0.5	No	2.0
UT030	Friends School, Saffron Walden	Kerbside	553875	237764	NO ₂	Yes	10.0	0.5	No	2.0
UT031	Mount Pleasant Road, Saffron Walden	Roadside	554178	237767	NO ₂	Yes	2.0	1.5	No	2.0
UT032	Borough Lane, Saffron Walden	Roadside	553625	237856	NO ₂	Yes	0.0	7.0	No	2.0
UT033	Chapel Hill, Stansted	Roadside	551377	224913	NO ₂	No	0.0	3.0	No	2.0
UT034	Four Ashes, Takeley	Roadside	556101	221243	NO ₂	No	8.0	1.5	No	2.0
UT036	Church Street,	Urban Centre	553718	238530	NO ₂	Yes	0.0	1.0	No	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
	Saffron Walden									
UT037	Castle Street, Saffron Walden	Kerbside	553923	238770	NO ₂	Yes	1.0	1.0	No	2.0
UT039	Newport High Street	Roadside	552156	234034	NO ₂	No	0.0	1.2	No	2.0
UT040	Wavel Cottage, Newport	Roadside	552113	234505	NO ₂	No	0.0	6.0	No	2.0
UT041	Rose Cottage, Newport	Roadside	552091	233630	NO ₂	No	0.0	3.0	No	2.0
UT042	Debden Road, Newport	Roadside	552152	233878	NO ₂	No	0.5	0.5	No	2.0
UT043	Gaces Acre, Newport	Roadside	552135	234344	NO ₂	No	1.0	2.0	No	2.0
UT044	Thaxted Road Co-located 1	Roadside	554357	238443	NO ₂	Yes	0.0	2.0	Yes	2.0
UT045	Thaxted Road Co-located 2	Roadside	554357	238443	NO ₂	Yes	0.0	2.0	Yes	2.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
UT046	Thaxted Road Co-located 3	Roadside	554357	238443	NO ₂	Yes	0.0	2.0	Yes	2.0

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.3 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
UTT2	554357	238444	Roadside	90.4	90.4	N/A	N/A	35.31	32.70	24.97
UTT3	553570	237908	Roadside	77.4	77.4	23.95	18.34	21.17	19.57	11.53

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16

Reported concentrations are those at the location of the monitoring site (annualised, as required), i.e. prior to any fall-off with distance correction

Notes:

The annual mean concentrations are presented as µg/m³.

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

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See [Appendix C](#) for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

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

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

Figure A.1 – Trends in Automatic Monitoring Annual Mean NO₂ Concentrations

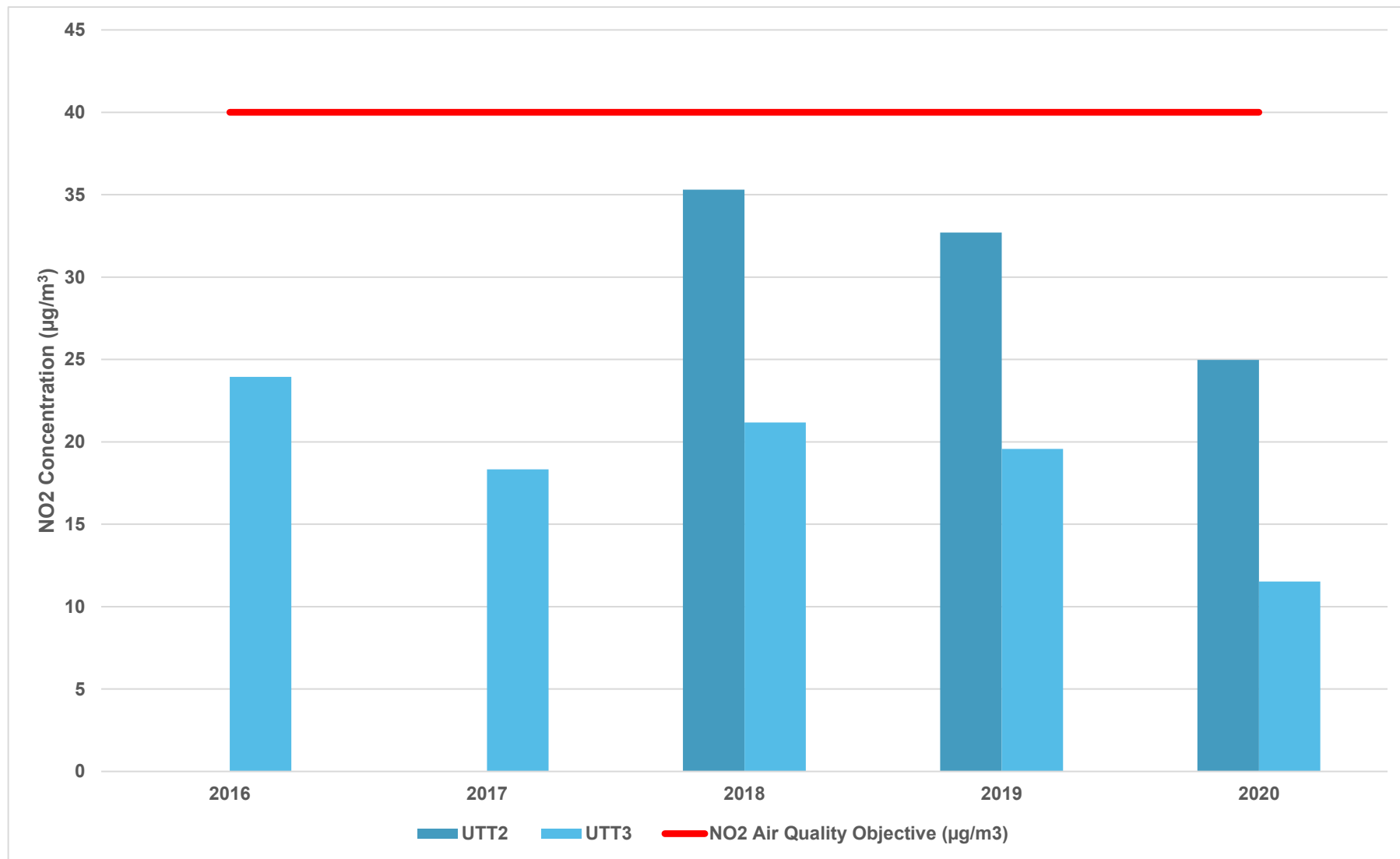


Table A.4 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
UT001	553709	238417	Urban Centre	57.7	57.7	40.0	34.0	29.8	30.0	23.28
UT003	553554	238218	Urban Background	67.3	67.3	16.2	13.4	12.0	11.1	8.90
UT004	553598	238595	Kerbside	57.7	57.7	46.9	38.0	35.5	35.1	26.15
UT005	554336	238454	Kerbside	67.3	67.3	47.5	38.0	36.4	33.9	25.37
UT009	552403	223965	Roadside	67.3	67.3	43.0	36.8	33.6	30.1	22.88
UT010	551246	233649	Kerbside	67.3	67.3	31.0	25.0	22.2	21.5	15.86
UT011	553697	238452	Urban Centre	57.7	57.7	38.6	31.0	29.0	26.3	19.43
UT012	553879	238510	Urban Background	67.3	67.3	20.5	16.2	15.4	15.5	10.73
UT015	553739	238317	Roadside	67.3	67.3	N/A	N/A	25.8	24.9	20.19
UT016	554413	238474	Roadside	67.3	67.3	N/A	N/A	32.1	30.7	22.50
UT017	560023	221444	Roadside	67.3	67.3	N/A	N/A	14.9	14.6	9.86
UT018	551035	225199	Roadside	67.3	67.3	N/A	N/A	26.7	24.4	19.45
UT019	550950	225039	Roadside	67.3	67.3	N/A	N/A	35.0	31.9	22.20
UT020	551535	225065	Roadside	67.3	67.3	N/A	N/A	35.7	30.7	24.68
UT021	554212	238436	Roadside	67.3	67.3	N/A	N/A	27.0	24.0	17.16
UT024	554671	221010	Rural	36.5	36.5	17.0	15.5	13.1	11.4	8.97
UT028	553755	238092	Roadside	67.3	67.3	44.8	37.4	33.4	31.2	24.19
UT029	553770	238076	Roadside	67.3	67.3	26.5	21.4	20.5	20.1	15.46
UT030	553875	237764	Kerbside	67.3	67.3	35.3	26.1	27.2	25.0	19.06
UT031	554178	237767	Roadside	67.3	67.3	26.2	21.4	19.8	20.7	14.84
UT032	553625	237856	Roadside	67.3	67.3	19.7	17.4	15.2	15.0	11.18
UT033	551377	224913	Roadside	67.3	67.3	36.2	27.0	26.9	23.8	18.19

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
UT034	556101	221243	Roadside	67.3	67.3	35.1	29.8	26.2	24.6	17.49
UT036	553718	238530	Urban Centre	67.3	67.3	27.1	20.9	19.2	18.4	13.93
UT037	553923	238770	Kerbside	67.3	67.3	29.1	24.0	22.0	22.4	16.33
UT039	552156	234034	Roadside	67.3	67.3	N/A	31.3	30.1	27.1	20.12
UT040	552113	234505	Roadside	67.3	67.3	N/A	N/A	19.8	20.5	15.12
UT041	552091	233630	Roadside	67.3	67.3	N/A	N/A	18.7	19.2	15.10
UT042	552152	233878	Roadside	67.3	67.3	N/A	N/A	N/A	24.1	18.23
UT043	552135	234344	Roadside	67.3	67.3	N/A	N/A	N/A	22.9	15.94
UT044, UT045, UT046	554357	238443	Roadside	67.3	67.3	N/A	N/A	N/A	37.0	30.80

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16

☒ Diffusion tube data has been bias adjusted

☒ Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction

Notes:

The annual mean concentrations are presented as $\mu\text{g}/\text{m}^3$.

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

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

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

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

Figure A.2 – Trends in Diffusion Tube Annual Mean NO₂ Concentrations (AQMA)

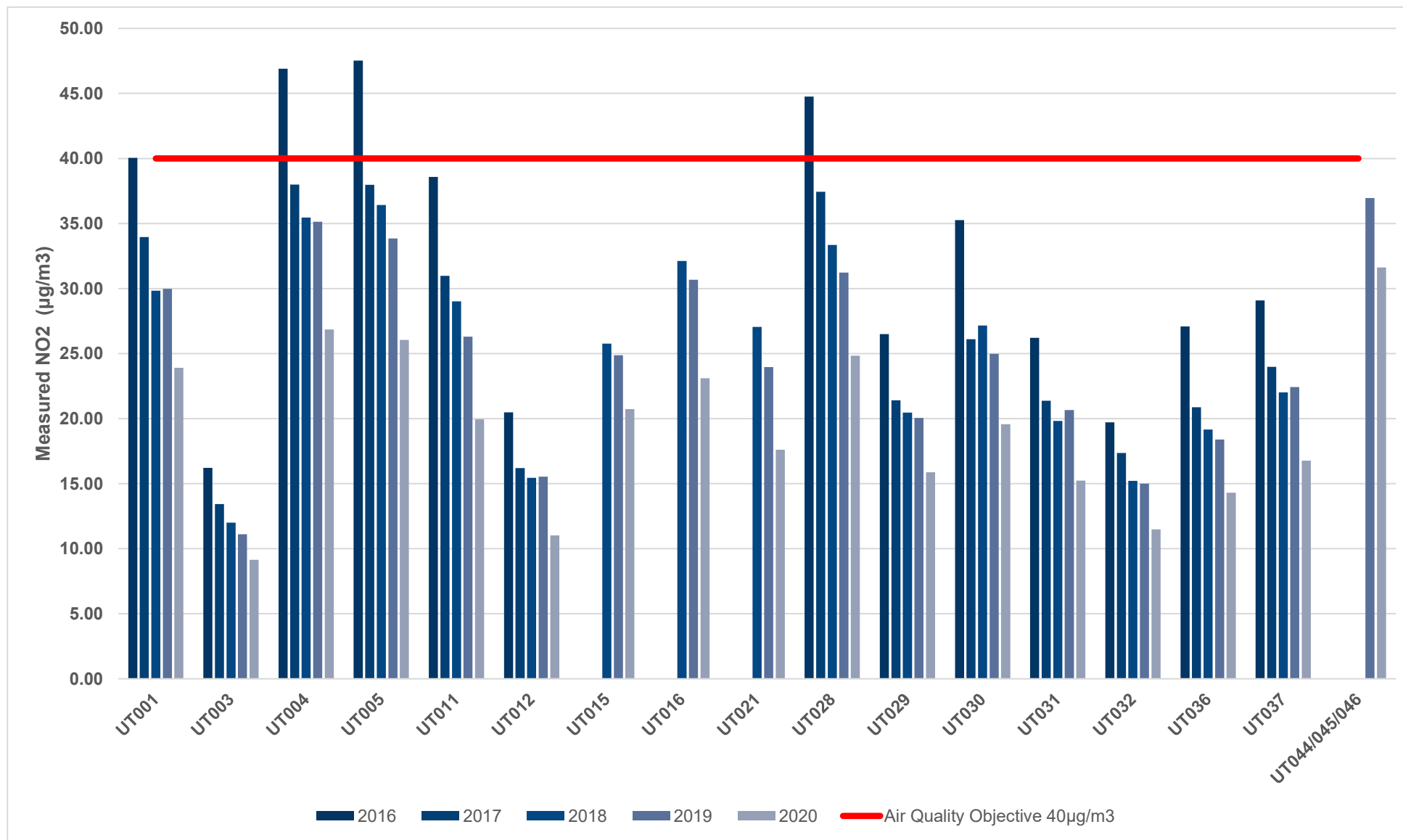


Figure A.3 – Trends in Diffusion Tube Annual Mean NO₂ Concentrations (Non AQMA)

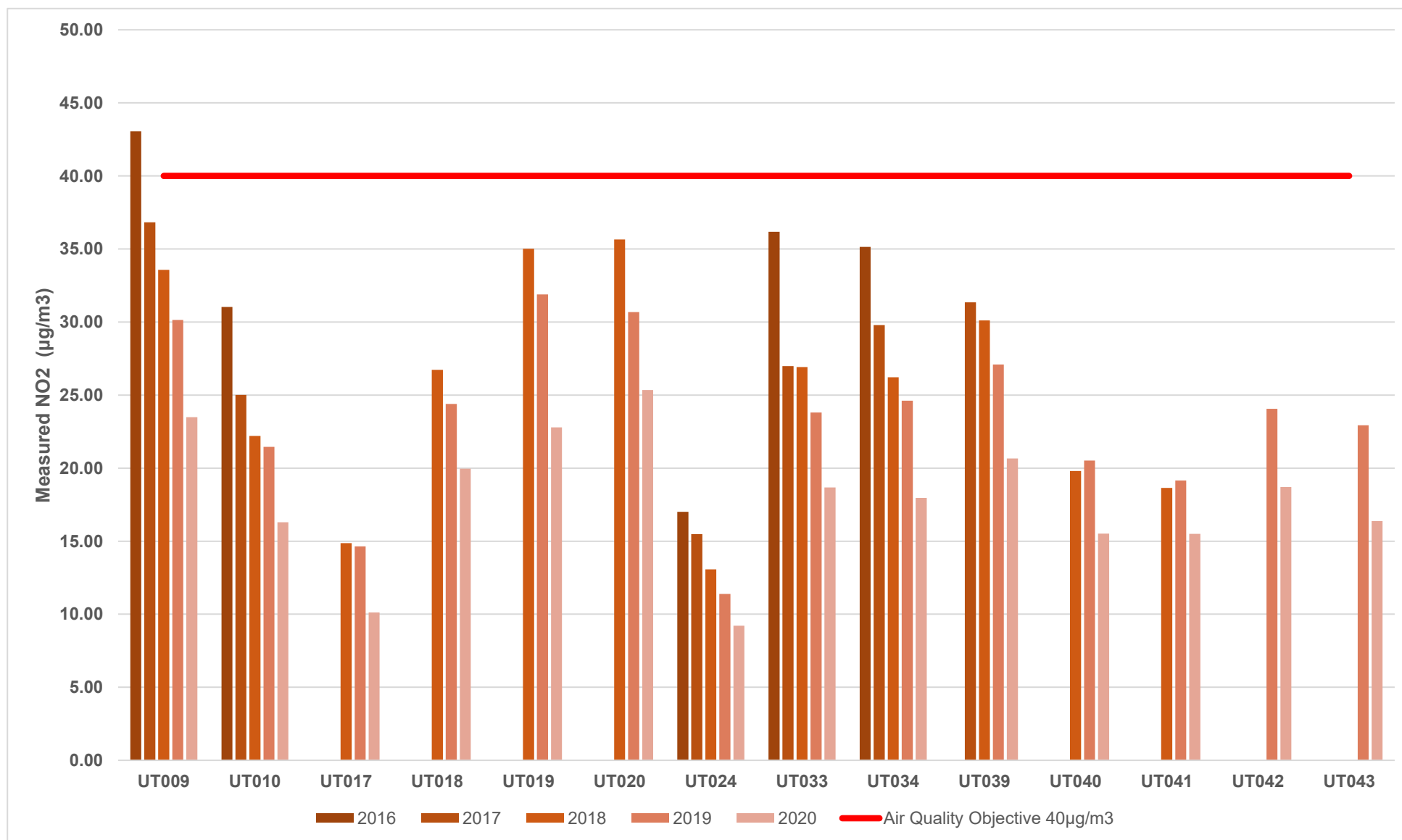


Table A.5 – 1-Hour Mean NO₂ Monitoring Results: Number of 1-Hour Means > 200µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
UTT2	554357	238444	Roadside	100	50	N/A	N/A	0 (139.31)	8	0
UTT3	553570	237908	Roadside	65	65	0 (133.57)	1	0 (102.71)	0 (89.07)	0

Notes:

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m³ have been recorded.

Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

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

(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%).

Table A.6 – Annual Mean PM₁₀ Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
UTT3	553570	237908	Roadside	77.3	77.3	24.5	24.18	25.52	24.67	27.12 (41.73)

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16

Notes:

The annual mean concentrations are presented as µg/m³.

Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

Figure A.4 – Trends in Annual Mean PM₁₀ Concentrations

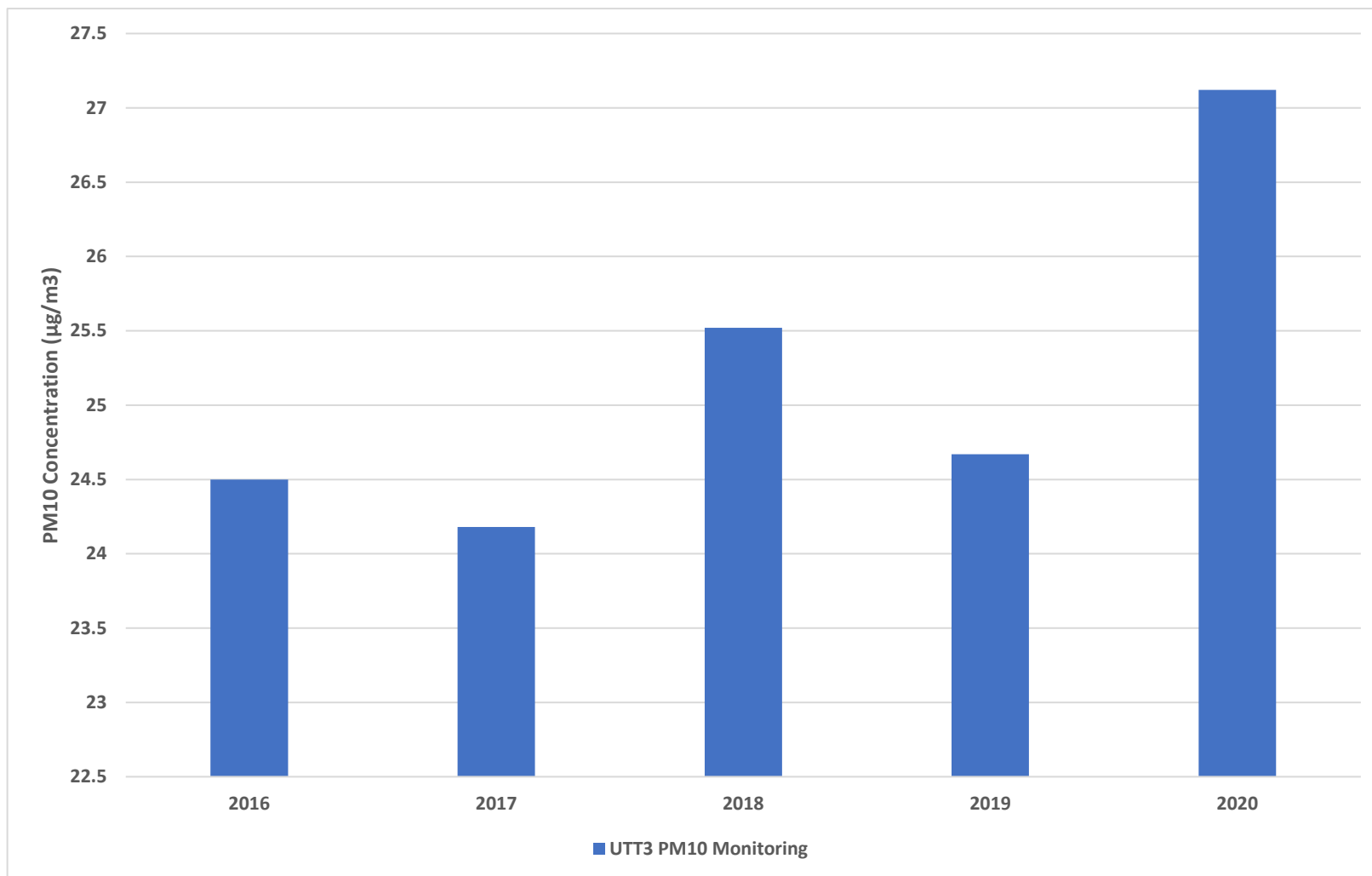


Table A.7 – 24-Hour Mean PM₁₀ Monitoring Results: Number of PM₁₀ 24-Hour Means > 50µg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
UTT3	553570	237908	Roadside	77.3	77.3	6 (43.47)	19	8 (38.63)	16	8 (41.7)

Notes:

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m³ have been recorded.

Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

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

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

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

Figure A.5 – Trends in Number of 24-Hour Mean PM₁₀ Results > 50µg/m³

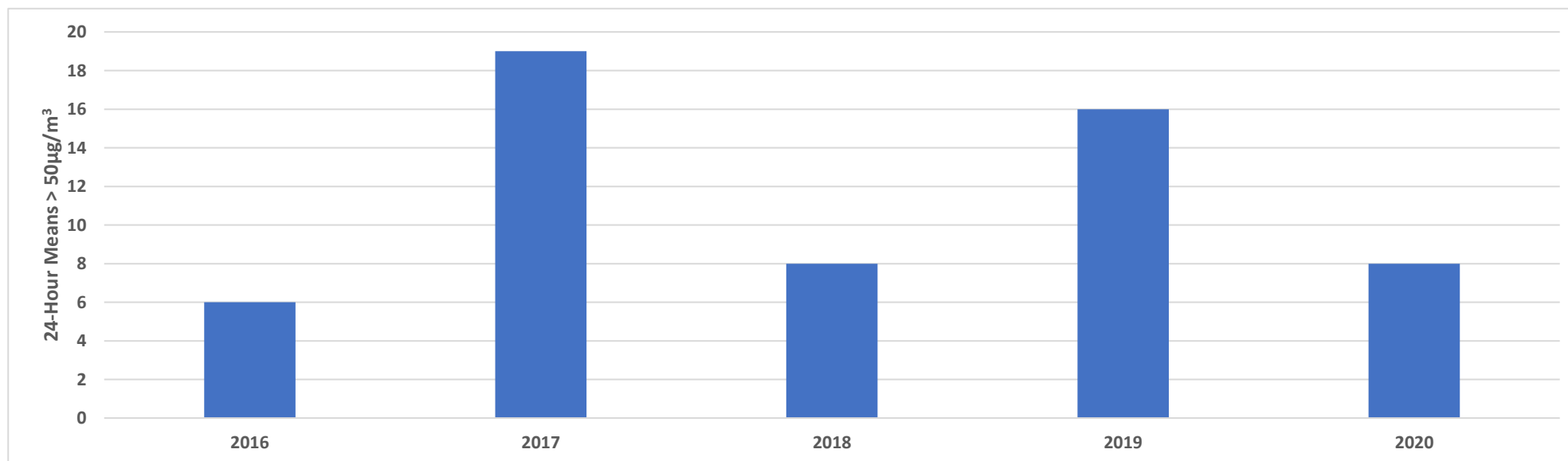


Table A.8 – Annual Mean PM_{2.5} Monitoring Results (µg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
UTT3	553570	237908	Roadside	92.0	92.0	N/A	N/A	N/A	13.75	15.11

Notes:

The annual mean concentrations are presented as µg/m³.

All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See [Appendix C](#) for details.

(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%).

Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO₂ 2020 Diffusion Tube Results (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO ₂ Mean Concentrations (µg/m ³)												Annual Mean (µg/m ³)	
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.77) and Annualised
			UT001	553709	238417	49.8	Erroneous Data Removed			24.0	24.2	28.8	30.9	33.7		
UT003	553554	238218	22.0	Erroneous Data Removed			8.8	5.4	7.3	8.8	12.1	19.5	17.4	12.7	8.90	
UT004	553598	238595	54.1	Erroneous Data Removed			29.9	26.3	Missing	36.8	39.4	41.8	39.2	38.2	26.15	
UT005	554336	238454	49.6	Erroneous Data Removed			27.8	31.4	27.5	37.9	38.2	39.4	36.9	36.1	25.37	
UT009	552403	223965	50.0	Erroneous Data Removed			21.2	28.0	29.3	37.4	31.6	36.4	26.4	32.5	22.88	
UT010	551246	233649	36.2	Erroneous Data Removed			16.5	16.8	16.8	19.5	23.2	28.0	23.5	22.6	15.86	
UT011	553697	238452	42.5	Erroneous Data Removed			19.6	21.8	Missing	29.0	24.0	29.5	32.3	28.4	19.43	
UT012	553879	238510	25.3	Erroneous Data Removed			10.0	7.6	10.0	12.5	14.1	22.0	20.6	15.3	10.73	
UT015	553739	238317	41.6	Erroneous Data Removed			19.5	23.2	25.8	28.0	30.4	29.4	31.8	28.7	20.19	
UT016	554413	238474	47.0	Erroneous Data Removed			26.2	20.5	27.6	30.0	35.9	38.5	30.3	32.0	22.50	
UT017	560023	221444	24.7	Erroneous Data Removed			9.9	9.2	0.6	14.3	13.3	22.5	17.7	14.0	9.86	
UT018	551035	225199	39.8	Erroneous Data Removed			18.3	16.7	23.3	24.3	28.7	36.2	34.0	27.7	19.45	
UT019	550950	225039	48.9	Erroneous Data Removed			25.7	28.6	30.3	18.9	33.7	36.1	30.4	31.6	22.20	
UT020	551535	225065	43.0	Erroneous Data Removed			36.5	25.8	38.6	36.2	34.6	31.8	34.3	35.1	24.68	
UT021	554212	238436	36.8	Erroneous Data Removed			17.8	14.3	19.3	23.3	23.3	30.1	30.3	24.4	17.16	
UT024	554671	221010	Missing	Erroneous Data Removed			Missing	Missing	8.1	Missing	11.4	18.7	15.8	13.5	8.97	
UT028	553755	238092	51.4	Erroneous Data Removed			25.3	26.4	31.0	35.4	28.4	40.2	37.1	34.4	24.19	
UT029	553770	238076	31.6	Erroneous Data Removed			16.2	11.6	18.7	18.9	21.1	30.3	27.5	22.0	15.46	
UT030	553875	237764	36.7	Erroneous Data Removed			20.7	16.3	25.8	27.7	25.4	33.1	31.2	27.1	19.06	
UT031	554178	237767	34.0	Erroneous Data Removed			15.9	11.9	16.3	19.5	18.0	28.7	24.5	21.1	14.84	
UT032	553625	237856	27.3	Erroneous Data Removed			8.8	9.0	10.6	13.3	15.2	23.7	19.3	15.9	11.18	
UT033	551377	224913	35.2	Erroneous Data Removed			20.8	15.0	25.0	28.0	25.5	29.3	28.2	25.9	18.19	
UT034	556101	221243	38.1	Erroneous Data Removed			17.8	15.7	20.0	23.7	23.7	32.1	27.9	24.9	17.49	
UT036	553718	238530	31.4	Erroneous Data Removed			11.5	12.3	16.4	17.6	19.6	23.6	26.1	19.8	13.93	
UT037	553923	238770	38.3	Erroneous Data Removed			15.5	11.0	18.5	18.0	22.4	30.1	32.0	23.2	16.33	

UT039	552156	234034	42.9	Erroneous Data Removed	20.0	18.1	25.8	30.7	29.2	31.2	31.0	28.6	20.12
UT040	552113	234505	31.7	Erroneous Data Removed	14.3	16.9	16.8	21.3	21.3	26.3	23.4	21.5	15.12
UT041	552091	233630	35.1	Erroneous Data Removed	14.0	12.2	15.9	18.2	21.7	30.3	24.4	21.5	15.10
UT042	552152	233878	40.8	Erroneous Data Removed	17.6	15.3	19.9	20.9	26.4	34.3	32.2	25.9	18.23
UT043	552135	234344	32.6	Erroneous Data Removed	14.4	11.0	18.7	21.4	24.2	30.4	28.7	22.7	15.94
UT044	554357	238443	51.9	Erroneous Data Removed	36.6	30.8	42.2	40.0	40.9	46.6	41.5	43.8	30.80
UT045	554357	238443	52.1	Erroneous Data Removed	35.6	33.1	40.0	98.8	41.0	44.6	42.5		
UT046	554357	238443	53.1	Erroneous Data Removed	36.5	33.2	42.8	40.0	38.8	44.0	44.8		

- All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16
- National bias adjustment factor used
- Uttlesford District Council confirms that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System

Notes:

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Uttlesford During 2020

Uttlesford District Council has not identified any new sources relating to air quality within the reporting year of 2020.

Additional Air Quality Works Undertaken by Uttlesford District Council during 2020

Uttlesford District Council has not completed any additional air quality works within the reporting year of 2020.

QA/QC of Diffusion Tube Monitoring

Diffusion Tubes QA/QC

Uttlesford District Council undertook monitoring at 31 nitrogen dioxide diffusion tubes sites in 2020.

The diffusion tubes were supplied and analysed by Socotec with a preparation method of 50% triethanolamine (TEA) in Acetone.

The AIR NO₂ proficiency testing scheme found that the laboratory achieved the following percentage of results determined as satisfactory for 2020:

Table C.1 – AIR PT Results 2020

AIR PT Round	AIR PT AR036	AIR PT AR037	AIR PT AR039	AIR PT AR040
Round conducted in the period	January – February 2020	April – May 2020	July – August 2020	September – October 2020
SOCOTEC	100%	No results reported	No results reported	100%

Annualisation Summary

Table C.2 – Summary of Annualisation

Diffusion Tube ID	Annualisation Factor Rochester Stoke	Annualisation Factor St Osyth	Annualisation Factor Southend-on-Sea	Average Annualisation Factor	Raw Data Simple Annual Mean ($\mu\text{g}/\text{m}^3$)	Annualised Data Simple Annual Mean ($\mu\text{g}/\text{m}^3$)
UT001	0.9622	0.9315	0.9810	0.9582	32.4	31.0
UT003	0.9386	0.9199	0.9538	0.9375	12.7	11.9
UT004	0.9127	0.9005	0.9243	0.9125	38.2	34.9
UT005	0.9386	0.9199	0.9538	0.9375	36.1	33.8
UT009	0.9386	0.9199	0.9538	0.9375	32.5	30.5
UT010	0.9386	0.9199	0.9538	0.9375	22.6	21.2
UT011	0.9127	0.9005	0.9243	0.9125	28.4	25.9
UT012	0.9386	0.9199	0.9538	0.9375	15.3	14.3
UT015	0.9386	0.9199	0.9538	0.9375	28.7	26.9
UT016	0.9386	0.9199	0.9538	0.9375	32.0	30.0
UT017	0.9386	0.9199	0.9538	0.9375	14.0	13.1
UT018	0.9386	0.9199	0.9538	0.9375	27.7	25.9
UT019	0.9386	0.9199	0.9538	0.9375	31.6	29.6
UT020	0.9386	0.9199	0.9538	0.9375	35.1	32.9
UT021	0.9386	0.9199	0.9538	0.9375	24.4	22.9
UT024	0.8785	0.8747	0.9053	0.8862	13.5	12.0
UT028	0.9386	0.9199	0.9538	0.9375	34.4	32.2
UT029	0.9386	0.9199	0.9538	0.9375	22.0	20.6
UT030	0.9386	0.9199	0.9538	0.9375	27.1	25.4
UT031	0.9386	0.9199	0.9538	0.9375	21.1	19.8
UT032	0.9386	0.9199	0.9538	0.9375	15.9	14.9
UT033	0.9386	0.9199	0.9538	0.9375	25.9	24.3
UT034	0.9386	0.9199	0.9538	0.9375	24.9	23.3
UT036	0.9386	0.9199	0.9538	0.9375	19.8	18.6
UT037	0.9386	0.9199	0.9538	0.9375	23.2	21.8
UT039	0.9386	0.9199	0.9538	0.9375	28.6	26.8
UT040	0.9386	0.9199	0.9538	0.9375	21.5	20.2
UT041	0.9386	0.9199	0.9538	0.9375	21.5	20.1
UT042	0.9386	0.9199	0.9538	0.9375	25.9	24.3
UT043	0.9386	0.9199	0.9538	0.9375	22.7	21.3
UT044	0.9386	0.9199	0.9538	0.9375	-	-
UT045	0.9386	0.9199	0.9538	0.9375	-	-
UT046	0.9386	0.9199	0.9538	0.9375	43.8	41.1

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within this 2021 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG16 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Historically the national bias adjustment factor has been used. In 2020 a local bias adjustment factor of 0.71 has been calculated from the Thaxted Road co-located monitoring site.

The national bias adjustment factor of 0.77 has been applied to the 2020 monitoring data which would be the most conservative approach. A summary of bias adjustment factors used by Uttlesford District Council over the past five years is presented in Table C.2. The same laboratory and preparation of diffusion tubes have been used over this time.

Table C.3 – Bias Adjustment Factor

Year	Local or National	Diffusion Tube	Version of National Spreadsheet	Adjustment Factor
2020	National	Socotec 50% TEA in Acetone	03/21	0.77
2019	National	Socotec 50% TEA in Acetone	03/20	0.75
2018	National	Socotec 50% TEA in Acetone	03/19	0.76
2017	National	ESG Didcot 50% TEA in Acetone	03/18	0.77
2016	National	ESG Didcot 50% TEA in Acetone	03/17v2	0.77

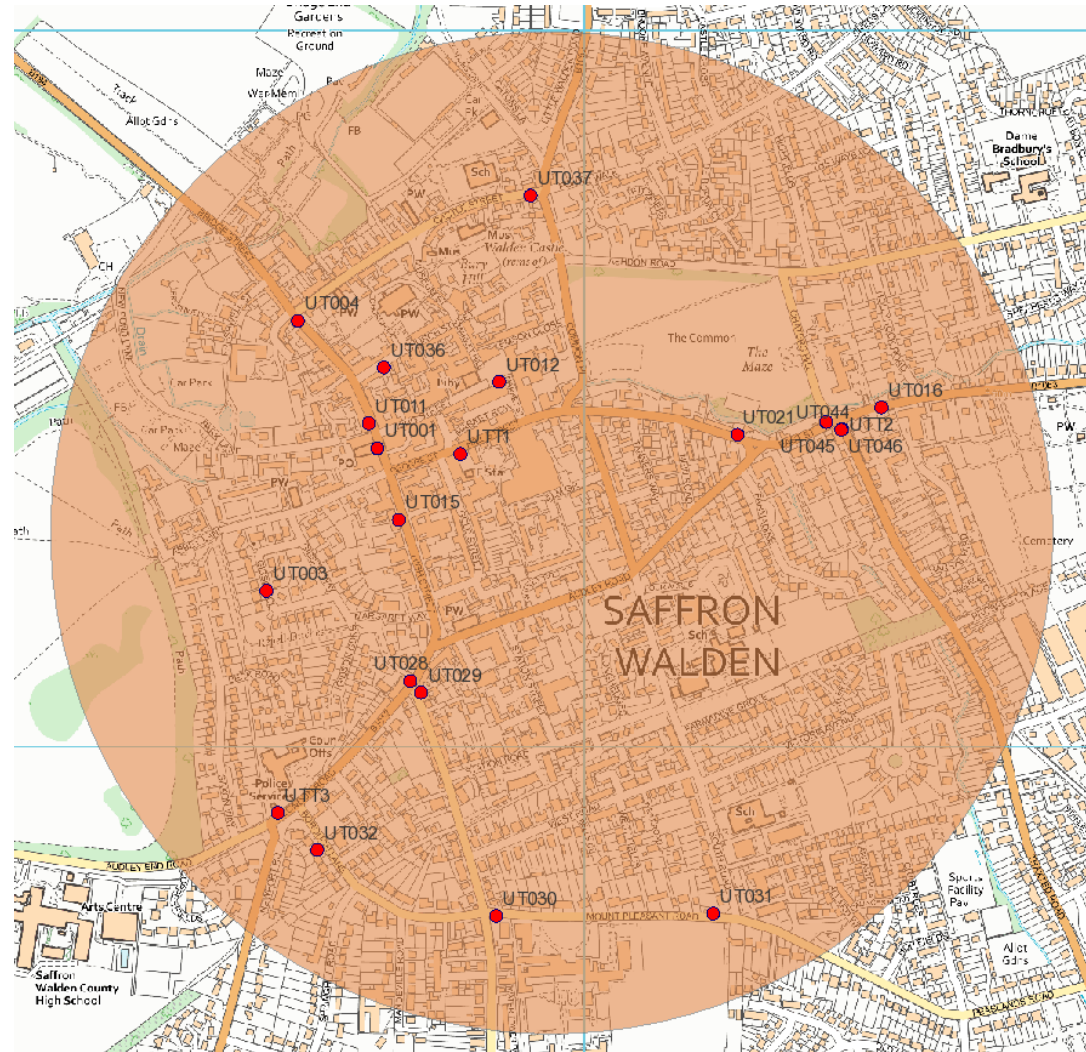
NO₂ Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure should be estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B..

No diffusion tube NO₂ monitoring locations within the district of Uttlesford required distance correction during 2020.

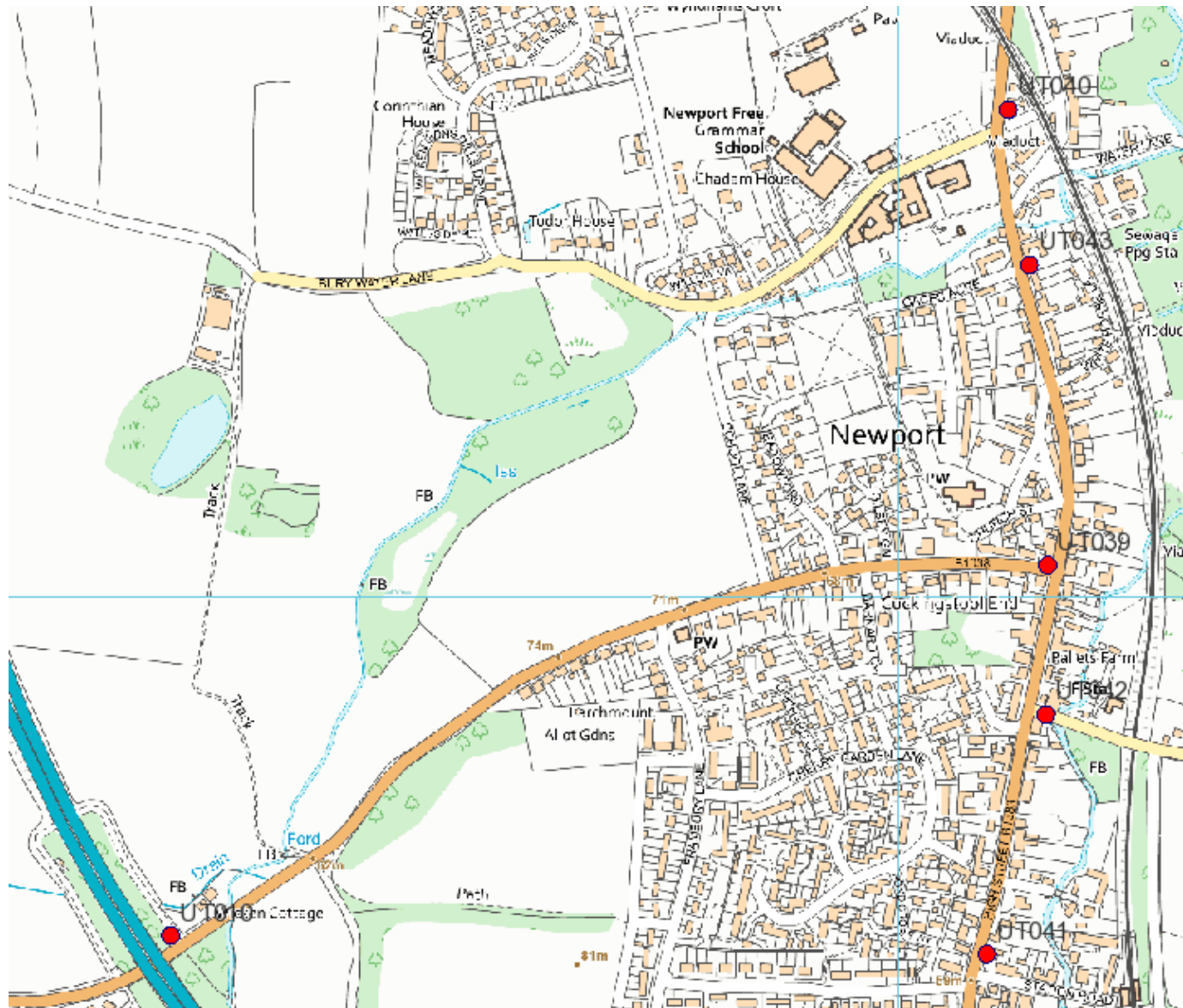
Appendix D: Map of Monitoring Locations and AQMA

Figure D.1 – Monitoring Location Map: Saffron Walden & AQMA



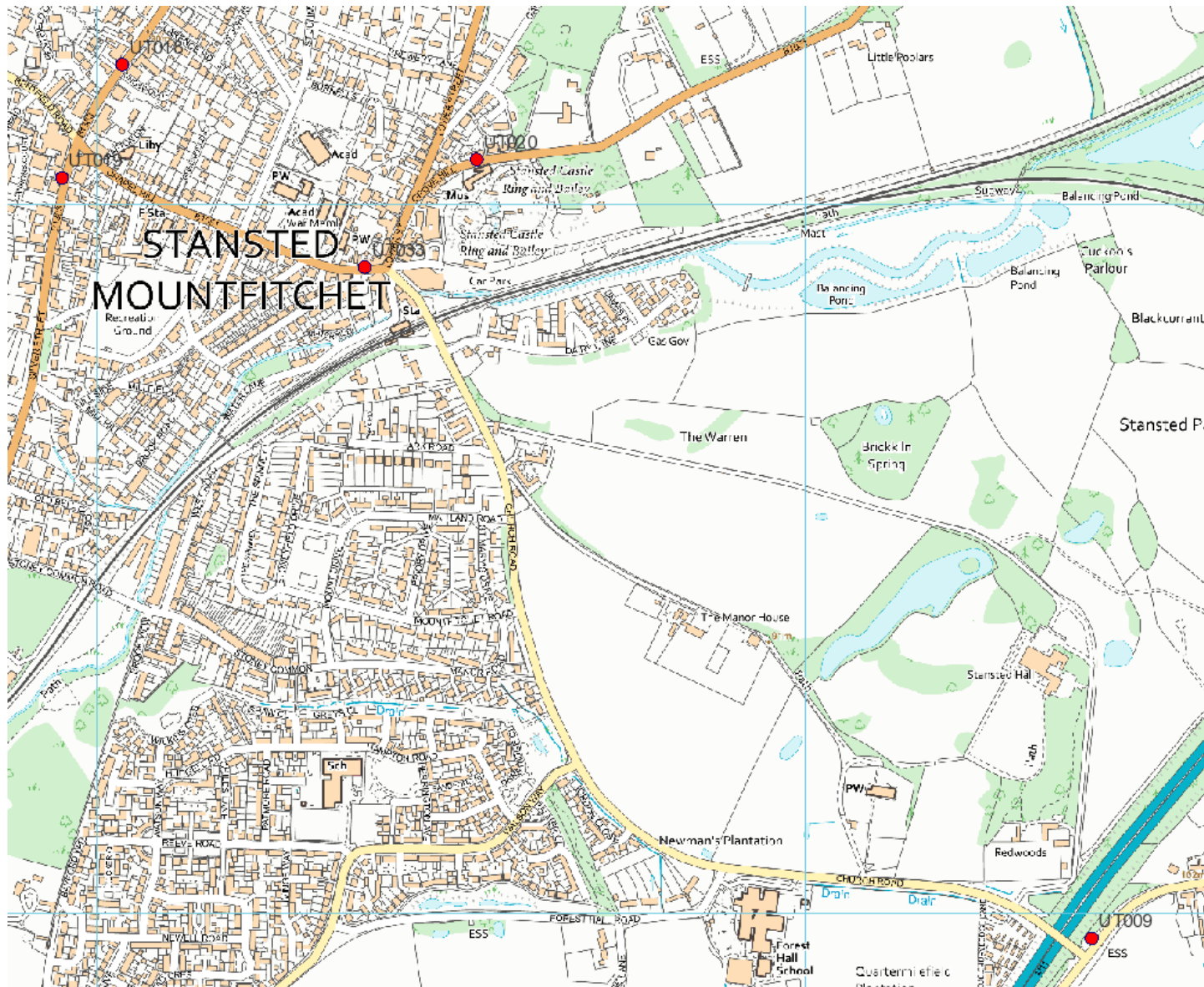
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Figure D.2 – Monitoring Location Map: Newport



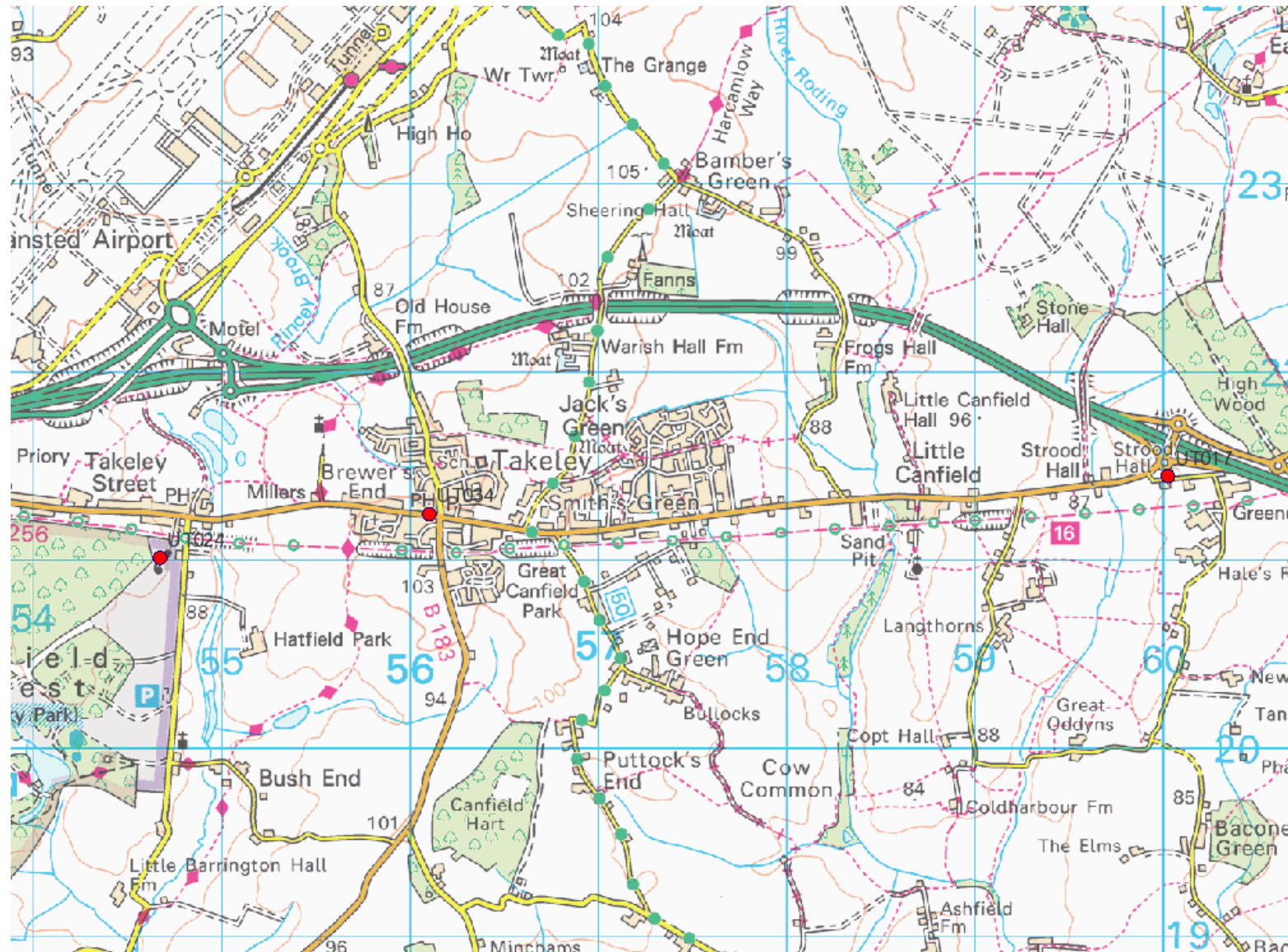
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Figure D.3 – Monitoring Location Map: Stansted Mountfitchet



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Figure D.4 – Monitoring Location Map: Takeley



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Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁵

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

⁵ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Appendix F: Impact of COVID-19 upon LAQM

COVID-19 has had a significant impact on society. Inevitably, COVID-19 has also had an impact on the environment, with implications to air quality at local, regional and national scales.

COVID-19 has presented various challenges for Local Authorities with respect to undertaking their statutory LAQM duties in the 2021 reporting year. Recognising this, Defra provided various advice updates throughout 2020 to English authorities, particularly concerning the potential disruption to air quality monitoring programmes, implementation of Air Quality Action Plans (AQAPs) and LAQM statutory reporting requirements. Defra has also issued supplementary guidance for LAQM reporting in 2021 to assist local authorities in preparing their 2021 ASR. Where applicable, this advice has been followed.

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention, most notably in relation to emissions of air pollutants arising from road traffic. The vast majority (>95%) of AQMAs declared within the UK are related to road traffic emissions, where attainment of the annual mean objective for nitrogen dioxide (NO₂) is considered unlikely. On 23rd March 2020, the UK Government released official guidance advising all members of public to stay at home, with work-related travel only permitted when absolutely necessary. During this initial national lockdown (and to a lesser extent other national and regional lockdowns that followed), marked reductions in vehicle traffic were observed; Department for Transport (DfT) data⁶ suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April, relative to pre COVID-19 levels.

This reduction in travel in turn gave rise to a change of air pollutant emissions associated with road traffic, i.e. nitrous oxides (NO_x), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)⁷ has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO₂ annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which

⁶ Prime Minister's Office, COVID-19 briefing on the 31st of May 2020

⁷ Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

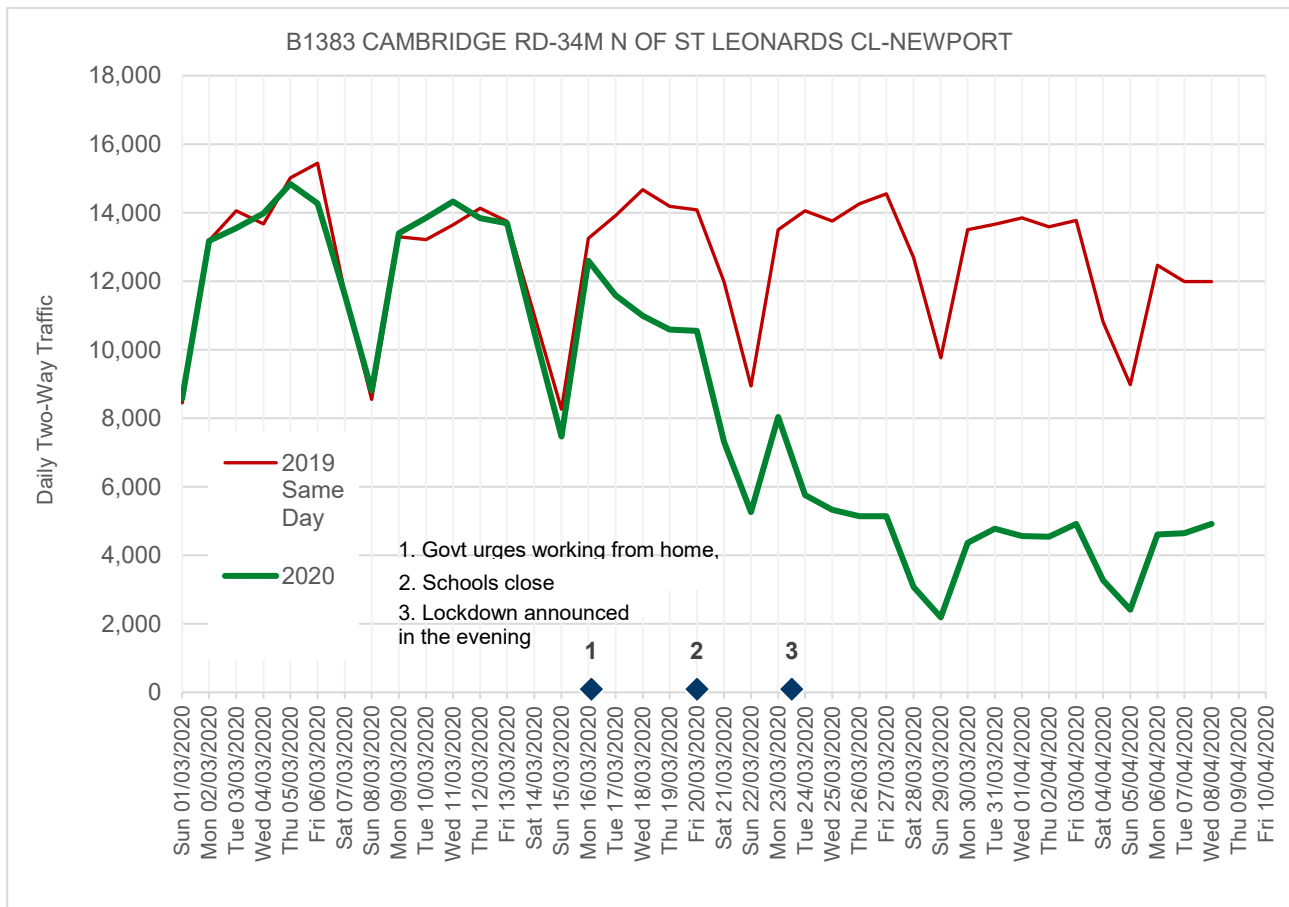
represents an absolute reduction of between 10 to 20µg/m³ if expressed relative to annual mean averages. During this period, changes in PM_{2.5} concentrations were less marked than those of NO₂. PM_{2.5} concentrations are affected by both local sources and the transport of pollution from wider regions, often from well beyond the UK. Through analysis of AURN monitoring data for 2018-2020, AQEG have detailed that PM_{2.5} concentrations during the initial lockdown period are of the order 2 to 5µg/m³ lower relative to those that would be expected under business-as-usual conditions.

As restrictions are gradually lifted, the challenge is to understand how these air quality improvements can benefit the long-term health of the population.

Impacts of COVID-19 on Air Quality within Uttlesford

Various traffic counts were in operation across Essex in 2020. The data from those that operate continuously identified a drop in travel after the initial working from home guidance was issued followed by significant drops after schools were closed and the spring lockdown commenced.

Figure F.1 – Spring 2020 Traffic Data Compared Against 2019



Traffic slowly increased across the year but never got back to 2019 levels.

London Stansted Airport (STN) is London's third airport and is sited in Uttlesford. The airport serves over 27m passengers each year. However, during 2020, the aviation sector was significantly disrupted with a 70% reduction in total passengers flown and 40% reduction in traffic relative to 2019 levels.

The reductions from traffic and aviation movements will have contributed to the significantly lowered concentrations of air pollutions that have been measured by Uttlesford District Council.

Challenges and Constraints Imposed by COVID-19 upon LAQM within Uttlesford

During 2020, COVID-19 has impacted air quality monitoring in 2020. Due to the Governments stay at home message, diffusion tubes that were put out in February remained out until collection in June. Although results were obtained from the laboratory for these tubes, the recommended exposure time was exceeded and as such there is no guarantee of accuracy or precision of the results. The results for the period of February, March, April and May have been disregarded as erroneous.

Uttlesford District Council considers this to be of a large impact on the years air quality monitoring. However, it should be noted that no exceedance would have occurred if the results had of been included

Opportunities Presented by COVID-19 upon LAQM within Uttlesford.

New safer, greener, healthier 20mph speed limits and pedestrianisation for busy Saffron Walden shopping areas have been introduced as part of the continuing response to the COVID-19 pandemic to provide a 'Safer, Greener, Healthier' environment for shoppers and other pedestrians and cyclists.

Interim, signed 20mph speed limits on roads in the busy shopping areas of Saffron Walden were put in place from Friday 26 June on main routes around the town centre, including High Street and George Street / Hill Street. These will be in addition to road closures implemented by the Town Council on the 15th June.

The new lower speed limits aim to encourage people to support their local businesses by increasing pedestrian and cyclist confidence when having to avoid other people, particularly where traffic is passing.

The project is funded by part of the initial £1.9m Emergency Active Travel Fund for Essex announced by the government for such schemes.

The Saffron Walden scheme, like others being introduced across the county, is driven by immediate public health requirements such as social distancing, but in encouraging walking and cycling it will enable healthier, more sustainable ways of getting around locally.

Councillor Kevin Bentley, Deputy Leader of Essex County Council and Cabinet Member for Infrastructure, said: *"Safety is the reason why we are introducing a 20pmh speed restriction in the centre of Saffron Walden. We want to keep people safe from COVID-19 infection while they visit the shops and businesses in Saffron Walden and this is how we are going to do it. While I recognise many people will still need to use their cars, this is a chance for all to think hard about driving for short journeys. This is a once-in-a-generation opportunity to greatly improve our air quality and our health as well as the life opportunities for the next generation."*

See more about the Safer, Greener, Healthier measures on Essex Highways website at: www.essex.gov.uk/safer-greener-healthier

Appendix G: Non-Reference Air Quality Sensors

In 2020 Uttlesford District Council employed three low cost sensors to measure pollution within the district. Data analysis has found that some of the datasets should be excluded on quality grounds. The finalised results for 2021 are in the table below:

Table G.1 – Non-Reference Air Quality Sensors

Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Sensor	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)			
							NO2	O3	PM2.5	PM10
Hill House	Roadside	555917	223377	NO2 / O3 / PM2.5 / PM10	No	Aeroqual AQY	Poor Data Quality No Results Reported	63.15	9.5	22.4
Thaxted	Roadside	561224	230889	NO2 / O3 / PM2.5 / PM10	No	Aeroqual AQY	Poor Data Quality No Results Reported	57.28	11.1	21.46
Junction Thaxted Rd & Radwinter Rd, Saffron Walden	Roadside	554357	238444	PM2.5 / PM10	Yes	Osiris Particle Monitor	Not Monitored	Not Monitored	Poor Data Quality No Results Reported	Poor Data Quality No Results Reported

The data obtained from non-reference air quality sensors can be useful in determining long term trends however as it is not of reference quality shouldn't be used as evidence for undertaking air quality or planning and development management related decisions.

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	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
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm 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

- Defra Diffusion Tube Bias Adjustment Factors Spreadsheet available at; <https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>
- Defra LAQM Summary of Laboratory Performance in AIR NO₂ PT Scheme available at; <https://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html>
- Essex Air Quality Consortium available at; <http://www.essexair.org.uk>
- EssexCarShare.com available at; <https://liftshare.com/uk/community/essex>
- Essex Air Twitter Feed available at; <https://twitter.com/essexair>
- Uttlesford District Council 2020 ASR available at; <https://essexair.org.uk/Reports/Uttlesford2020ASR.pdf>
- Public Health Outcomes Framework Indicator 3.01 available at; <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>
- Local Air Quality Management Technical Guidance LAQM.TG16. April 2021. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland available at; <https://laqm.defra.gov.uk/technical-guidance/>
- Local Air Quality Management Policy Guidance LAQM.PG16. May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland available at; <https://laqm.defra.gov.uk/documents/LAQM-PG16-April-16-v1.pdf>