2021 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: November 2021

Endorsement from the Director of Health & Care Staffordshire County Council

Annual Status Report(ASR)   Air Quality

Endorsement from the Director of Health & Care, Staffordshire County Council.

Staffordshire County Council (SCC) is committed to working with partners to ensure that Staffordshire will be a place where improved health and wellbeing is experienced by all. Poor air quality has a negative impact on public health, with potentially serious consequences for individuals, families and communities. Identifying problem areas and ensuring that actions are taken to improve air quality forms an important element in protecting the health and wellbeing of Staffordshire residents. Improving air quality is often a complex issue, presenting a multi-agency challenge – so it is essential that all agencies work together effectively to deliver improvements where they are needed.

As Director of Health and Care across Staffordshire I endorse this Annual Status Report which sets out the position in all the Local Authorities across Staffordshire and Stoke-on-Trent.

At the end of 2020 our successful Staffordshire wide Air Aware Programme, a joint project led by Staffordshire County Council on behalf of all 8 Districts, Stoke-on-Trent City Council and funded by DEFRA, drew to a close. Building on this success Staffordshire County Council successfully bid for an additional £300k to develop and expand the Air Aware programme and deliver focused interventions in 3 Districts. The programme will be delivered between March 2020 and December 2022 and will focus on reducing levels of NO and PM, which will be monitored and evaluated through a network of air quality sensors.

In addition to the Air Aware programme, Staffordshire County Council is midway through trialling a number of innovative solutions to improve air quality in the county as part of our ADEPT Live Lab SIMULATE programme. SIMULATE is a £1.97 million challenge programme, delivered in partnership with AMEY, Keele University, Catapult Connected Places and is part of the ADEPT Smart Places Research Programme, designed to accelerate innovative solutions in Air Quality and Intelligent Mobility within local authorities. Trials include the installation of two living green walls and deployment of a number of Intelligent Transport Systems, all of which are being monitored and evaluated by a network of air quality sensors to understand their impact on air quality, and in particular levels of PM. The results of which will inform future activity and opportunities to scale up the most effective solutions to help combat poor air quality.

In addition, Officers from Newcastle Borough Council, Stoke City Council and Staffordshire County Council are jointly working under Ministerial Direction to improve transport related air pollution in North Staffordshire.

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Executive Summary: Air Quality in Our Area
Air Quality in Tamworth Borough 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, 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 ages[3], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[4].

In the Tamworth Borough Council area, the main pollutant of concern is nitrogen dioxide which is emitted as a product of combustion from heating sources and especially road vehicles. It follows that the areas of greatest interest in terms of air quality are dwellings close to busy roads or busy junctions, particularly where these are prone to congestion or where the streets are narrow and the houses are close to the carriageway and residential areas close to point sources of combustion such as chimneys serving large boiler plant.

Since 2006 monitoring undertaken by the Council had identified one particular busy junction (the Two Gates crossroads, Dosthill) was showing concentrations of nitrogen dioxide that were very close to the health based standard (called the Air Quality Objective) for nitrogen dioxide, the monitoring intensified and in 2011 it was concluded that certain properties located close to this crossroads were at risk of exceeding the annual mean air quality objective for nitrogen dioxide. In 2012 a specialist firm of air quality consultants, Ricardo-AEA undertook a detailed assessment that involved modelling the pollution concentrations. As a result the council declared an Air Quality Management Area (AQMA) at Two Gates in May 2014. An Air Quality Management Area gives the area special status where relevant professionals are required to consider a range of actions to improve air quality in the affected area (an Air Quality Action Plan).

To some extent air quality issues arising from vehicle exhausts has been reducing (and throughout the borough) due to improved engine efficiency and other technical advances such as the requirement for catalytic converters. In addition, the Staffordshire County Council Highways Department, which is responsible for traffic management at this junction, made alterations to the sequence of the traffic lights at the junction. As a result there was a reduction in the nitrogen dioxide concentration which led the Council to revoke the Air Quality Management Area in March 2018, after the Council had commissioned another detailed assessment that involved remodelling the pollution concentrations (Report ref ED62310- 26 May 2016). The modelling results indicated that there were no exceedances of the annual mean NO_2 objective occurring at any residential properties within the AQMA and recommended the revocation of the Two Gates AQMA which was completed on 23rdMarch 2018.

Although the busy A5 trunk road runs through the Borough and the M42 Motorway runs close to the Borough boundary, there are no sensitive receptors (dwellings) sufficiently close to these roads, so that air quality is not considered to be an issue.

Although there have been no specific problem areas identified locally, nationally there is currently great interest in the extent that very small particles called $PM_{2.5}$ impact on public

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[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

health. In line with national guidance the Council is giving consideration to this pollutant and actions that can be taken to minimise its impact.

Tamworth Borough Council continues to work with other partners to tackle Air Quality such as other Borough & District Councils, Staffordshire County Council, the Highways Authority, Director of Public Health and Public Health England and where appropriate will participate in projects to improve Air Quality.

The Council is also responsible for the regulation of a number of Part A2 and Part B industrial installations that are of significance in terms of air quality. Each process / installation is regulated under the Environmental Permitting (England and Wales) Regulations 2016 and are regularly inspected by the Council`s Environmental Health Officers to ensure they are controlling their emissions to atmosphere in accordance with national guidance. A list of processes that currently hold an Environmental Permit issued by Tamworth Borough Council (as at November 2021) is shown at Appendix G

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, and will continue to improve due to national policy decisions, there are some areas where local action is needed to improve air quality further.

The 2019 Clean Air Strategy[5] sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero[6] sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

As stated above, Tamworth Borough Council has been working with partner organisations to tackle air quality, particularly in and around the Air Quality Management Area. We have revoked our Air Quality Management Area as the concentrations of nitrogen dioxide have fallen below the Air Quality Objective.

We work with the Staffordshire local authorities via the Staffordshire Air Quality Forum to discuss and participate in county wide initiatives. However we have noted that since revoking our AQMA it is only the authorities that have retained an AQMA who primarily receive the benefits of schemes and grants awarded.

However not withstanding this, once the Covid Pandemic restrictions are fully lifted we hope to be able to have access to the Active Travel project to engage with children and their parents in their schools on ways to reduce our individual contributions to air pollution.

Conclusions and Priorities

The trend for the levels of Nitrogen Dioxide over the last five years as can be seen in fig A1 have been decreasing.

The key priorities for air quality in Tamworth include the continuation of the long-term air quality monitoring program which is kept under constant review to ensure that monitoring takes place in the most relevant locations and to tackle air quality issues at source wherever possible either though regulatory controls of emissions to air from certain potentially polluting industries.

Though, the Two Gates Crossroads AQMA has been revoked, officers of the Environmental Health team will continue to consider the impact of new development on existing dwellings and ensuring that no new dwellings or other sensitive developments are constructed in areas of unacceptable air quality through the Planning system.

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[5] Defra. Clean Air Strategy, 2019
[6] DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

We have moved two diffusion tubes which had had continually low readings to new locations that we identified, which could possibly benefit from monitoring due to an increase in traffic, the two new sites are 60 High St, Dosthill(Q4) and 114 Overwoods Rd(Q1).
The tubes that are no longer being monitored due to consistently low readings are 2 Wessenden and 12 Brookside Way. The results for the new tubes Q1 & Q4 are reported for the first time for 2020 in this ASR.

Local Engagement and How to get involved

Air Quality is not "someone else's problem". All members of the community can play a part in improving air quality. Simple steps that we can all take include making short journeys on foot or by bicycle rather than by car or using public transport. As it is often traffic congestion that exacerbates poor air quality, avoiding using vehicles at busy times can be beneficial. Car sharing for journeys to work or for the school run can reduce the number of vehicles using busy roads and junctions.
Other simple measures that can be taken include:

• Purchasing low emission vehicles and or hybrid vehicles as individuals.

• Fleet vehicles and transport companies could play a major role in the use of low emission

vehicles.

• Upgrading boilers to the newest and most efficient gas condensing boilers with the lowest

nitrogen dioxide and carbon dioxide emissions

• Installing renewable options such as solar panels or wind turbines (in appropriate locations).

Members of the public can play their part in improving air quality in the area by obtaining further information from Tamworth Borough Council website http://www.tamworth.gov.uk/air-quality.

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1 Local Air Quality Management

This report provides an overview of air quality in Tamworth Borough Council 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 Tamworth Borough 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.1.

2 Actions to Improve Air Quality
2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority 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.

Tamworth Borough Council declared an AQMA at Two Gates in May 2014, which was revoked on 23rd March 2018 after monitoring results for the area were consistently under the air quality objective standard.

Information on Tamworth`s former AQMA can be found at : https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=271.

Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to Tamworth Borough Council`s former AQMA.

For reference, a map of Tamworth Borough Council`s monitoring locations is available in Appendix D.

Table 2.1 – Former 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 2020		Link
AQMA 1/2014	1st May 2014, **Revoked 23rd March 2018**	NO_2 annual mean	Tamworth	Two Gates, Dosthill, Tamworth.	YES	41.6 µg/m3	20.6 µg/m3	Two Gates Air Quality Action Plan 2015 http://www. tamworth.gov.uk /sites/default/files /environment_docs /Two%20Gates% 20AQAP.pdf	

2.2 Progress and Impact of Measures to address Air Quality in Tamworth Borough Council

Defra's appraisal of last year's ASR concluded

1. Robust and accurate QA/QC procedures were applied. Calculations for bias adjustment, annualisation and distance-correction factors were outlined in detail.
2. The Council has included discussion and review of both its former AQMA and monitoring strategy, informed in large part by the monitoring network in place. The movement of diffusion tubes monitoring location is welcomed to prioritise other areas of higher air pollution as the pollution surrounding the AQMA has remained below the Air Quality Objective. This demonstrates the Councils proactive and dedicated approach to improving air quality across Tamworth.
3. Comments from last year's ASR have been mentioned and addressed. This is welcomed, and we encourage this to continue in future ASRs.
4. The Public Health Outcomes Frameworks was mentioned, and this is encouraged. The Council could consider referring specifically to indicator D01. Fraction of mortality attributable to particulate air pollution. *This **was** referred to, on page 8 in the particulate section of the 2020ASR*
5. Within the report, there are a few errors/ formatting issues. The site names are excluded with Table B.1 in the ASR, however using Table A.2 we can identify the location/name of the tube. Also, there is incorrect wording regarding the changes of monitoring sites within the conclusion and priority section. Please take the time to ensure the report is complete. *This was immediately corrected.*
6. Overall the report is detailed, concise and satisfies the criteria of relevant standards. The Council should continue their good work.

Tamworth Borough Council has taken forward a number of direct measures during the current reporting year of 2020 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.. Nine measures are included within Table 2., with the type of measure and the progress Tamworth Borough Council have made during the reporting year of 2020 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.1a.
More detail on these measures can be found in their respective Action Plans: TMBC Local Plan 2006 – 2031, Local Cycling & Walking Infrastructure Plan 2020 – 2030.

Key completed measures are:
Corporation St / Church St scheme, now completed, involving an alteration of the kerb radius so that buses did not regularly overshoot onto the opposite pavement

B5000 Glascote Road traffic calming and cycle route.

Ashby Road toucan crossing.

The principal challenges and barriers to implementation that Tamworth Borough Council anticipates is facing it that without an AQMA there is less government funding available for air quality projects.

***Tamworth Borough Council expects the following measures to be
completed/progressed over the course of the next reporting year:***

Mill Lane Extend pedestrian crossing time, dropped crossing and tactile paving. The
footway narrows where parking places are provided. Traffic flows and speeds can seem
high on this route around the town centre
Comberford Rd/Coton Lane – modelling work and design

Corporation St Provide more direct route for pedestrians and improve crossing facilities.
The taxi rank and turning area creates a significant diversion for pedestrians and crossing
the road involves negotiating buses.

Policy HG3 of the Local Plan Wilnecote Corridor has identified the need for a
comprehensive approach to regenerating vacant or underused private property and
improving the immediate environment to enhance this important transport corridor
Progress on the following measures has been slower than expected due to: the Covid 19
Pandemic delaying works and as Tamworth Borough no longer has an AQMA it is not
eligible for funding that is usually assigned to council`s with an AQMA.

Table 2.1a – Progress on Measures to Improve Air Quality

Plann	Measure	Category	Classification	Organisation involved & funding source	Planning Phase	Implementa tion phase	Key Performance Indicator	Progress to date	Completion Date	Barriers to implemen tation	Measure status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to implementation
1	Promotion of walking reduction in vehicle use in Tamworth	Alternatives to private vehicle use	Other	Tamworth Borough Council	Local Plan https://www.staffor dshire.gov.uk/Educa tion/Schooltransport /Active-school-travel/Active-school-travel-team.aspx	Throughout 2020	Length of new foot paths	Ongoing	Ongoing	Covid 19	Planning	Reduced vehicle emissions	Length of new foot paths	Planning phase	LAs with AQMAs are prioritised for SCC funded projects that assist schools with alternative modes of travel. We have no AQMA
2	Promotion of car sharing reduction in vehicle use in Tamworth	Alternatives to private vehicle use	Other	Tamworth Borough Council SCC	SCC, https://share-a-lift.co.uk/	Throughout 2020	Decrease in car journeys	Ongoing	Ongoing	Covid 19	Planning	Reduced vehicle emissions	Decrease in car journeys	Implementatio n ongoing	SCC, https://share-a-lift.co.uk/ Put on hold due to the Covid 19 Pandemic
3	Promotion of Cycling	Alternatives to private vehicle use	Other	Tamworth Borough Council SCC	Local Plan www.staffordshire.g ov.uk/Transport/cycl ing/cyclemaps.aspx	Throughout 2020	Length of new cycle paths	Ongoing	Ongoing	Covid 19	Implementation	Reduced vehicle emissions	Length of new cycle paths	Implementatio n ongoing	www.staffordshire.g ov.uk/Transport/cycli ng/cyclemaps.aspx No completion year given as ongoing initiative
4	Increase in Bus use	Alternatives to private vehicle use	Other	Tamworth Borough Council	Local Plan	Throughout 2020	Number of Bus Routes	Ongoing	Ongoing	Covid 19	Planning	Reduced vehicle emissions	Number of Bus Routes	Planning phase	Put on hold due to the Covid 19 Pandemic
5	Domestic smoke control	Public Information	Via the internet	Tamworth Borough Council SCC	Current	Throughout 2020	Reduction in breaches	Ongoing	Ongoing	Nil	Planning	Reduced emissions	Reduction in breaches	Planning phase	No completion year given as ongoing initiative.
6	Continued Integration with planning system	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	SAQF including Tamworth Borough Council	Ongoing	Throughout 2020	Ongoing	Ongoing	Ongoing	Covid 19	Implementation	Reduced emissions	Reduced emissions	Ongoing	No completion year given as ongoing initiative.
7	Regulation of industrial processes	Environmental Permits	Other measure through permit systems and economic instruments	Tamworth Borough Council	Throughout 2019-2020	Throughout 2020 - 2021	Reduction in breaches	Ongoing	Ongoing	Nil	Implementation	Reduced emissions	Reduced emissions	Ongoing	Tamworth only has 13 Permitted processes of which 7 are petrol stations. No completion year given as ongoing initiative.

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

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

Particulate matter, or PM, is the term used to describe particles found in the air, including dust, dirt and liquid droplets. PM comes from both natural and man-made sources, including traffic emissions and Saharan-Sahel dust. These particles can be suspended in the air for long periods of time, and can travel across large distances.

PM less than 10 micrometres in diameter (PM$_{10}$) pose a health concern because they can be inhaled into and accumulate in the respiratory system. PM less than 2.5 micrometres in diameter (PM$_{2.5}$) are referred to as "fine" particles and are believed to pose the greatest health risks, as they can lodge deeply into the lungs and also pass into the bloodstream.

PM$_{2.5}$ is the pollutant which has the biggest impact on public health and on which the Public Health Outcomes Framework (PHOF) D01 Fraction of mortality attributable to particulate air pollution (2019), Public Health Outcomes Framework indicator [7] is based. The Royal College of Physicians (RCP) undertook a review in February 2016 [8] where they found that long term exposure to air pollution impairs lung function growth in children, and that outdoor exposure is linked to lung cancer in adults. Within Staffordshire it is estimated that 5.1%of all deaths can be attributed to exposure to PM$_{2.5}$, compared to 5.1% across England (25,120 deaths annually)[5]. Overall, the estimated cost to individuals and society is more than £20 billion annually for the UK.

2.3.1 Particulate Matter (PM$_{2.5}$) Levels in Staffordshire and Stoke-on-Trent

A number of the Staffordshire Authorities currently monitor locally for PM$_{10}$. Defra's Automatic Urban and Rural Network (AURN) site, Stoke-on-Trent Centre has a dedicated PM$_{2.5}$ monitor. Table 2.3 presents data on the local level of PM$_{2.5}$ annual mean concentrations for the Staffordshire Authorities. Where the data is derived from PM$_{10}$ monitoring this has been adjusted by applying a correction factor of 0.7 to derive the PM$_{2.5}$ component. The correction factor has been derived from the average of all ratios of PM$_{2.5}$/PM$_{10}$ for the years from 2010 to 2014 for forty sites within the Automatic Urban and Rural Network (AURN) where these substances are measured on an hourly basis and follows the guidance published in LAQM (TG16).

[7] Public Health England. Public Health Outcomes Framework 1th June https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000005/ati/102/are/E10000028/iid/30101/age/230/sex/4/cid/4/tbm/1/page-options/car-do-0_ine-yo-1:2019:-1:-1_ine-ct-2_ine-pt-0 © Crown copyright 2021
[8] ['Every Breath we Take: The Lifelong Impact of Air Pollution; Report of a working Party, February 2016, ISBN 978-1-86016-567-2],

Table 2.2 – Annual Mean PM10 and PM2.5 results of monitoring by Staffordshire Authorities 2016 to 2020

Annual Mean PM10 and PM2.5									
Results from monitoring Staffordshire Authorities 2016- 2020									
Authority	Site Type	Monitor Location	OS Grid Ref	(µg/m3)	Year				
					2016	2017	2018	2019	2020
Newcastle under Lyme	Roadside	Queen`s Gardens	E385057	PM_{10}	(5)	(5)	(5)	(5)	(5)
			N346137	$PM_{2.5}$	(5)	(5)	(5)	(5)	(5)
Cannock Chase	Roadside	Cannock A5190	E401392 N309954	PM_{10}	-	14	18	16	(6)
				$PM_{2.5}$	-	9.8	12.6	11.2	(6)
Stoke on Trent	Roadside	Basford	E386288	PM_{10}	-	23	23	23	*
			N346802	$PM_{2.5}$	-	16[1]	16[1]	16[1]	*
	Roadside	A50 Roadside Meir	E392548 N342572	PM_{10}	20[2]	18	19	20	17
				$PM_{2.5}$	14[2]	13[1]	13[1]	14[1]	12[1]
	Urban Background	Stoke on Trent Central	E388351 N347895	$PM_{2.5}$	12	9	9	9	7
East Staffordshire	Roadside	Derby Tum	E424671 N324019	PM_{10}	(4)	(4)	(4)	(4)	(4)
				$PM_{2.5}$	(4)	(4)	(4)	(4)	(4)

Notes: [1]$PM_{2.5}$ results are derived from PM10 monitored results corrected with a 0.7 correction factor in accordance with TG16 – Annex B: Derivation of $PM_{2.5}$ to PM_{10} Ratio. All other results are directly monitored.
[2] Valid data capture for 2015 was 59%. The site was commissioned on 22 May 2015.
(3) Middleport monitor was decommissioned at the end 2015
(4) East Staffordshire`s monitors were decommissioned 2016
(5) Newcastle under Lyme monitors were decommissioned 2016
(6) Cannock Chase no longer monitor PM10 nor PM2.5*
* No data available for 2020.

As can be seen from the results, concentrations of $PM_{2.5}$ within the Staffordshire Authorities are below the 2020 EU limit value of 25µg/m3.

2.3.2 $PM_{2.5}$ and Mortality in Staffordshire & Stoke-on-Trent

Although the levels of $PM_{2.5}$ within the County and City of Stoke on Trent are below the 2020 EU Limit value, the impact on adult mortality directly attributable to $PM_{2.5}$ is nonetheless still an important public health issue within Staffordshire and Stoke-on-Trent. This is revealed in data obtained from Public Health England used to inform Public Health Outcomes Framework indicator D01[5], as shown in Figure 1

The percentage estimated number of deaths attributable to $PM_{2.5}$ in adults over 30 has been translated into the estimated number of attributable deaths for each local authority area within Staffordshire, and are shown in Figure 2. The data presented to 2019 is the latest data available at time of publication of this report. Approximately 5.1% of deaths within the County can be attributed to $PM_{2.5}$.

Figure 1 Estimated average number of deaths by local authority area attributable to PM2.5 within Staffordshire for adults over 30   2015 to 2019

District/County	Percentage
Newcastle-under-Lyme	4.4%
Stafford	4.6%
East Staffordshire	5.1%
South Staffordshire	4.8%
Lichfield	5.0%
Staffordshire Moorlands	4.2%
Cannock Chase	4.9%
Tamworth	5.3%
Stoke on Trent	4.7%
Staffordshire County	4.7%
England	5.1%

Figure 2 Public Health Outcomes Framework Indicator 3.01- Fraction of annual all cause adult mortality attributable to anthropogenic (human made) particulate air pollution (measured as fine particulate matter, PM$_{2.5}$) for Staffordshire Authorities 2015 to 2019[5]

District/County	2015			2016			2017			2018			2019		
	Deaths - all causes persons 30+	%*	Estimated attributable deaths	Deaths - all causes persons 30+	%*	Estimated attributable deaths	Deaths - all causes persons 30+	%*	Estimated attributable deaths	Deaths - all causes persons 30+	%*	Estimated attributable deaths	Deaths - all causes persons 30+	%*	Estimated attributable deaths
Newcastle-under-Lyme	1299	4.2	50	1291	4.7	60	1197	4.2	50	1334	4.2	60	1282	4.9	60
Stafford	1285	4.7	60	1254	4.8	60	1267	4.3	50	1336	4.2	60	1315	4.9	60
East Staffordshire	1129	4.8	50	1065	5.6	60	1098	5.0	50	1093	4.6	50	1128	5.3	60
South Staffordshire	1172	4.7	60	1128	5.1	60	1239	4.5	60	1211	4.6	60	1212	5.1	60
Lichfield	1038	4.6	50	1044	5.5	60	1070	4.9	50	1087	4.6	50	1093	5.2	60
Staffordshire Moorlands	1087	4	40	1110	4.6	50	1127	3.9	40	1108	3.8	40	1080	4.8	50
Cannock Chase	941	4.6	40	879	5.4	50	940	4.7	40	976	4.6	50	908	5.2	50
Tamworth	573	4.9	30	615	6	40	634	5.3	30	653	5.1	30	678	5.6	40
Stoke on Trent	2479	4.9	110	2454	5.0	120	2490	4.4	110	2746	4.4	120	2490	5.2	130
Staffordshire	8524	4.5	390	8386	5.2	430	8572	4.5	390	8792	4.4	390	8692	5.1	440

2.3.3 Actions being taken within Staffordshire to reduce PM$_{2.5}$

A number of the Staffordshire Authorities are currently involved in implementing measures to reduce levels of N0$_2$ within their areas, which are detailed elsewhere in this report. Whilst there is currently no statutory duty imposed on Local Authorities in England to reduce PM$_{2.5}$, a number of the measures are complementary. A mapping exercise completed by the Staffordshire Air Quality Forum members details the measures currently in place which are considered to have an impact in reducing PM$_{2.5}$ within the County. These are produced in Table 2.4 below;

Tamworth Borough Council is taking the following measures as outlined in Table 2.4 and section 2.3.4 in conjunction with our partners at the county council and other partners identified in the table to address PM$_2$

Table 2.3 – Actions being taken within Staffordshire to reduce PM2.5

Measures category	Measure Classification	Effect on reducing NOx and PM10 emissions(low, medium, high)	Reduces PM2.5 emissions	Local Authority						
				Staffordshire Moorlands DC	Newcastle under-Lyme BC	Stafford BC	East Staffs BC	Lichfield DC	South Staffs DC	Tamworth BC
Traffic Management	Urban Traffic Control systems, Congestion management, traffic reduction	low	✓	UTC in Leek Town Centre	UTC in areas of Newcastle Town Centre AQMA and Kidsgrove AQMA. Live labs monitoring work linked to congestion in Newcastle.	UTC in Stafford Town Centre	Town Centre Regeneration Programme & a number of schemes are currently being progressed which will aid traffic management. Many of these will help improve traffic flow within the within the AQMA. Live labs monitoring work linked to congestion in Burton.	LDC is liaising with Midlands Connect to increase volume of traffic using M6 Toll to reduce congestion on the A5 as well as lobbying Highways England to upgrade the A38 & A5 to expressways.		UTC in Tamworth Town Centre at Ventura Park
	Reduction of speed limits, 20mph zones	low	✓			20mph zones near some schools in residential areas	20 mph zones near some schools in residential areas	.	20mph zones in Trysull, Bradley, Kinver and Bilbrook	
	Road User Charging (RUC)/ Congestion charging	low	✓					M6 Toll	M6 Toll	
	Anti-idling enforcement	low	✓	Campaign only Air Aware project	Campaign only Air Aware project		Campaign only Air Aware project	Campaign only Air Aware project		
	Other		✓							
Promoting Travel Alternatives	Workplace Travel Planning	low	✓	https://www.staffordshire.gov.uk/Business/Workplace-health/Active-travel-and-air-quality-in-the-workplace.aspx						
	Encourage / Facilitate home-working	low	✓			Homeworking Policy adopted	Homeworking Policy adopted	Homeworking policy adopted	Agile working policy adopted	Homeworking policy adopted
	School Travel Plans	low	✓	https://www.staffordshire.gov.uk/Education/Schooltransport/Active-school-travel/Travel-to-School-Action-Plans-September-2020.aspx						
	Promotion of cycling	low	✓	https://www.staffordshire.gov.uk/Transport/transportplanning/Walking-and-cycling.aspx					South Staffordshire Cycling Scheme	Same as other Staffs authorities
	Promotion of walking	low	✓	https://www.staffordshire.gov.uk/Transport/transportplanning/Walking-and-cycling.aspx					Walking for health scheme	Same as other Staffs authorities
	Staffordshire Share a Lift Scheme		✓	Staffordshire share a lift scheme "on hold" during 2020/21 - under current procurement exercise, new contract to start Sept/Oct 2021.						
	Promote use of rail and inland waterways	medium	✓	North Staffordshire Community Rail Partnership operating along the North Staffordshire Line includes Blythe Bridge station.	North Staffordshire Community Rail Partnership operating along the North Staffordshire Line includes Kidsgrove station. Kidsgrove station to be fully accessible and regenerated through Town Deal.	Redevelopment of Stafford Station into a gateway associated with HS2 works.	Burton Forecourt improvements recently completed.	Lichfield Trent Valley access for all works recently completed including lifts.	Brinsford Park and Ride - Parkway Station business case ongoing	

Measures category	Measure Classification	Effect on reducing NOx and PM10 emissions(low, medium, high)	Reduces PM2.5 emissions	Local Authority						
				Staffordshire Moorlands DC	Newcastle under -Lyme BC	Stafford BC	East Staffs BC	Lichfield DC	South Staffs DC	Tamworth BC
Transport Planning & Infrastructure	Local Transport Plans and District Strategies	high	✓	https://www.staffordshire.gov.uk/Transport/transportplanning/District-integrated-transport-strategies/districtintegratedtransportstrategies.aspx						
	Public transport improvements-interchanges stations and services	low	✓	Proposed reinstatement of Leek rail connection	Kidsgrove will be multi-modal	New services with S106 funding provided in Stone to new estates in Walton and Yarnfield. Stafford Gateway will be multi- modal		Lichfield Bus Station resurfaced, repainted and new coach parking bays provided	Parkway station will be multi-modal	Planned improvements at Tamworth station
	Public cycle hire scheme	low	✓		e-scooter trials	e-scooter trials				
	Cycle network	low	✓	https://www.staffordshire.gov.uk/Transport/cycling/cyclemaps.aspx						
	Bus route improvements	high	✓	Potential bus stop upgraded in Cheadle Town Centre	RTPI on key routes in Newcastle Town Centre. Improved future bus services to Chatterley Valley	Improved bus priority and interchange on key routes in Stafford post-SWAR	Improvements in Burton town centre	RTPI introduced at key stops in Lichfield City.	Consideration of future bus stop upgrades on key routes	Corporation Street interchange improvements planned for future delivery
Alternatives to private vehicle use	Bus based Park & Ride	medium	✓					New bus central station as part of Friarsgate development scheme		
	Car Clubs	low	✓	✓						
Policy Guidance and Development Control	Planning applications to require assessment of exposure / emissions for development requiring air quality impact assessment	high	✓	✓		http://www.staffordbc..gov.uk/planning/planning-policy/local-plan-2012-2031	http://www.eaststaffsbc.gov.uk/planning/planning-policy/local-plan-2012-2031	https://www.lichfielddc.gov.uk/Council/Planning/The-local-plan-and-planning-policy/Planning-policy.aspx		Local & National Validation requirements 2017: http://www.tamworth.gov.uk/sites/default/files/planning_docs/National-and-Local-Validation-requirements-2017.pdf
	Air Quality Strategy			In development		2019-2021 Air Quality Strategy				

Measures category	Measure Classification	Effect on reducing NOx and PM10 emissions(low, medium, high)	Reduces PM2.5 emissions	Local Authority						
				Staffordshire Moorlands DC	Newcastle under - Lyme BC	Stafford BC	East Staffs BC	Lichfield DC	South Staffs DC	Tamworth BC
	Planning Guidance for developers		✓	In development		http://www.stafforddc.gov.uk/planning/planning-policy/supplementary-planning-policy-documents	Informal guidance in place		Sustainable Development	https://www.tamworth.gov.uk/sites/default/files/planning_docs/Tamworth_Design_SPD_July_2019_v1-0.pdf
	Developer Contributions based on damage cost calculation		✓				Damage cost assessment now required for applicable applications.			
	Planning Policies		✓	• Policy T1: Development and Sustainable Transport• Policy SD2: Renewable/Low-Carbon Energy		http://www.staffordbc.gov.uk/planning/planning-policy/local-plan-2012-2031	Supplementary planning document in development	https://www.lichfielddc.gov.uk/Council/Planning/The-local-plan-and-planning-policy/Planning-policy.aspx	Planning policies and guidance	https://www.tamworth.gov.uk/local-plan
	STOR Sites (Short Term Operating Reserve) Energy Generation . Regulation via planning / permitting regime	high	✓	✓						
	Low Emissions Strategy	high	✓	In development						

Measures category	Measure Classification	Effect on reducing NOx and PM10 emissions(low, medium, high)	Reduces PM2.5 emissions	Local Authority						
				Staffordshire Moorlands DC	Newcastle under -Lyme BC	Stafford BC	East Staffs BC	Lichfield DC	South Staffs DC	Tamworth BC
Freight and Delivery Management	Freight Consolidation Centre	medium	✓							
	Route Management Plans/ Strategic routing strategy for HGV's	high	✓	https://www.staffordshire.gov.uk/Transport/transportplanning/localtransportplan/home.aspx						
	Quiet & out of hours delivery	low	✓			✓				
	Delivery and Service plans	medium	✓			x				
	Freight Partnerships for city centre deliveries	high	✓			x				
Vehicle Fleet Efficiency	Driver training and ECO driving aids	medium	✓			✓				
	Promoting low emission public transport	high	✓			x				
	Vehicle retrofitting programmes	medium	✓		Bus retrofit for vehicles using A53 service 4	x		Retrofitting of old Council owned HGVs and Buses with pollution abatement equipment will be considered by the Council where technically and financially feasible		
	Fleet efficiency and recognition schemes	medium	✓							

Measures category	Measure Classification	Effect on reducing NOx and PM10 emissions(l ow, medium, high)	Reduces PM2.5 emissions	Local Authority							
				Staffordshire Moorlands DC	Newcastle under -Lyme BC	Stafford BC	East Staffs BC	Lichfield DC	South Staffs DC	Tamworth BC
Promoting low emission transport	**Low emission zone (LEZ) Clean Air Zone (CAZ)**	high	✓							
	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	high	✓	In development		Waste fleet vehicles comply with Euro VI.				
	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	high	✓	In development				LDC looking to replacing old vehicles within the fleet with more modern cleaner vehicles, which comply with the prevailing EURO standard. This will be extended to all Council owned vehicles.		
	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	high	✓	In development		Procurement of EV on staff carparks				
	Priority parking for LEV's	high	✓			✓		Electric Vehicle charging spaces		
	Taxi Licensing conditions	medium	✓			✓				
	Taxi emission incentives	medium	✓			✓				
Environme ntal permits	**Introduction/increa se of environment charges through permit systems and economic instruments (Permit fees set centrally)**	medium	✓			✓				
	Measures to reduce pollution through IPPC Permits going beyond BAT	medium	✓	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211863/env-permitting-general-guidance-a.pdf (Chapter 15)						
	Large Combustion Plant Permits and National Plans going beyond BAT	high	✓							
	Other		✓							

Measures category	Measure Classification	Effect on reducing NOx and PM10 emissions (low, medium, high)	Reduces PM2.5 emissions	Local Authority						
				Staffordshire Moorlands DC	Newcastle under -Lyme BC	Stafford BC	East Staffs BC	Lichfield DC	South Staffs DC	Tamworth BC
Other measures	**Smoky Diesel Hotline**		✓	https://www.gov.uk/report-smoky-vehicle						
	A5 and M6 Partnership		✓			x		Strategy for the A5 2011-2026	Strategy for the A5 2011-2026	
	Domestic Smoke Control advice and Enforcement		✓	✓	_	https://www.staffordbc.gov.uk/environment/smoke-control.cfm	Provided via ESBC Website & other literature	https://www.lichfielddc.gov.uk/home-garden/bonfires-barbecues-smoke/1	https://www.sstaffs.gov.uk/environment/smoke-control-areas.cfm	
	Garden Bonfires - Advice and nuisance enforcement		✓	✓	_	http://www.staffordbc.gov.uk/environmental-health/pollution/bonfires	Provided via ESBC Website & other literature	https://www.lichfielddc.gov.uk/home-garden/bonfires-barbecues-smoke/1	https://www.sstaffs.gov.uk/crime-nuisances/bonfires-and-smoke.cfm	http://www.tamworth.gov.uk/air-quality
	Commercial burning advice and enforcement		✓	✓	_	http://www.staffordbc.gov.uk/environmental-health/pollution/bonfires	Provided via ESBC Website & other literature	https://www.lichfielddc.gov.uk/home-garden/bonfires-barbecues-smoke/1		http://www.tamworth.gov.uk/air-quality
	Multi agency working with Fire Service and Environment Agency for trade burning		✓	✓ _	_	✓		Information shared as appropriate		Information shared as appropriate
	Multi agency working with Staffordshire Fire Service and Local Authority Building Controlregarding chimney fires and complaints about DIY domestic heating systems		✓	✓ _	_	✓		Information shared as appropriate		
	Stoke-on-Trent Low Carbon District Heat Network		✓	_	_	✓				

2.3.4 PM$_{2.5}$ in Staffordshire & Stoke-on-Trent - Next steps

As PM$_{2.5}$ is an issue requiring collaboration between the district, county and city authorities within Staffordshire, the following actions are proposed in addition to those outlined in the action plan. Progress on these and the action plan will be detailed in the 2020 ASR. This has been delayed due to the Covid Pandemic

✓To agree a target for reducing the fraction of All Cause Mortality from PM$_{2.5}$ in each district, city and county authority by 2020 this was delayed due to disruption caused by the Covid Pandemic

✓To agree a target for reducing PM$_{2.5}$ exposure (calculated from PM$_{10}$ exposure / background maps / local monitoring where available)

✓To maintain compliance with the 2020 EU limit value of 25µg/m3

✓ To include Public Health Outcome Framework Indicator D01 in the Staffordshire and District Authority and City Council Joint Strategic Needs Assessment for 2019/2020 onwards and to report progress to the relevant Health and Wellbeing Boards. This was delayed due to disruption caused by the Covid Pandemic

✓ To continue to identify risks affecting PM$_{2.5}$ which need to be addressed at a national level e.g.

✓A number of authorities within Staffordshire are receiving applications for STOR (Short Term Operating Reserve) sites to supplement power to the National Electricity Grid at times of peak demand. These sites typically operate during the autumn / winter months and can be high emitters of PM.

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

This section sets out the monitoring undertaken within 2020 by Tamworth Borough 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.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites
Tamworth Borough Council does not operate any automatic (continuous) monitors.

3.1.2 Non-Automatic Monitoring Sites
Tamworth Borough Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 14 sites during 2020. Table A.2 in Appendix A presents the details of the non-automatic sites. Maps showing the location of the monitoring sites are provided in figure D.1 and D2 in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 33%), and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)
Table A.4 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. 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.1 includes distance corrected values, only where relevant.

There are no exceedances of the annual mean Air Quality Objective for nitrogen dioxide for 2020. There is no need, therefore, to consider declaring an AQMA in the Tamworth Borough Council area.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites
Tamworth does not have any Automatic monitoring sites.

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)
10N		47 Upper Gungate	Roadside	420040	305690	NO2	No	2.2	3.0	No	3.0
3N		34 Claremont Rd	Urban Background	420760	304560	NO2	No	2.1	3.0	No	3.0
Q1		114 Overwoods	Roadside	423105	300367	NO2	No	4.0	3.0	No	3.0
Q2		50 Lakeland Drive	Roadside	423430	301280	NO2	No	1.7	3.0	No	3.0
Q3		14 High Broom Court	Roadside	420350	303480	NO2	No	1.8	3.0	No	3.0
Q4		60 High St Dosthill	Roadside	421452	300082	NO2	No	1.9	3.0	No	3.0
Q6S		Dosthill Rd Two Gates	Roadside	421588	301526	NO2	No	1.8	3.0	No	3.0
Q6W		Watling St Two Gates Club	Roadside	421555	301065	NO2	No	2.8	3.0	No	3.0
Q6N		Tamworth Rd Two Gates	Roadside	421580	301630	NO2	No	2.6	3.0	No	3.0
Q6EX		118 Highcliffe Rd	Roadside	421600	301600	NO2	No	15.0	3.0	No	3.0
Q7		253 Glascote Rd	Roadside	422110	303420	NO2	No	2.0	3.0	No	3.0
Q8		1 Arkall Close	Roadside	421380	305450	NO2	No	2.1	3.0	No	3.0
Q9N		Opp 101 Gungate Comberford Rd	Kerbside	420823	304899	NO2	No	1.0	3.0	No	3.0
Q10		251 Tamworth Rd Ammington	Kerbside	420823	304899	NO2	No	1.1	3.0	No	3.0

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.4 – Annual Mean NO$_2$ Monitoring Results: Non-Automatic Monitoring (µg/m^3)

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
10N	420040	305690	Roadside	33	33	36	30.7	30.3	32.2	20.4
3N	420760	304560	Urban Background	83.3.	83.3.	19	18.8	17.1	19.4	14.3
Q1	423105	300367	Roadside	83.3.	83.3.					19.8
Q2	423430	301280	Roadside	83.3.	83.3.	25	24.2	23.8	22.74	17.3
Q3	420350	303480	Roadside	83.3.	83.3.	27	26.5	25.0	24.8	18.1
Q4	421452	300082	Roadside	83.3.	83.3.					20.7
Q6S	421588	301526	Roadside	58.3	58.3	39	37.3	35.5	36.91	23.3
Q6W	421555	301065	Roadside	66.6	66.6	36	34.7	32.6	32.03	22.2
Q6N	421580	301630	Roadside	83.3.	83.3.	33	34.5	34.1	33.97	26.1
Q6EX	421600	301600	Roadside	83.3.	100	37	38.5	25.6	25.95	20.6
Q7	422110	303420	Roadside	83.3.	100	32	32.5	31.0	29.61	23.7
Q8	421380	305450	Roadside	83.3.	100	22	20.7	21.0	21.21	17.5
Q9N	420823	304899	Kerbside	83.3.	100	30	29.8	27.0	29.77	22.1
Q10	420823	304899	Kerbside	83.3.	100	24	25.2	22.3	23.52	17.8

☒ **Annualisation has been conducted where data capture is <75% and >33% 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 µg/m^3.

Exceedances of the NO$_2$ annual mean objective of 40µg/m^3 are shown in **bold**.

NO$_2$ annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO$_2$ 1-hour mean objective are shown in **<u>bold and underlined</u>**.

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.1 – Trends in Annual Mean NO₂ Concentrations

Annual Mean NO2 Concentrations 2016 - 2020
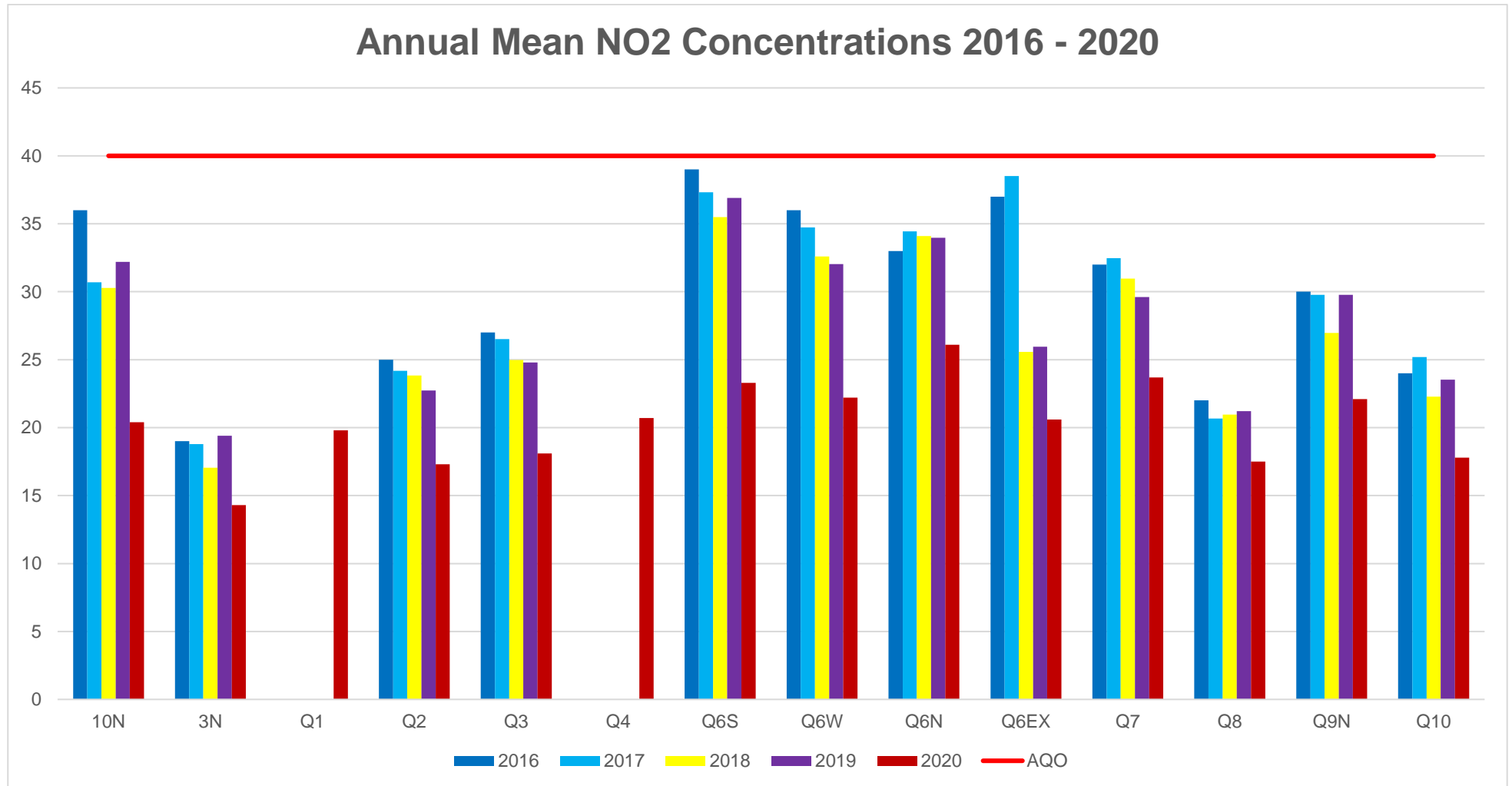
Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO$_2$ 2020 Diffusion Tube Results (µg/m^3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted	Annual Mean: Distance Corrected to Nearest Exposure	Comment
10N	420040	305690	39.8	on floor	>	>	missing	on floor	missing	missing	missing	missing	35.9	38.4	38.0	20.4		
3N	420760	304560	24.0	19.0	>	>	8.3	10.1	9.3	13.7	18.0	18.3	25.7	22.2	16.9	14.3		
Q1	423105	300367	30.9	25.2	>	>	13.8	18.3	15.9	19.9	26.9	21.4	32.6	28.2	23.3	19.8		
Q2	423430	301280	24.5	19.0	>	>	12.8	16.9	13.4	16.6	23.3	22.2	29.8	24.6	20.3	17.3		
Q3	420350	303480	33.4	28.0	>	>	12.8	15.1	14.6	19.2	24.3	8.4	30.0	27.1	21.3	18.1		
Q4	421452	300082	32.9	27.9	>	>	14.7	missing	15.2	20.1	26.3	20.3	32.3	29.5	24.4	20.7		
Q6S	421588	301526	42.4	30.8	>	>	missing	missing	24.5	missing	34.1	25.5	41.7	38.2	33.9	23.3		
Q6W	421555	301065	32.8	27.6	>	>	20.4	25.9	21.4	contam'	missing	30.0	35.9	33.8	28.5	22.2		
Q6N	421580	301630	42.9	31.9	>	>	16.9	23.2	16.1	26.9	33.5	35.1	42.5	37.9	30.7	26.1		
Q6EX	421600	301600	34.1	26.7	>	>	14.0	16.0	21.4	19.5	25.5	25.6	31.0	28.9	24.3	20.6		
Q7	422110	303420	41.0	31.4	>	>	16.5	20.7	19.7	24.0	29.4	26.0	35.7	34.9	27.9	23.7		
Q8	421380	305450	28.1	21.2	>	>	missing	11.1	12.0	15.8	22.6	21.3	28.6	24.9	20.6	17.5		
Q9N	420823	304899	37.1	30.6	>	>	14.7	17.1	18.4	21.5	28.0	27.1	34.1	31.8	26.0	22.1		
Q10	420823	304899	29.3	23.0	>	>	7.7	14.1	13.8	16.2	22.2	23.0	33.8	26.0	20.9	17.8		

☒ **All erroneous data has been removed from the NO$_2$ diffusion tube dataset presented in Table B.1.**

☒ **Annualisation has been conducted where data capture is <75% and >33% in line with LAQM.TG16.**

☐ **Local bias adjustment factor used .**

☒ **National bias adjustment factor used .**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column.**

☒ **Tamworth Borough Council confirm that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.**

Notes:

Exceedances of the NO$_2$ annual mean objective of 40µg/m^3 are shown in **bold**.

NO$_2$ annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO$_2$ 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

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

Diffusion tubes are used to provide a relatively simple and cost-effective method of monitoring for nitrogen dioxide at several locations where nitrogen dioxide levels are likely to be high as identified in previous reviews and assessments, due to the proximity of significant sources (normally traffic).

The tube is a small plastic device, approximately 6 centimetres long, open at one end, with a disc at the other end that reacts to nitrogen dioxide. They are located at sites, typically on lamp posts or other street furniture or on the facades of properties and exposed for a 4–5 week period, in line with the UK national survey.
The tubes contain a mesh which is doped with 20% v/v Triethanolamine (TEA) in Water and are fitted with a cap before and after exposure which is undertaken according to the nationally published monthly schedule.

New or Changed Sources Identified Within Tamworth Borough During 2020
Tamworth Borough Council has not identified any new sources relating to air quality within the reporting year of 2020.

Additional Air Quality Works Undertaken by Tamworth Borough Council During 2020
Tamworth Borough Council has not completed any additional works within the reporting year of 2020, other than those reported in Table 2.1a.

QA/QC of Diffusion Tube Monitoring
The diffusion tubes are supplied and analysed by Staffordshire County Council Scientific Services, which participates in the *AIR NO$_2$ Proficiency Testing Scheme* for the analysis the diffusion tubes.

Air PT Scheme
The AIR NO$_2$ Proficiency Testing Scheme is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL). AIR PT is a new scheme, started in April 2014, which combines two long running PT schemes: LGC Standards STACKS PT scheme and HSL WASP PT scheme.

Staffordshire County Council Scientific Services scored 75% for the period covered by this report if you either taken into account the last five before the pandemic or the three during the pandemic. The Air PT Scores for the relevant period is shown in Table C.1 with the Staffordshire Scientific Services results highlighted in yellow for the period covered by this report.

The LAQM notified Staffordshire County Council Scientific Services that 75% is satisfactory if the 5 rounds from last year where used as 2 from 2020 were not recovered ie rounds 37 and 39 during 2020 were cancelled due to the pandemic as this is supported by the explanation given by Staffordshire County Council Scientific Services below.

Over a rolling five round AIR PT window, one would expect that 95 % of laboratory results should be ≤ ± 2. If this percentage is substantially lower than 95 % for a particular laboratory,

within this five round window, it may be concluded that the laboratory in question may have significant systematic sources of bias in their assay.
However the following explanation has been provided by Staffordshire Scientific Services as well as the assurance by the LAQM.

AIR PT Scheme (LGC)

Results for each round are classified on z-scores for each tube as SATISFACTORY (≤2), QUESTIONABLE (between 2 and <3) and UNSATISFACTORY (>3).

- Since round 31 in May 2019 we have found issues with the AIR PT scheme tubes sent to the laboratory where droplets of the doping solution are on the inside of the tubes and inside the upper cap that needs to be removed in order to carry out the analysis.
- Since first noticing these issues we have contacted LGC with our concerns.
- In February 2020 we received the following response from LGC - "**The requirement is for participants to extract the innards of the Palmes tube and if quantitatively done, then good performance can be expected. This can be seen in the most recent report issued which included sample 11 (round AR036), where the satisfactory percentage was between 88.9 – 94.4%.**" The satisfactory percentage refers to the performance of all participating laboratories. For Round 40 the satisfactory percentage decreased to 78.6 - 85.7%
- After Round 40 we requested LGC to give a more a more detailed response to our concerns and we are currently waiting for them to respond.

PT Rounds during 2020
- Round 36 – Feb 2020. 100% satisfactory results. For this round we ordered 3 sets of LGC tubes. 2 sets contained tubes that again had droplets of solution on the inner surface of the tubes and in the white caps. These issues were reported to LGC on 23rd Jan and 13th Feb 2019. The results submitted were for the tubes where there were no issues identified.
- Rounds 37 and 39 that were due to take place in April and in July 2020 respectively were cancelled by LGC as their supplier was unable to provide the tubes for testing due to the Covid19 lockdown.
- Round 40 – Sept 2020. 2 out of 4 results for round 40 were satisfactory, and 2 were unsatisfactory. Again, we found droplets of doping solution on the inside of the white caps for 3 of the tubes and we have raised this with LGC (28th Oct 2020). We are waiting for a response from them at the time of writing this summary.

For the most up to date published results in the AIR PT Scheme see the Defra website: https://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html

A summary of our results for 2019 and 2020 can be found in the table overleaf.

PT Round	z-scores	Performance
30 – Jan 2019	-1.00, -0.67, -0.62, -0.38	100% SATISFACTORY
31 – May 2019	-1.82, -1.75, -4.47, -1.49	75% SATISFACTORY 25% UNSATISFACTORY
33 – July 2019	-3.15, -0.75, 0.06, -0.07	75% SATISFACTORY 25% UNSATISFACTORY
34 – Oct 2019	-0.21, -2.58, -0.56, 0.00	75% SATISFACTORY 25% QUESTIONABLE
36 – Feb 2020	-0.97, -0.52, -0.21, -0.15	100% SATISFACTORY
40 – Sept 2020	-1.60, -3.53, -1.84, -3.12	50% SATISFACTORY 50% UNSATISFACTORY

Field Inter-comparison (NPL)

We have received performance reports from NPL for January to October 2020 so far. We do not have a result for May as the tubes were lost in the post. For all the months we have results for our performance was 'GOOD' (CoV <20) and the bias factor for 2020 based on these results is 0.85.

Bias factor

The bias adjustment factor spreadsheet on the Defra website was updated in Sept 2020. The overall bias factor for Staffordshire Highways Laboratory for 2019 (including the Field Inter-comparison result and all the co-location results from participating local authorities, total of 17 studies) was 0.93.

For the most up to date information on bias factors see the Defra website: https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

Click on link in the 3rd paragraph down (highlighted 'here').

The monitoring has been completed in adherence with the 2020 Diffusion Tube Monitoring Calendar, other than for March and April when no tubes were collected.

Table C Laboratory summary performance for AIR NO₂ PT rounds AR0030, 31, 33, 34, 36. 37, 39 and 40

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent AIR NO₂ PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of ☐ ± 2 as defined above

AIR PT Round	AIR PT AR030	AIR PT AR031	AIR PT AR033	AIR PT AR034	AIR PT AR036	AIR PT AR037	AIR PT AR039	AIR PT AR040
Round conducted in the period	January – February 2019	April – May 2019	July – August 2019	September – November 2019	January – February 2020	May – June 2020	July – August 2020	September – October 2020
Aberdeen Scientific Services	75 %	100 %	100 %	100 %	100 %	NR [4]	NR [4]	100 %
Cardiff Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3]
Edinburgh Scientific Services	100 %	NR [2]	100 %	25 %	50 %	NR [4]	NR [4]	100 %
SOCOTEC	87.5 % [1]	100 % [1]	100 % [1]	100 % [1]	100 % [1]	NR [4]	NR [4]	100 % [1]
Exova (formerly Clyde Analytical)	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3
Glasgow Scientific Services	100 %	100 %	100 %	50 %	100 %	NR [4]	NR [4]	100 %
Gradko International [1]	75 %	100 %	100 %	100 %	75 %	NR [4]	NR [4]	75 %
Kent Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3]
Kirklees MBC	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3]
Lambeth Scientific Services	50 %	100 %	50 %	100 %	100 %	NR [4]	NR [4]	100 %
Milton Keynes Council	100 %	100 %	50 %	100 %	100 %	NR [4]	NR [4]	25 %
Northampton Borough Council	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [4]	NR [4]	NR [3]
Somerset Scientific Services	100 %	100 %	100 %	100 %	100 %	NR [4]	NR [4]	100 %
South Yorkshire Air Quality Samplers	100 %	100 %	100 %	75 %	100 %	NR [4]	NR [4]	100 %
Staffordshire County Council	100 %	75 %	75 %	75 %	100 %	NR [4]	NR [4]	50 %
Tayside Scientific Services (formerly Dundee CC)	100 %	NR [2]	100 %	NR [2]	100 %	NR [4]	NR [4]	100 %
West Yorkshire Analytical Services	100 %	100 %	100 %	50 %	100 %	NR [4]	NR [4]	NR [2]

Diffusion Tube Annualisation

Annualisation was required for three diffusion tubes (10N,Q6S & Q6W) due to tubes being missing on collection, ie data capture was < 75% and > 33% . Annualisation was undertaken using the LAQ Diffusion Tube Data Processing Tool.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 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 NOx/NO₂

continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method. Tamworth Borough Council have applied a national bias adjustment factor of 0.85 to the 2020 monitoring data. A summary of bias adjustment factors used by Tamworth Borough Council over the past five years is presented in Table C.1.

We use a national bias adjustment factor chosen as opposed to a local factor because we do not use continuous analysers.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2020	National	09/21	0.85 (15 studies)
2019	National	09/20	0.93 (17 studies)
2018	National	06/19	0.89 (14 studies)
2017	National	09/18	0.88 (11studies)
2016	National	06/17	0.83 (15 studies)

NO_2 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 NO_2 concentration at the nearest location relevant for exposure should be estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO_2 monitoring locations within Tamworth Borough Council required distance correction during 2020.

QA/QC of Automatic Monitoring

No automatic NO_2 monitoring locations within Tamworth Borough Council required distance correction during 2020.

Table C.2 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor Burton on Trent Horninglow	Annualisation Factor Coventry Allslley	Annualisation Factor Leamington Spa	Annualisation Factor Birmingham Acocks Green	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
10N	0.6411	0.5793	0.6743	-	0.6316	38.0	24.0	
Q6S	0.8020	0.8142	0.8126	-	0.8096	33.9	27.4	
Q6W	0.9151	0.9097	0.9239	-	0.9163	28.5	26.1	

Bias Adjustment Factor

It is known that there are systematic differences in the performance of different laboratories and preparation methods of diffusion tubes. Table C.3 shows the studies that have been used to compare results from diffusion tubes (analysed by Staffordshire County Council Scientific Services) to results of co-located automatic chemiluminesence monitors, where data has been collected for 9 months or more.

From these studies it can be seen that the bias adjustment factor (A) of 0.85 has therefore to be applied (multiplied) to the diffusion tube results for the 2020 data as shown in Table C.3.

Table C.3

– Bias Adjustment Factors for Staffordshire Scientific Services 2020

2	**National Diffusion Tube Bias Adjustment Factor Spreadsheet**										**Spreadsheet Version Number: 09/21**
3	Follow the steps below **in the correct order** to show the results of **relevant** co-location studies									This spreadsheet will be updated at the end of March 2022	
4	Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods										
5	Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet										
6	This spreadhseet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.									LAQM Helpdesk Website	
7	The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.								Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.		
8	Step 1:	Step 2:	Step 3:				Step 4:				
9	Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List		Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.						
10	If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data[2]		If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953						
11	**Analysed By**[1]	**Method** To undo your selection, choose (All) from the pop-up list	**Year**[5] To undo your selection, choose (All)	**Site Type**	**Local Authority**	**Length of Study (months)**	**Diffusion Tube Mean Conc. (Dm) (μg/m^3)**	**Automatic Monitor Mean Conc. (Cm) (μg/m^3)**	**Bias (B)**	**Tube Precision**[6]	**Bias Adjustment Factor (A) (Cm/Dm)**
2770	Staffordshire Scientific Services	20% TEA in water	2020	UB	Stoke-on-Trent City Council	9	23	19	22.8%	G	0.81
2790	Staffordshire Scientific Services	20% TEA in water	2020	KS	Manchester City Council	12	40	37	9.2%	G	0.92
2791	Staffordshire Scientific Services	20% TEA in water	2020	UC	Manchester City Council	12	26	27	-3.9%	G	1.04
2792	Staffordshire Scientific Services	20% TEA in water	2020	SI	Manchester City Council	12	16	15	10.2%	G	0.91
2794	Staffordshire Scientific Services	20% TEA in water	2020	R	Oldham Council	11	29	23	26.1%	G	0.79
2795	Staffordshire Scientific Services	20% TEA in water	2020	UB	Salford City Council	12	22	21	5.1%	G	0.95
2796	Staffordshire Scientific Services	20% TEA in water	2020	B	Salford City Council	12	13	11	18.1%	G	0.85
2797	Staffordshire Scientific Services	20% TEA in water	2020	R	Salford City Council	12	37	34	8.1%	G	0.93
2805	Staffordshire Scientific Services	20% TEA in water	2020	R	Stockport MBC	12	31	26	18.5%	G	0.84
2806	Staffordshire Scientific Services	20% TEA in water	2020	R	Stockport MBC	10	20	17	19.7%	G	0.84
2807	Staffordshire Scientific Services	20% TEA in water	2020	UB	Wigan Council	12	21	15	36.7%	G	0.73
2821	Staffordshire Scientific Services	20% TEA in water	2020	KS	Marylebone Road Intercomparison	11	53	44	18.7%	G	0.84
2825	Staffordshire Scientific Services	20% TEA in water	2020	R	East Staffordshire Borough Council	10	39	36	7.3%	G	0.93
2852	Staffordshire Scientific Services	20% TEA in water	2020	R	Tameside MBC	12	45	31	45.0%	G	0.69
3230	Staffordshire Scientific Services	20% TEA in water	2020		Overall Factor[3] (15 studies)					Use	0.85

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

Figure D.1 – Map of Non-Automatic Monitoring Site
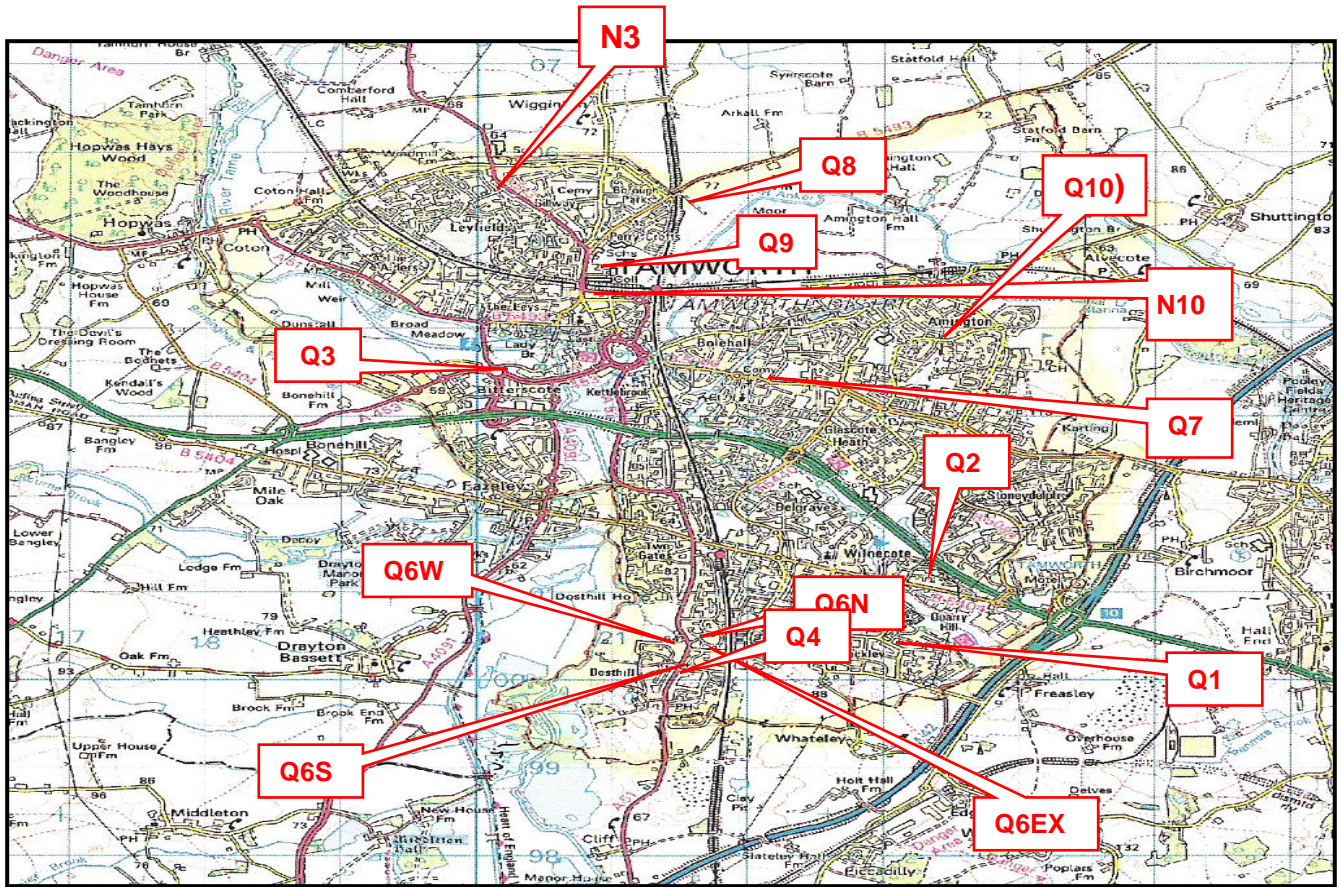
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of HMSO © Crown copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Tamworth Borough Council Licence No. 100018267. (2010)

NB   The TAM Q6E site has been moved to 118 Highcliffe Rd and is now called TAM.6QEX
        The sites around the Two Gates crossroads are shown at Figure D.2

Figure D.2 Map showing location of nitrogen dioxide diffusion tubes in the former Two Gates Air Quality Management Area
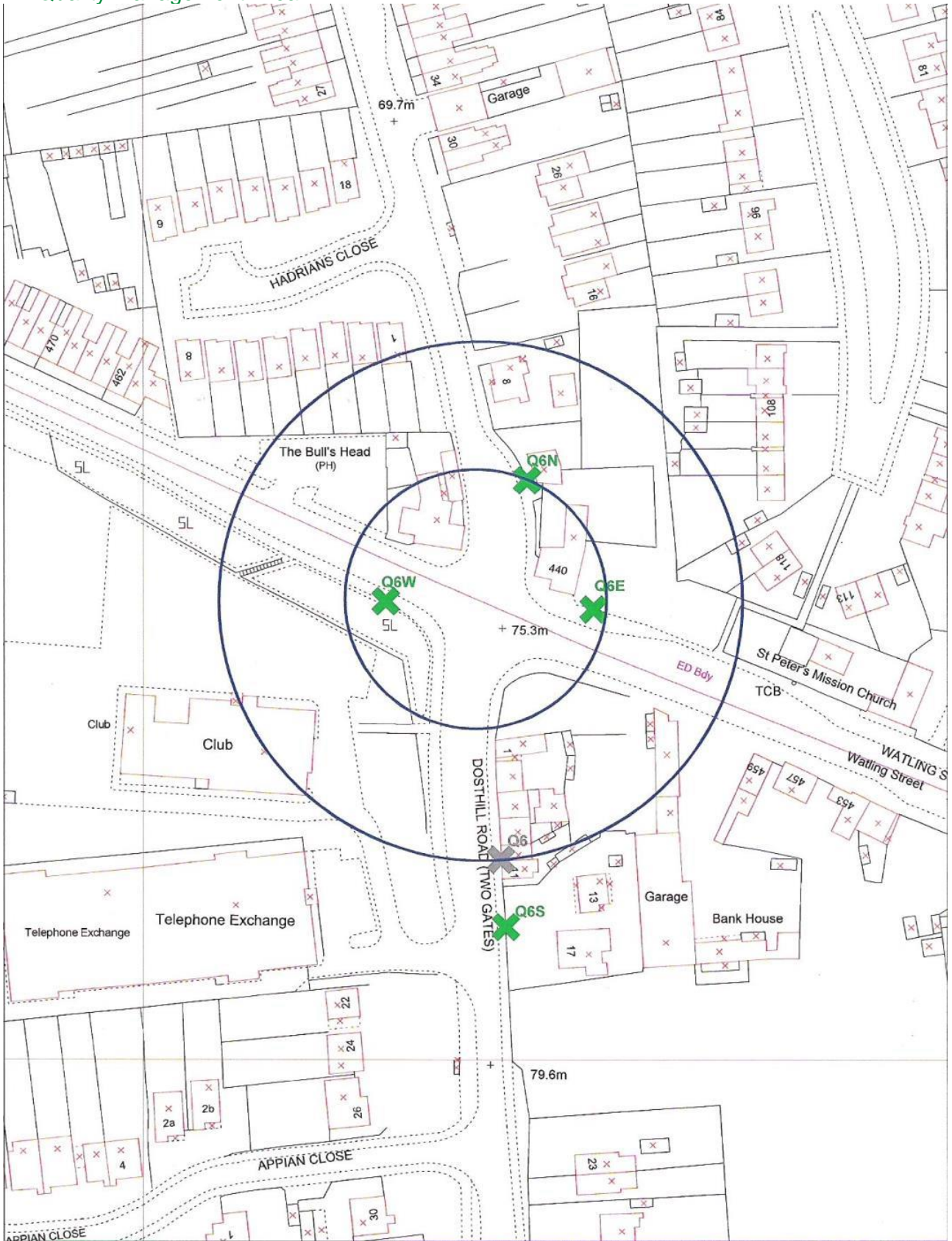
Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[7]

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

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

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 (NO_2) 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) data[9] 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)[10]has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO_2 annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which represents an absolute reduction of between 10 to 20µg/m^3 if expressed relative to annual mean averages. During this period, changes in $PM_{2.5}$ concentrations were less marked than those of NO_2. $PM_{2.5}$ 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/m^3 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 Tamworth Borough

1. Reductions of NO_2 concentrations of between 20 and 30% were experienced at roadside diffusion tube monitoring sites between April and June 2020. This equated to a 10 to 20% reduction in annual mean concentration relative to 2019

2. However it is difficult to determine by how much the traffic fell as Staffordshire County Council have no relevant traffic counts for the areas with the diffusion tubes.

3. Nationally it has been estimated that traffic had reduced by 70% mid April 2020. Tamworth Borough Council managed to adhere to the collection of the diffusion tubes in accordance with the Defra timetable other than for the months of March and April

   More than 75% data capture was achieved via the majority of diffusion tubes. Tubes were stored in accordance with laboratory guidance and analysed promptly.

   So that there were no identifiable impacts as a consequence of COVID-19 upon air quality reporting within Tamworth Borough.

Challenges and Constraints Imposed by COVID-19 upon LAQM within Tamworth Borough Council

No challenges or constraints relating to LAQM have arisen during 2020 as a consequence of COVID-19 within Tamworth Borough Council other than those discussed in section 2.2.& 2.3.

[9] Prime Minister`s Office, COVID-19 briefing on the 31st May 2020
[10] Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

Table F 1 – Impact Matrix

Category	Impact Rating: None	Impact Rating: Small	Impact Rating: Medium	Impact Rating: High
Automatic Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Automatic Monitoring – QA/QC Regime	Adherence to requirements as defined in LAQM.TG16	Routine calibrations taken place frequently but not to normal regime. Audits undertaken alongside service and maintenance programmes	Routine calibrations taken place infrequently and service and maintenance regimes adhered to. No audit achieved	Routine calibrations not undertaken within extended period (e.g. 3 to 4 months). Interruption to service and maintenance regime and no audit achieved
Passive Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Passive Monitoring – Bias Adjustment Factor	Bias adjustment undertaken as normal	<25% impact on normal number of available bias adjustment colocation studies (2020 vs 2019)	25-50% impact on normal number of available bias adjustment studies (2020 vs 2019)	>50% impact on normal number of available bias adjustment studies (2020 vs 2019) and/or applied bias adjustment factor studies not considered representative of local regime
Passive Monitoring – Adherence to Changeover Dates	Defra diffusion tube exposure calendar adhered to	Tubes left out for two exposure periods	Tubes left out for three exposure periods	Tubes left out for more than three exposure periods
Passive Monitoring – Storage of Tubes	Tubes stored in accordance with laboratory guidance and analysed promptly.	Tubes stored for longer than normal but adhering to laboratory guidance	Tubes unable to be stored according to be laboratory guidance but analysed prior to expiry date	Tubes stored for so long that they were unable to be analysed prior to expiry date. Data unable to be used
AQAP – Measure Implementation	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP
AQAP – New AQAP Development	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP

4 Appendix G: Processes Regulated for Emissions to Air by Tamworth Borough Council under the Environmental Permitting (England & Wales) Regulations 2016 as at November 2021

Ref No	Operator Name	Process Address	Post Code	Process Description
Part A2				
P01	Forterra Building Products Ltd	Wilnecote Brick, Hedging Lane, Wilnecote	B77 5EU	Manufacture of heavy clay goods. (Brickworks)
Part B				
P03	Envirostrip (GB) Ltd	Unit 11, 12 and 12a Hedging Lane Industrial Estate	B77 5HH	Ferrous Metal
P06	Envirostrip (GB) Ltd	Warwick House, Watling Street, Wilnecote	B77 5BH	Metal decontamination by the application of heat
P02	Breedon Southern Ltd	Mica Close, Tamworth,	B77 4DS	Concrete batching plant
P09	Apollo Chemicals Limited	Sandy Way, Amington Industrial Estate	B77 4DS	Manufacture of solvent borne adhesives and solvents
P11	Sainsbury's Supermarkets Ltd	Sainsbury's Supermarkets Ltd, Bitterscote	B78 3HD	Unloading of petrol into stationary storage tanks
P12	William Morrisons Supermarkets Ltd	William Morrison Supermarket Plc, Hilmore Way	B77 2NY	Unloading of petrol into stationary storage tanks
P13	Tamworth Service Station	Tamworth Service Station, Upper Gungate	B79 7NU	Unloading of petrol into stationary storage tanks
P14	Tesco Stores Ltd	Dosthill Service Station, High Street, Dosthill	B77 1LE	Unloading of petrol into stationary storage tanks
P15	Fuel Centre Ltd	Wilnecote Service Station, Watling Street, Wilnecote	B77 5AB	Unloading of petrol into stationary storage tanks
P22/10	Roadside Welcome	78 Glascote Rd, Tamworth, B77 2AF	B77 2AF	Unloading of petrol into stationary storage tanks
P20	Asda Stores Ltd	Ventura Road	B78 3HD	Unloading of petrol into stationary storage tanks
P21	Stormking Plastics Ltd	Amington Point, Sandy Way, Amington	B77 4ED	Processes for the manufacturer of fibre reinforced plastics

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
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10μm 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

- 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.
- 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.