South Staffordshire Council

2022 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: July, 2022

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Executive Summary: Air Quality in Our Area

Air Quality in South Staffordshire 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].

Air Quality is an important consideration in the health of the population of our district. Within South Staffordshire previous reviews and assessments have proved sufficient evidence to be satisfied that the Council's area is only likely to see exceedances of the NO_2 annual mean objective. This was again confirmed as in April 2019 the council commissioned Air Quality Consultants Ltd to carry out a review of air quality across the district and to scrutinise a Development Consent Order application for a Strategic Rail Freight Interchange Hub known as the West Midlands Interchange.

We now have only one Air Quality Management Area within our district: AQMA No. 5, which is located in Hatherton at Oak Farm on the A5 which can be seen further on in this report and at:

https://uk-air.defra.gov.uk/aqma/details?aqma_ref=1495#809

[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 2021

[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

It should be noted that this AQMA has levels of nitrogen dioxide within the objective level where it has now remained for over 5 years. As before we will maintain our monitoring within the AQMA until we are confident levels will remain comfortably below objective level.

There are no new major sources of emissions within the district and no new AQMA's to be designated. There are however a number of developments taking place within the North East of the District and these developments will be considered collectively in relation to modelling of the potential cumulative effects of these developments to provide reassurance to Members and the public that air quality will remain within objective levels. These developments include:

- The extension of the i54 Business Park
- The Strategic Rail Freight Interchange at Four Ashes
- Industrial Development on the old Royal Ordnance Factory Site at Featherstone
- The new M54/M6 North link road
- Housing allocation:
    - 160 East of Codsall with another 200 on safeguarded land.
    - 200 North of Penkridge
    - 80 East of Penkridge

Levels of NO_2 over the district remain below objective level and during 2021 are well below objective. This may be due to the residual effects of COVID-19 where there were further lock downs and the message of working from home undoubtedly had an effect on daily traffic numbers.

The air quality within our district is of a good standard. However, we acknowledge that traffic does contribute to elevated levels of particulate matter and NO_2 within our AQMA, however it should be noted that levels are within objective.

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 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.

We continue to work closely with our partnering local authorities within the South Staffordshire Air Quality Forum to ensure that our air quality remains at a good standard and any improvements are made that can be.

We have contributed to the improvements in our air quality with the launch of ECO stars on 24th February 2016. This helps improve the efficiency of the HGV's travelling throughout our district both now and in future years.

In 2021 we had 15 tubes out over the district. These are a combination of historical tubes placed in potential hotspots and reactive tubes placed out following concern from local residents and councillors and also recommendation from air quality consultants.

All tubes demonstrate NO_2 levels to be well below objective both before and following bias adjustment.

Following advice from our air quality consultants and the need to begin looking at $PM_{2.5}$, we have purchased a dust monitor. Training for officers has now been undertaken and the monitor has been installed where our real time analyser was previously located in Penkridge close to the M6 for the moment. The monitor has been located here for a number of reasons: there is a ready electricity supply and cabinet to house the monitor, it is easily accessible for officers to change filters and tackle any problems, it is also in the main wind direction from the incinerator in Cheslyn Hay which is of concern to local residents and parish councillors. Currently there is no data from the monitor due to issues

[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

with calibration and a fault and therefore the equipment is out for repair. We hope to get it up and running as soon as possible.

$PM_{2.5}$ will be considered due to the health impacts noted by DEFRA with it's links to the Public Health Outcomes Framework.

We hope to undertake further investigation by looking at the risk of two poultry farms in the district at Pilaton and Hatherton to determine the risk of PM_{10} being exceeded in the area. We will look at the number of birds and distance between the nearest property and the shed using the equation provided in DEFRA Technical Guidance (DEFRA, 2016). This will also be looked at in terms of the biomass installation at one of the farms. This is where we hope to locate the new dust monitor and hopefully an additional monitor should funding be available.

Quarries were also identified by the consultants as posing a potential risk in terms of PM_{10}. We will be looking into Calf Heath Quarry, Redhurst Quarry, Seisdon Quarry and 2 quarries in Cheslyn Hay. These again are areas that we will look to locate our new dust monitor.

Our AQMesh equipment hasn't really worked for us and has now been taken down. We are looking at alternative real time analysers for future use.

Conclusions and Priorities

There are no new developments within the district that will cause Air Quality Objectives to be exceeded now or in the future.

It is planned to renew and update the action plan due to the changes happening in the monitoring, the addition of new monitoring equipment and the recent revocation of AQMA's within the district. This has been hindered due to the limited resources within the team and the COVID-19 pandemic placing additional pressures on the team.

The main priorities for the local authority this year will be the implementation of particulate matter monitoring around the quarries and chicken farms in the district with the addition of our new dust monitoring equipment. We will also be trying to identify a suitable real time analyser with a view to installing it within our remaining AQMA.

We will continue in signing up companies to our ECOStars scheme over this and neighbouring districts.

There has been no breach of objective level for NO_2 over the district in 2021. This is perhaps due to the continued influence of COVID-19 and it's associated reduction in traffic

movement because of further lockdowns and working from home messages. Therefore, again the results from 2021 will be treated with caution.

Local Engagement and How to get Involved

You can obtain further information about air quality within the district at: https://www.sstaffs.gov.uk/environment/air-quality.cfm

When members of the public voice concerns of air quality to either ourselves or local councillors we always try and respond and over the recent years have adjusting our tube monitoring to demonstrate that our air quality is of a good standard within the district.

Local Responsibilities and Commitment

This ASR was prepared by the Legal and Public Health Department of South Staffordshire Council.

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 focusing on human made pollution with particulate matter.

The Air Aware project “phase 2” continues through 2022 until March 2023. The project delivers behaviour change to increase active travel, decrease car use and raise

awareness of air quality issues through five elements. These are business and school engagement, communications and campaigns, electric vehicles and air quality monitoring in three targeted locations, Burton, Leek and Cannock. Campaigns include Anti-Idling, walking and cycle activities and Clean Air Day. These have been countywide engaging a large number of businesses and schools. The programme will focus on reducing levels of NO and PM, which will be monitored at key locations.

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.

Dr Richard Harling

Director of Health and Care

Staffordshire County Council

[1 June 2022]

If you have any comments on this ASR please send them to Wendy Green at:

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1 Local Air Quality Management

This report provides an overview of air quality in South Staffordshire Council during 2021. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

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

A summary of AQMAs declared by South Staffordshire Council can be found in Table 2.1. The table presents a description of the 1 AQMA that is currently designated within South Staffordshire Council. Appendix D: Map(s) of Monitoring Locations and AQMAs provides a map of the AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation are as follows:

- NO_2 annual mean;

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 National Highways?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
AQMA – Oak Farm	01/03/07	NO_2 Annual Mean	An area encompassing one residential property along the A5 opposite a truck stop.	YES	39.3µg/m^3	25.3 µg/m^3	Air Quality Action Plan 2008	https://www.sstaffs.gov.uk/environment/air-quality.cfm

☒ **South Staffordshire confirm the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **South Staffordshire confirm that all current AQAPs have been submitted to Defra.**

2.2 Progress and Impact of Measures to address Air Quality in South Staffordshire Council

Defra's appraisal of last year's ASR concluded that the report was accepted. There were a few comments. One being that the declaration date of AQMA 5 – Oak Farm did not match DEFRA's date. This has been rectified and amended within this ASR. It was also mentioned that the revocation of three of our AQMA's (Bursnips, Wedges Mills and Woodbank) had not had the official revocation orders submitted. Again this has now been completed. The Air Quality Action Plan is currently being worked on but is still delayed through resource issues over the past 12 months.

South Staffordshire Council has taken forward a number of direct measures during the current reporting year of 2021 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. Four measures are included within Table 2.2, with the type of measure and the progress South Staffordshire Council have made during the reporting year of 2021 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

South Staffordshire Council expects the following measures to be completed over the course of the next reporting year: Utilisation of the new dust monitor equipment in relation to the two chicken farms on district and the numerous quarries. It is hoped that the air quality action plan will also be updated. South Staffordshire Council's priorities for the coming year are to begin looking at Particulate Matter over the district with attention on PM_{10} and $PM_{2.5}$. We also hope to potentially purchase a new piece of real time analysing equipment and will therefore begin a scoping exercise to look at what may be available to us.

The principal challenges and barriers to implementation that South Staffordshire Council anticipates facing are again resource restricted coming out of the Covid-19 pandemic. A period of unprecedented change and additional pressures on the Council as a whole.

Progress on the following measures has been slower than expected due to a lack of resources. The Covid-19 pandemic brought untold pressure on the little resources that were already under pressure. We are working towards now rectifying this issue and hope to be able to dedicate more time to this area over coming years.

South Staffordshire Council anticipates that the measures stated above and in Table 2.2 will achieve continued compliance in Oak Farm AQMA No. 5.

South Staffordshire Council worked to implement these measures in partnership with the following stakeholders during 2021:

- Staffordshire Air Quality Forum
- The Highways Authority;

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	ECO Stars Scheme	Vehicle Fleet Efficiency	Drive training and ECO driving aids	2014	Ongoing	South Staffordshire Council, DEFRA, SAQF councils: Stafford, Cannock, Stoke, Lichfield, Newcastle, Tamworth, East Staffs.	DEFRA Grant	Yes	Finished		Ongoing	Ongoing. Levels of NO_2 are below objective within AQMA 5 – Oak Farm	NO2 below objective	Ongoing. Companies continue to be signed up to the scheme	
2	Continued Integration with planning system	Policy Guidance and Development Control	Air Quality planning and policy guidance	Ongoing	Ongoing	South Staffordshire Council					Ongoing		NO2 below objective	Ongoing	
3	Continue close working with SAQF	Policy Guidance and Development Control	Air Quality planning and policy guidance	Ongoing	Ongoing	SAQF Councils: Stafford, Cannock, Stoke, Lichfield, Newcastle, Tamworth, East Staffs.					Ongoing		NO2 below objective	Ongoing	
4	Regulation of industrial processes under the Environmental Permitting Programme to control emissions to air	Environmental Permits	Other	Ongoing	Ongoin	South Staffordshire Council					Ongoing		NO2 below objective	Ongoing	

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 (2020), 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 4.9%of all deaths can be attributed to exposure to $PM_{2.5}$, compared to 5.6% across England (31,750 deaths annually). 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).

South Staffordshire Council doesn`t monitor either $PM_{2.5}$ nor PM_{10} currently however this will change shortly with the purchase of dust monitoring equipment.

[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 2.3 – Annual Mean PM10 and PM2.5 results of monitoring by Staffordshire Authorities 2017 to 2021

Annual Mean PM10 and PM2.5 Results from monitoring Staffordshire Authorities 2017- 2021									
Authority	**Site Type**	**Monitor Location**	**OS Grid Ref**	**(µg/m3)**	**Year**				
					2017	**2018**	**2019**	**2020**	**2021**
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)	(6)
				$PM_{2.5}$	9.8	12.6	11.2	(6)	(6)
Stoke on Trent	Roadside	Basford	E386288	PM 10	23	23	24	*	19
			N346802	$PM_{2.5}$	16(1)	16(1)	17	*	13
	Roadside	A50 Roadside Meir	E392548	PM 10	18	19	20	17	18
			N342572	$PM_{2.5}$	13(1)	13(1)	14(1)	12(1)	14(1)
	Urban Background	Stoke on Trent Central	E388351	PM 10			12	13	14
			N347895	PM 2.5	9	9	9	7	8
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.
(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[7], as shown in Figure 1

The estimated percentage 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 2020 is the latest data available at time of publication of this report. Approximately on average 6.0% of deaths between 2018 to 2020 within the County can be attributed to $PM_{2.5}$. (Note the method for calculating this figure has changed we only have the data for 2018,2019 & 2020 using this new method).

Figure 1 Estimated percentage number of deaths by local authority area attributable to PM2.5 within Staffordshire for adults over 30 2018 to 2020

District/County	Percentage
Newcastle-under-Lyme	5.7%
Stafford	5.7%
East Staffordshire	6.2%
South Staffordshire	6.1%
Lichfield	6.3%
Staffordshire Moorlands	5.4%
Cannock Chase	6.2%
Tamworth	6.7%
Stoke on Trent	6.1%
Staffordshire County	6.0%
England	6.6%

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 2018 to 2020[7]

	2018			2019			2020		
District/County	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	1334	5.7	80	1282	6.8	90	1548	4.7	70
Stafford	1336	5.8	80	1315	6.8	90	1565	4.5	70
East Staffordshire	1093	6.3	70	1128	7.3	80	1355	5.1	70
South Staffordshire	1211	6.3	80	1212	7.0	90	1418	4.9	70
Lichfield	1087	6.4	70	1093	7.2	80	1272	5.2	70
Staffordshire Moorlands	1108	5.2	60	1080	6.6	70	1276	4.5	60
Cannock Chase	976	6.4	60	908	7.2	70	1046	5.1	50
Tamworth	653	6.9	50	678	7.7	50	752	5.6	40
Stoke on Trent	2746	6.1	170	2490	7.2	180	3034	5.0	150
Staffordshire	8798	6.1	530	8692	7.0	610	10227	4.9	500

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 $PM_{2.5}$

Table 2.4 – 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 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	✓	Advisory 20mph zones near some schools in residential areas		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	✓			No		M6 Toll	M6 Toll	Campaign only Air Aware project
	Anti-idling enforcement	Low	✓	Campaign only Air Aware project	Campaign only Air Aware project	No	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	✓	Agile working policy adopted		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 Additional Capability Funded activities in Burton & Stafford Town areas only, linked to infrastructure improvements. Social prescribing bid to be submitted for Newcastle to improve fitness and health through prescribing waling & cycling.					South Staffordshire Cycling Scheme	Same as other Staffs authorities
	Promotion of walking	Low	✓	https://www.staffordshire.gov.uk/Transport/transportplanning/Walking-and-cycling.aspx Additional Capability Funded activities in Burton & Stafford Town areas only, linked to infrastructure improvements. Social prescribing bid to be submitted for Newcastle to improve fitness and health through prescribing waling & cycling.					Walking for health scheme	Same as other Staffs authorities
	Staffordshire Share a Lift Scheme		✓	Staffordshire share a lift scheme "on hold" during 2020/21 – plans to update in 2022.						
	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. Planning application approved during 2021.	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. Alternative location for bus station currently under consideration	Parkway station will be multi-modal	Planned improvements at Tamworth station
	Public cycle hire scheme	Low	✓		e-scooter trials	e-scooter trials NOW ENDED AWAITING CONCLUSIONS				
	Cycle network	Low	✓	https://www.staffordshire.gov.uk/Transport/cycling/cyclemaps.aspx Newcastle town deal includes a town centre permeability theme which includes new walk & cycle infrastructure going on from Active Travel fund 2 scheme, Business case to be complete soon.						
	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.	Consider ation of future bus stop upgrades on key routes	Corporation Street interchange improvements planned for future delivery discussions ongoing with TBC
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	South Staffordshire Local Plan South Staffordshire Council (sstaffs.gov.uk)	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		2019-2022 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.staffordbc.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 has been used for applicable applications.		Damage cost assessment now required for applicable applications.	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		In development as part of Climate Change Policy				

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	✓			X				
	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		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	✓	Staffordshire membership of ECO Stars Scheme						

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
Promoting low emission transport	**Low emission zone (LEZ) Clean Air Zone (CAZ)**	High	✓			X				
	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	High	✓	Procurement Strategy in development; phase 1 "spend analysis completed"		Waste fleet vehicles comply with Euro VI.				

	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	High	✓	Energy Saving Trust (EST) have reviewed current fleet and issued draft The majority comply with are highest EURO emission standard tween with the rest completed between 2022/ 2023		In prgress as part of Climate Change Action Plan		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	✓	EV strategy on council car parks included in new car parking strategy. Trial alternative fuels; Electric and hydrated vegetable oil are currently being tested by waste fleet	Newcastle towns deal includes EV charging infrastructure.	Procurement of EV on staff carparks				
	Priority parking for LEV's	High	✓	✓		✓		Electric Vehicle charging spaces	Electric Vehicle charging spaces at offices	EV charging spaces being investigated
	Taxi Licensing conditions	Medium	✓	In development		✓				
	Taxi emission incentives	Medium	✓			✓				
Environmental permits	**Introduction/increase 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	✓			Nil				
	Other		✓			Nil				

Measures category	Measure Classification	Effect on reducing NOx and PM10 emissions	Reduces PM2.5	Local Authority

		(low, medium, high)	emissions	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	Bonfires and Smoke South Staffordshire Council (sstaffs.gov.uk)	
	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	Smokey Bonfire Leaflet (sstaffs.gov.uk)	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	Bonfires and Smoke South Staffordshire Council (sstaffs.gov.uk)	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	Information shared as appropriate	Information shared as appropriate
	Multi agency working with Staffordshire Fire Service and Local Authority Building Control regarding chimney fires and complaints about DIY domestic heating systems		✓	✓ -	-	✓	Information shared as appropriate	Information shared as appropriate	Information shared as appropriate	
	Stoke-on-Trent Low Carbon District Heat Network		✓	-	-	Nil	Information shared as appropriate			

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 2022 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) **this was delayed due to disruption caused by the Covid Pandemic**

✓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 2021 by South Staffordshire Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2017 and 2021 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Non-Automatic Monitoring Sites

South Staffordshire Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 15 sites during 2021. Table A.1 in Appendix A presents the details of the non-automatic sites. 2 tubes were taken down from 2020, FE3 and CH1 as they were generally always missing. It should be noted that levels at these 2 sites were always comfortably below objective and therefore it was decided not to put the tubes back up.

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

There were no exceedances of objective level during 2021. Potentially due to further COVID lockdowns and the working from home message.

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 25%), and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Error! Reference source not found. and Table A.2 in Appendix A compare 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 2021 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.

No exceedances over the district in 2021 which is in line with previous years monitoring and supports the statement that the air quality within South Staffordshire is of a good standard.

The official revocation orders have now been correctly submitted for the revocation of 3 AQMA's – Woddbank, Wedges Mills and Burnips which demonstrated low levels of nitrogen dioxide comfortably below objective level for over 10 years.

AQMA 5 – Oak Farm will remain in place for contuned moniotring. The level has dropped within the AQMA to comfortably below objective, however, is this short term due to restrictions imposed by COVID-19 measures or a longer term trend? This Is what we will be looking at in future years.

Appendix A: Monitoring Results

Table A.1 – 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)
HA2	HA2	Roadside	394776	309756	NO_2	Yes – 5 Oak Farm	Adjacent	1	No	3
PE1	PE1	Roadside	392259	314020	NO_2	No	Adjacent	1	No	3
PE2	PE2	Roadside	393177	313866	NO_2	No	10	11	No	3
SA2	SA2	Roadside	396716	308742	NO_2	No	Adjacent	2	No	3
FA1	FA1	Roadside	391191	307871	NO_2	No	Adjacent	1	No	3
COD1	COD1	Roadside	387023	303197	NO_2	No	Adjacent	3	No	3
SCH1	SCH1	Roadside	397232	307107	NO_2	No	Adjacent	10	No	3
CH2	CH2	Roadside	397983	307148	NO_2	No	Adjacent	1	No	3
FE1	FE1	Roadside	394368	305411	NO_2	No	Adjacent	2	No	3
FE2	FE2	Roadside	394451	305497	NO_2	No	10	2	No	3
COV1	COV1	Roadside	391588	304602	NO_2	No	Adjacent	1	No	3
HUN1	HUN1	Roadside	397256	313004	NO_2	No	Adjacent	1	No	3
HUN2	HUN2	Roadside	397280	313058	NO_2	No	Adjacent	1	No	3
ES1	ES1	Roadside	396312	303815	NO_2	No	Adjacent	1	No	3
PEN1	PEN1	Roadside	389597	303857	NO_2	No	Adjacent	1	No	3

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 – 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 2021 (%) [2]	2017	2018	2019	2020	2021
HA2	394776	309756	Roadside	100	92	33.3	33.2	34.2	20.9	25.0
PE1	392259	314020	Roadside	100	92	-	-	-	14.8	17.8
PE2	393177	313866	Roadside	100	100	25.4	28.7	30.0	17.6	20.7
SA2	396716	308742	Roadside	100	83	29.1	29.4	30.3	20.7	22.3
FA1	391191	307871	Roadside	100	100	-	-	25.3	16.6	18.9
COD1	387023	303197	Roadside	100	100	-	-	17.6	10.2	12.7
SCH1	397232	307107	Roadside	100	100	-	-	17.5	12.5	13.7
CH2	397983	307148	Roadside	100	100	-	-	21.8	13.6	15.9
FE1	394368	305411	Roadside	100	92	-	-	27.1	18.3	21.2
FE2	394451	305497	Roadside	100	92	-	-	36.1	23.8	28.7
COV1	391588	304602	Roadside	100	100	-	-	-	22.8	24.1
HUN1	397256	313004	Roadside	100	100	-	-	-	12.5	14.4
HUN2	397280	313058	Roadside	100	75	-	-	-	12.8	16.0
ES1	396312	303815	Roadside	100	75	-	-	-	16.2	18.2
PEN1	389597	303857	Roadside	100	92	-	-	-	10.5	10.8

☒ **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 **bold and underlined**.

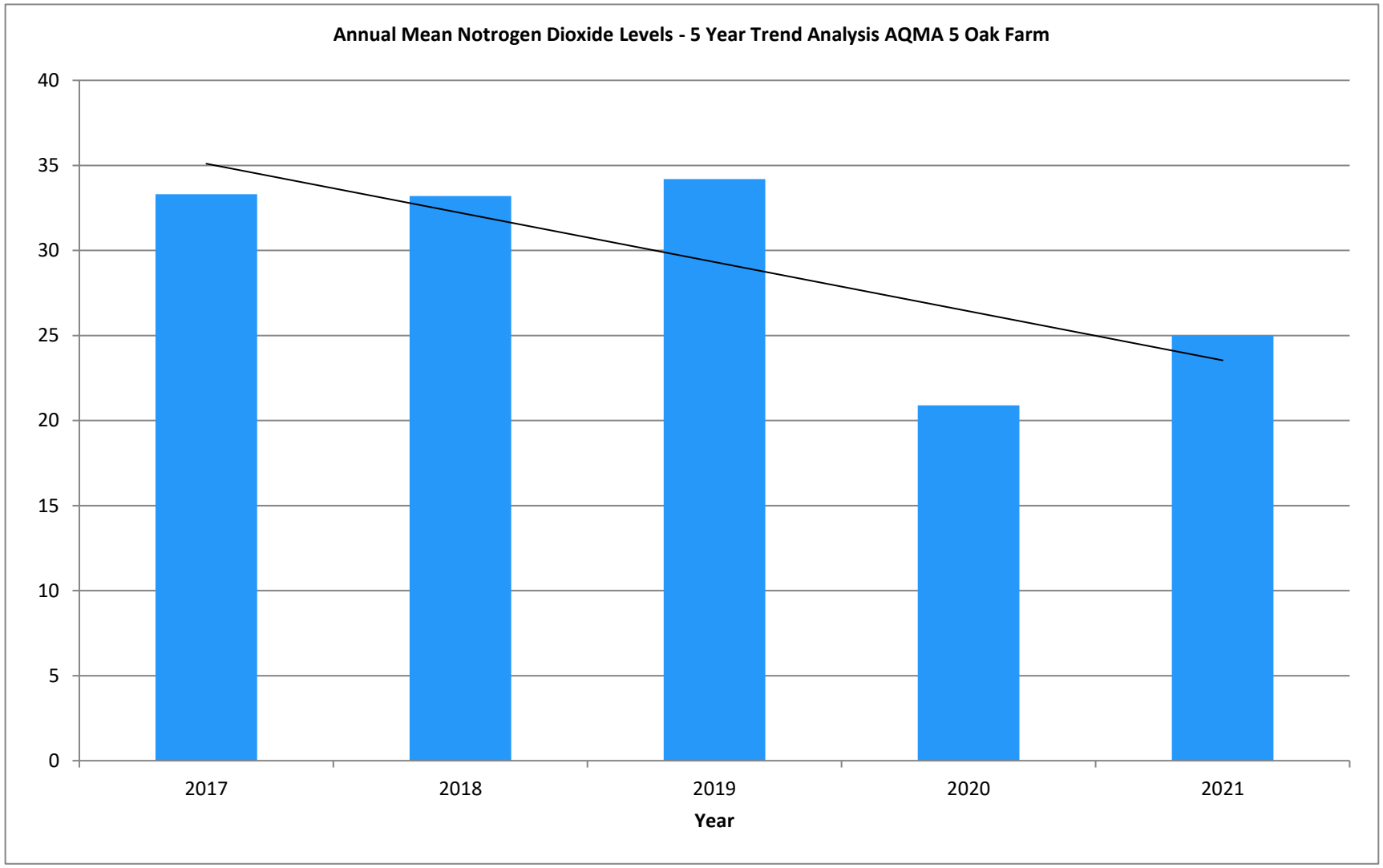
Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

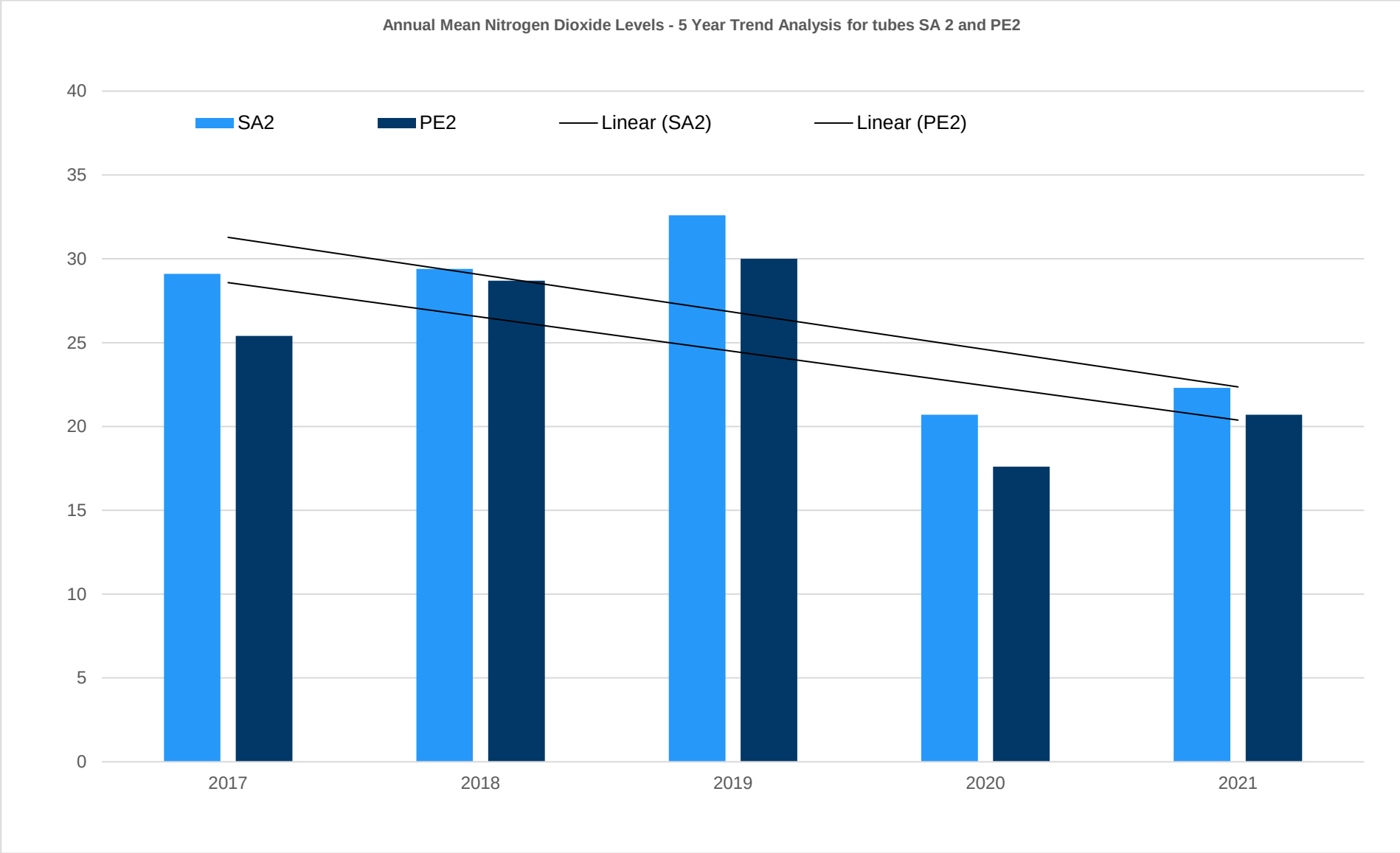
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(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 NO_2 Concentrations




Annual Mean Nitrogen Dioxide Levels - 5 Year Trend Analysis for tubes SA 2 and PE2
40
35
30
25
20
15
10
5
0
SA2
PE2
Linear (SA2)
Linear (PE2)
2017
2018
2019
2020
2021

Appendix B: Full Monthly Diffusion Tube Results for 2021

Table B.1 – NO_2 2021 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 (0.85)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
HA2	394776	309756	19.5	25.4	322	26.3	33.4	30.4	33.3	26.7	35.7	30.8		30.4	29.5	25.0	-	
PE1	392259	314020	27.0	27.0	20.0	16.5	17.6	16.6	17.9	16.6	25.3	23.0	22.9		20.9	17.8	-	
PE2	393177	313866	22.5	26.5	20.2	21.6	25.5	21.7	22.2	22.1	32.3	24.5	26.6	27.1	24.4	20.7	-	
SA2	396716	308742	33.4	27.8	23.3		21.7	20.2	21.7	21.7	28.7		34.1	30.2	26.3	22.3	-	
FA1	391191	307871	28.2	19.6	24.9	17.9	20.6	18.6	21.0	17.6	23.6	22.9	28.7	22.9	22.2	18.9	-	
COD1	387023	303197	18.7	16.4	14.7	17.0	14.0	11.6	11.8	9.9	17.2	13.5	17.2	16.6	14.9	12.7	-	
SCH1	397232	307107	18.7	18.6	16.3	12.9	14.0	13.2	13.7	11.8	18.3	16.3	21.6	17.4	16.1	13.7	-	
CH2	397983	307148	22.6	21.8	17.8	17.4	17.1	14.7	15.4	14.1	21.9	18.5	22.1	21.1	18.7	15.9	-	
FE1	394368	305411	21.3	25.5	22.3	23.0	27.5		24.4	21.5	31.1	23.3	28.6	25.6	24.9	21.2	-	
FE2	394451	305497	32.9		31.2	27.6	34.0	33.3	34.4	34.8	41.9	34.1	35.1	32.5	33.8	28.7	-	
COV1	391588	304602	37.8	31.6	28.2	16.2	29.1	22.2	23.9	20.5	34.2	32.0	31.9	32.9	28.4	24.1	-	
HUN1	397256	313004	19.0	19.8	16.6	13.4	16.0	12.7	15.9	10.4	21.6	15.8	20.2	21.9	16.9	14.4	-	
HUN2	397280	313058	21.3			14.2	17.0		27.5	13.7	19.8	17.3	18.1	20.8	18.9	16.0	-	
ES!	396312	303815	28.1	20.4	21.2	19.2	19.5	15.6	21.8	23.3				23.1	21.4	18.2	-	
PEN2	389597	303857	15.1		12.8	12.7	11.3	10.9	10.8	9.4	15.4	11.5	15.6	14.9	12.8	10.8	-	

☒ **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 >25% 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**

☒ **South Staffordshire Council confirm that all 2021 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

New or Changed Sources Identified Within South Staffordshire Council During 2021

South Staffordshire Council has not identified any new sources relating to air quality within the reporting year of 2021.

Additional Air Quality Works Undertaken by South Staffordshire Council During 2021

South Staffordshire Council has not completed any additional works within the reporting year of 2021.

QA/QC of Diffusion Tube Monitoring

As for previous years Staffordshire Scientific Services have prepared and analysed our tubes during 2021 and the method of preparation is 20% TEA in water.

NO_2 diffusion tube analysis QC results – April 2022 Summary for Staffordshire Scientific Services

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).

PT Rounds during 2021

- Round 42 – Feb 2021. 100% satisfactory results.
- Round 43 – June 2021. 100% satisfactory results.
- Round 45 – Aug 2021. 100% satisfactory results.
- Round 46 – Oct 2021. 100% satisfactory results.

A summary of our z-score results for 2021 can be found in the table below.

PT Round	z-scores	Performance
42- Feb 2021	-0.32, -1.08, -1.52, -0.42	100% SATISFACTORY
43 – June 2021	0.35, -0.15, 0.00, 0.32	100% SATISFACTORY
45 – Aug 2021	-0.34, 0.17, -0.03, 0.00	100% SATISFACTORY
46 – Oct 2021	-0.66,-1.24,-1.14,-0.06	100% SATISFACTORY

For the more information on the AIR PT Scheme and older results see the Defra website: https://laqm.defra.gov.uk/air-quality/air-quality-assessment/qa-qc-framework/

All monitoring was completed in adherence with the 2021 Diffusion Tube Monitoring Calendar.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within South Staffordshire Council recorded data capture of 75% or above therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualization of which there were none.

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2022 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/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

South Staffordshire Council have applied a national bias adjustment factor of 0.85 to the 2021 monitoring data. A summary of bias adjustment factors used by South Staffordshire Council over the past five years is presented in Table C.1.

The national bias adjustment factor was used on the tubes data as we no longer have triplicate tubes to use and contribute to the local adjustment. Those authorities using the same laboratory and technique to analyse the tubes we feel that this is the most appropriate choice. In bias adjustment factor was 0.85 was used from sheet 06/22.

Table C.1 – Bias Adjustment Factor

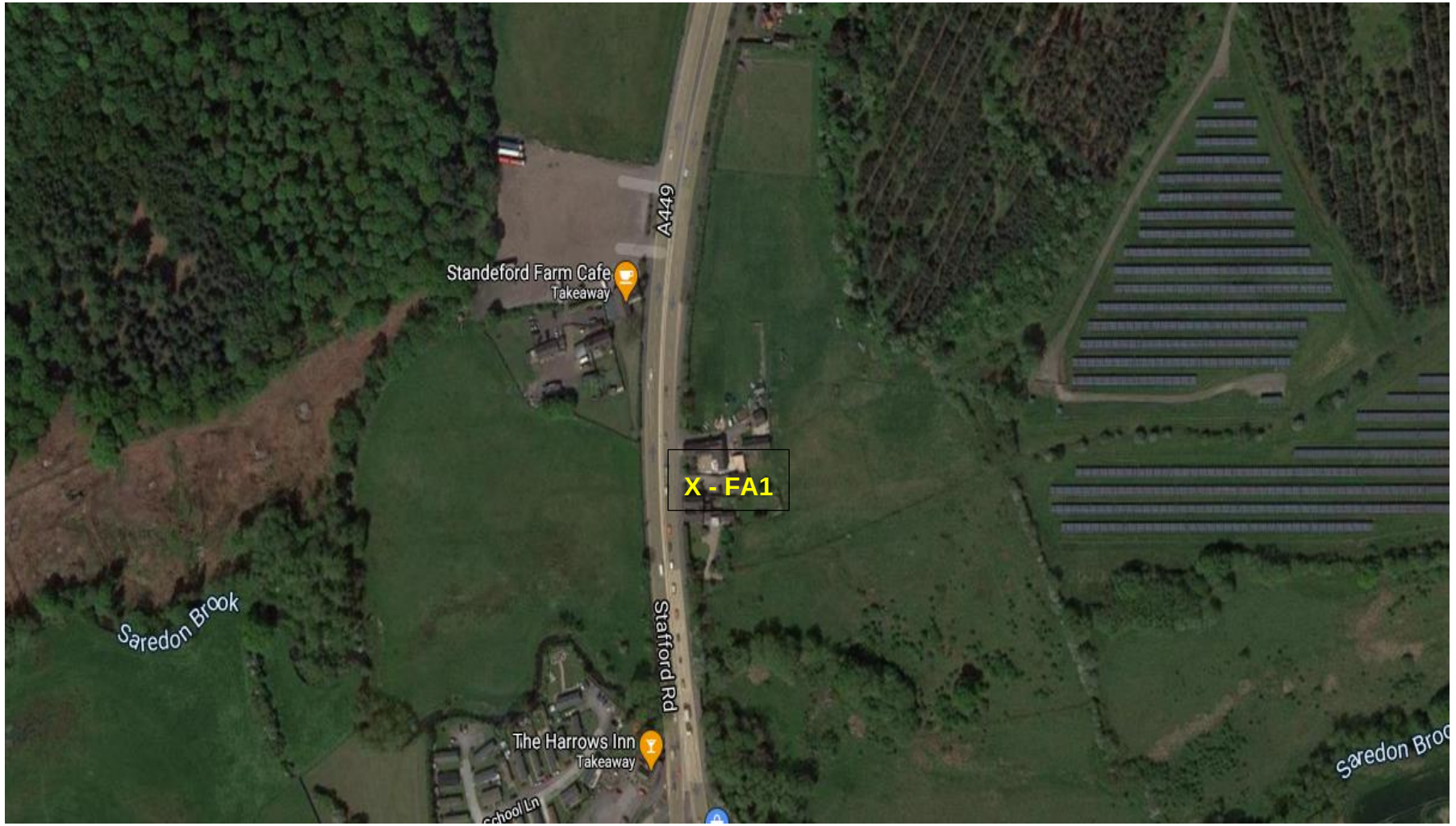
Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	National	06/22	0.85
2020	National	06/21	0.85
2019	National		0.93
2018	National		0.87
2017	National		0.88

NO_2 Fall-off with Distance from the Road

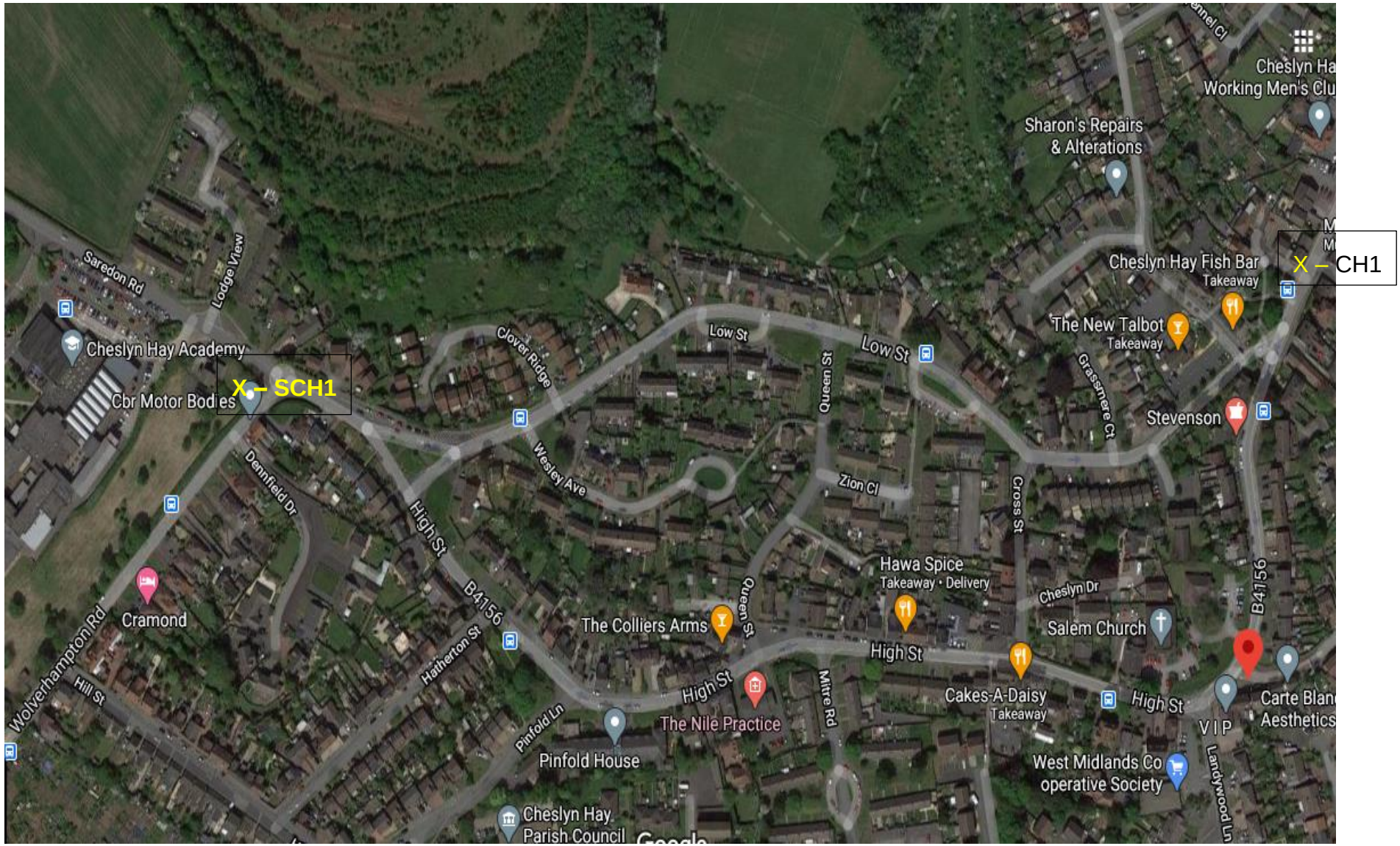
No diffusion tube NO_2 monitoring locations within South Staffordshire required distance correction during 2021.

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

Figure D.1 – Map of Non-Automatic Monitoring Sites




NHS Trust
Elliotts Ln
Wolverhampton Rd
Elliotts Ln
Histons Hill
X - COD1
Wolverhampton Rd
Histons Hill
Jonothan Bosworth
South Staffordshire Council
St Christopher's Church
Primrose Gardens
Trinity Church
Histons Hill
Google


X – CH1
X – SCH1
Cheslyn Hay Academy
Cbr Motor Bodies
Saredon Rd
Lodge View
Clover Ridge
Low St
Queen St
Grassmere Ct
Cheslyn Hay Fish Bar
Takeaway
The New Talbot
Takeaway
Stevenson
Sharon's Repairs & Alterations
Cheslyn Ha
Working Men's Clu
Dennfield Dr
Wesley Ave
Zion Cl
Cross St
High St
B4156
Hawa Spice
Takeaway · Delivery
Cheslyn Dr
Salem Church
Cramond
Wolverhampton Rd
Hill St
Hatherton St
The Colliers Arms
Queen St
High St
Cakes-A-Daisy
Takeaway
Mitre Rd
Pinfold Ln
Pinfold House
The Nile Practice
VIP
Carte Blan
Aesthetics
West Midlands Co
operative Society
Landywood Ln
Cheslyn Hay
Parish Council
Google


Crazy Craig's Skittle Alley
Cannock Rd
Post Office Travel Money
Park Rd
Monument Dr
Park Rd
New Rd
Shepwell Gardens
A460
X – FE2
Hilton Rd
New Rd
Dark Ln
X – FE1
Dark Ln
Dark Ln
W Winds
W Winds
Cannock Rd
Hilton Rd
Allan Smith School Of Motoring
Lower Lodge Hilton Park
Google


Wulfric Cl
Athelstan Cl
Wolgarston Way
X – PE2
Wulfric Cl
Wulfric Cl
B5012
M6
M6
M6
M6


Aero Taxis
The Dale Engineering
Wolverhampton R
A4601
X – SA2
Retro Hair


X – COV 1
Rollin Recreation
Heath Farm marina
andeejay events
The Homelands Park
A4510
M54
A449
Ball Ln
Meadow Ln
Club Ln
Total Construction Supplies
Porsche Centre Wolverhampton
Nuffield Health
Premier Inn Wolverhampton North
Scotbeef
Charter Court Financial Services
Taylor Wimpey North Midlands
Caterpillar
Bromford
Broadlands
Bushbury NG Substatio
Waterhead Brook
Innovation Dr
Brabourne Ave

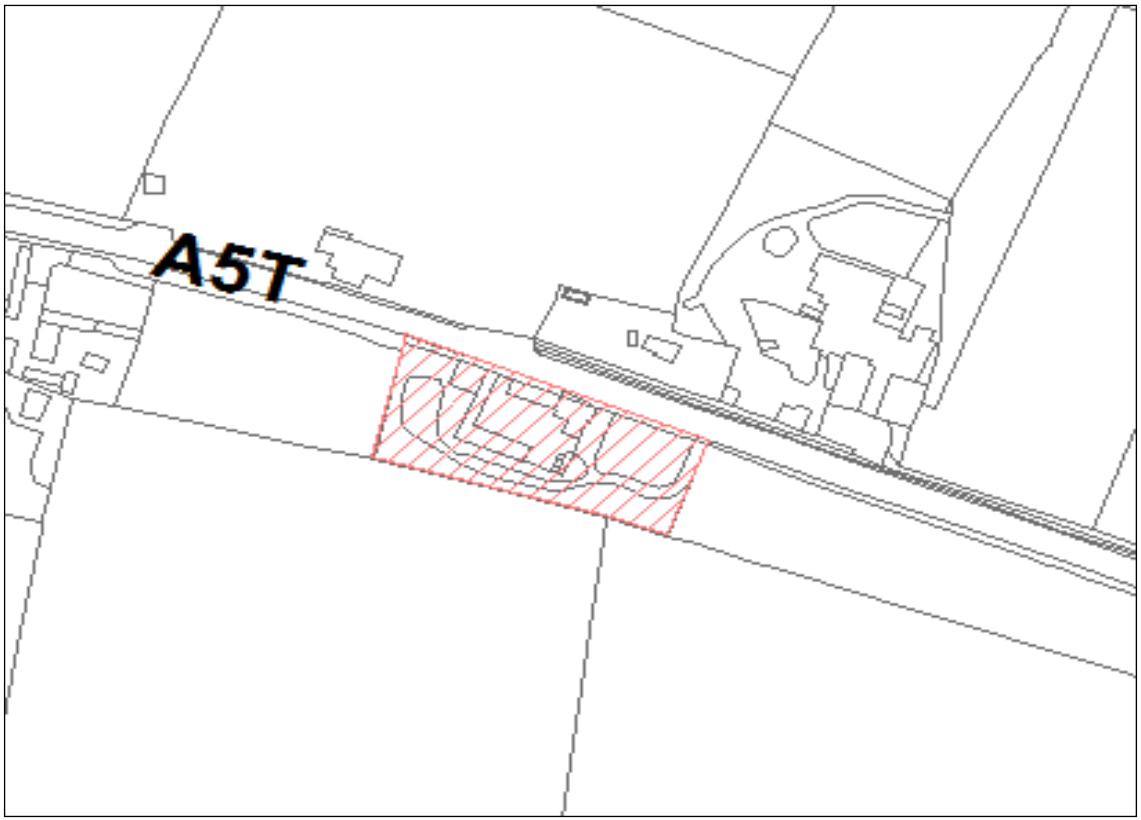

X – HUN 2
X – HUN 1
A & R Electronic Developments
N D L Bends
D L Motorcycles
Chase Alloys
The Barns Hotel
4.4 (857)
3-star hotel
Pub Car Park
Littleton Arms
Littleton Green Community School
Stafford Rd
A34
Woodstock Dr
Foxfields Way
Ashdale Cl
Raven Cl
Redwing Dr
Limepit Ln
Stag Dr


Shropshire Union Canal Main Line
River Penk
Pendeford Hall Ln
Pendeford Hall Ln
Pendeford Mill Nature Reserve
Lawn Ln
Pendeford Hall Residential Park
X - PEN1
Jaguar Land Rover Engine...
Wobaston Rd
Wobaston Rd
Wobaston Rd
Wobaston Rd
Wobaston Rd
Pendeford Business Park
Lloyds Banking Group
Future Stars Football Coaching


St Michael's Cl
St Michael's Rd
A449
Chestnut Grove
Nelly's Nursery
St Michael's Cl
St Michael's Rd
Wolverhampton Rd
X – PE1
Stickler Vapes
Fashion accessories shop
St Michael's Rd
Croydon Dr
Pencric
Edgar's Restaurant & Bar
Amethyst Holistic Therapies
Tildesley Cl
Croydon Dr
St Michael's Cl


X – ES 1
Services
Supplies
St John's Primary
Academy, Essington
Hobnock Rd
B4156
Aspen Rd
M6
M54
Mobile Vehicle Services
Bognop Rd
Platiun Tyres
Royal Mail Post Box
Essington Park
Essington Parish Council
Hawthornes Chemists
Essington Medical Centre
Charles Ave
EDT
Hawthorne Rd
Oak Tree Dr
Aspen Rd


Roadking: Cannock
Takeaway
A5
Oak Farm
X – HA2
Watling St
AS 24
JW Car Finance
Used car dealer
A5



AQMA No.5 – Oak Farm, Hatherton

This area is located along the A5 between junction 12 of the M6 and Cannock.

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).

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 National Highways
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.