Public Summary - 2021 Air Quality Annual Status Report (ASR)

(The full report for 2021 and previous year's reports can be found on our website at www.newcastle-staffs.gov.uk/airquality.)

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

Date: May 2022

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Foreword from the Director of Health and 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.

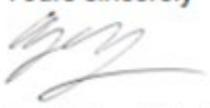
As Director of Health and Care across Staffordshire I endorse this Annual Status Report which sets out the position in all the Local Authorities across Staffordshire and Stoke-on-Trent.

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.

Yours sincerely



Dr Richard Harling MBE
Director of Health & Care

Executive Summary: Air Quality in Our Area

Air Quality in Newcastle under Lyme 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).

The main pollutant of concern in the Borough is nitrogen dioxide (NO_2). Nitrogen Dioxide (NO_2) is one of a group of highly reactive gases known as oxides of nitrogen or nitrogen oxides (NO_x). Nitrogen Oxides are released into the atmosphere when fossil fuels (coal, natural gas, and petroleum) are used in power stations, area heating and vehicle engines.

NOx emissions from burning fossil fuels are mainly released as nitric oxide (NO), although some sources can release a substantial amount of NOx as NO_2. Reactions in the atmosphere can subsequently turn NO into NO_2.

Breathing air with high concentrations of NO_2 can irritate and inflame the airways and lungs, with those suffering with respiratory diseases such as asthma being particularly affected.

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

Road transport is the largest source of NO_2 emissions in the UK and is the major contributor to concentrations within the Borough. Strict European standards require emissions from vehicles to improve over time. This is achieved by improvements in engine design and fitting three way catalysts to road vehicles. The role that road transport plays in air quality is greater within urban areas.

The Borough of Newcastle under Lyme is located in North Staffordshire, with the town of Newcastle being the major urban area, together with the smaller town of Kidsgrove. Covering an area of 21,096 hectares (81 square miles) the Borough has a population of 129,600. The Borough is in a strategic location between roads running north from London to Carlisle, and west to Chester. Two major trunk roads pass through the Borough, along with a number of major roads which converge on the two main towns of Newcastle, and Kidsgrove;

- The M6, which is currently one of the most heavily trafficked and congested roads in the country
- The A500, a major road linking Newcastle under Lyme and Stoke on Trent with junctions 15 and 16 of the M6. These motorway junctions are adjacent to the Borough's boundary and so contribute to traffic congestion in the area.
- A34, A52, A525, A523 and A53 pass through Newcastle
- A50, A5011 and A34 pass through Kidsgrove

A high proportion of traffic travels into/through the four Air Quality Management Areas (AQMAs) within the Borough which have been declared for Nitrogen dioxide (NO_2), these are;

- AQMA 1: Liverpool Road, Kidsgrove
- AQMA 2: Newcastle-under-Lyme Town Centre
- AQMA 3: Maybank-Wolstanton-Porthill
- AQMA 4: Little Madeley

Road traffic is the most significant source of pollution to the Borough; however, other sources include industrial and domestic emissions. Certain industries (Permitted Processes) are regulated by the Borough Council in accordance with the Environmental Permitting (England and Wales) Regulations 2016 (5). Currently there

5 The Environmental Permitting (England and Wales) Regulations 2016 (legislation.gov.uk)

are 43 Part B processes and 3 Part A2 processes within the Borough. The Environmental Permits for processes regulated by the Borough Council can be found on the Public Register 6.

The Environment Agency is responsible for the regulation of Part A processes, also under the Environmental Permitting (England and Wales) Regulations 2016. One of the Part A process within the borough is a landfill. Over the past 12 months, intensive work has been carried out by the Borough in conjunction with the Environment Agency, UK Health Security Agency, and Staffordshire County Council Public Health, to investigate complaints concerning gaseous emissions from this landfill, situated approximately 1.3 Kilometres outside of AQMA 2: Newcastle-under-Lyme Town Centre.

Complaints relating to odours from the site have been received from properties across the Borough. Although methane is the primary component of landfill gas, a number of other compounds, including nitric oxides are associated with the breakdown of waste substances. The Environmental Permits for processes regulated by the Environment Agency can be found on the Public Register (7).

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 (8) sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero (9) 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.

6 https://www.newcastle-staffs.gov.uk/protection/environmental-permit

7 Public registers (data.gov.uk)

8 Defra. Clean Air Strategy, 2019

9 DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

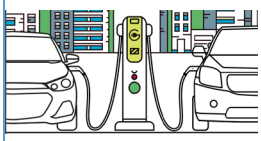
Pollutant concentrations in all areas were lower than in previous years, due to some extent to the Government's enforced travel restrictions in response to the Covid-19 pandemic. Vehicle miles travelled on Great Britain's road decreased by 21.3% in 2020 compared to the previous year (10). The reduction in traffic movement had a dramatic impact on the NO_2 concentrations for this period and is shown in lower than previous monitored concentrations across the Borough. Therefore, monitoring data should be treated with caution, as it may not be representative of concentrations when traffic return to more normal numbers.

Local actions to improve air quality

PROJECT	ACTION	OUTCOME/ IMPACT
 **Ministerial Direction number 1. Mandating compliance with the EU's $N0_2$ annual mean limit value (which applies to the majority of areas which are publicly accessible) in the shortest possible time for the A53 from Basford Bank to Victoria Street**	An options appraisal to achieve compliance with the EU's $N0_2$ annual mean limit value (which applies to the majority of areas which are publicly accessible) in the shortest possible time, has identified that a traffic management scheme involving bus gate restrictions at peak times of the day would achieve compliance in the shortest possible time when compared to a benchmark Clean Air Zone. This together with measures in the neighbouring city of Stoke on Trent form the basis of the North Staffordshire Local Air Quality Plan	A full business case is to be prepared for submission to the DEFRA minister by Summer 2022. Subject to acceptance, it is anticipated that the bus gate and associated measures will be in place early in 2023. For up-to-date information on progress with the associated North Staffordshire Local Air Quality Plan Click here

10 Road Traffic Estimates in Great Britain: 2020 (publishing.service.gov.uk)

PROJECT	ACTION	OUTCOME/ IMPACT
Ministerial Direction number 2. Mandating compliance with the EU's $N0_2$ annual mean limit value (which applies to the majority of areas which are publicly accessible) in the shortest possible time for the A53 from Basford Bank to Victoria Street– by a bus retrofit scheme requiring the upgrade of buses to Euro IV emissions standard by winter 2020 (NULBC lead)	Works have been completed to 23 buses with CVRAS accredited exhaust abatement technology and replacement of hydraulic fans with electrical systems	Modelling shows that this will result in a reduction of 1µg/m^3 of NO_2 along the A53 and wider route. Monitoring to continue for 5 years to evaluate impact. Emissions likely to be greater impacted by Covid-19 related restrictions and reductions on private vehicle use due to working from home. Click here

PROJECT	ACTION	OUTCOME/ IMPACT
 **Low / zero emission taxi infrastructure charging scheme**	In progress. Sites being evaluated for suitability for installation of rapid charging infrastructure for both public and taxi / P.H.V. use	A contractor has been appointed to undertake the installation and operation of a network of EV charging infrastructure under a ten year concession. Planned installation and operation by spring 2022. Drivers will also be able to access sites in the Stafford Borough and Stoke-on-Trent City Council areas under this joint project. There will be engagement with the taxi and P.H.V. trade to promote EV's during the life of the concession. For further information Click here
Air Aware' initiative	In progress. This project is being delivered by Staffordshire County Council with the support of District Council's	Developments and further information can be found at For further information Click here
ADEPT -Simulate Live Labs' Air Labs Sensors around Newcastle Town Centre Ring Road	Sensors are to be trialled for 12 months around the 'Belong' Care Home on Lower Street, which historically has been the site of the highest exceedances of the NO_2 annual mean objective.	Sensor data is providing a detailed picture on traffic flows and meteorological conditions influence vehicle emissions around the ring road at relatively little cost. The scheme is set to run until Autumn 2021

PROJECT	ACTION	OUTCOME/ IMPACT
	Sensors will also be installed around the ring road.	For further information Click here
ADEPT -Simulate Live Labs' Active Green Wall on boundary of playground at Hassell Street County Primary	A living Green Wall with Active Airflow is to be installed along the perimeter of the early year's playground. Emissions either side will be measured to evaluate effectiveness	The early evidence from the Live Lab programme suggests that using plants in locations such as buildings and public spaces adjacent to main roads, train stations and construction sites, has the potential to make a noticeable difference to the quality of air. For further information Click here
 **DFT supported Electric scooter trial for hire at various sites**	Installed and in use, although COVID-19 pandemic has impacted upon uptake by members of the public	Trial hire scheme in selected areas of the Borough involving 110 e-scooters provided by Zwings Scooters, initially set to run from September 2020 to Summer 2021. For further information Click here
HS2 **Continued Engagement with HS2 Ltd and contractors re design, build and operation of HS2 Phase 2a**	Borough Council Environmental Health staff continue to engage with HS2 Ltd and its contractors to ensure that the environmental health related effects of the scheme (air quality, noise, land contamination, light) as it passes through the Borough	HS2 have committed to best practice in the management of environmental health effects and is committed to not causing any exceedances of Air Quality Standards. The Council will continue to actively engage with HS2 during all phases leading to

PROJECT	ACTION	OUTCOME/ IMPACT
	are fully considered and assessed	the operation of the railway within the Borough.

Conclusions and Priorities

Monitoring data for 2020 shows that all annual mean concentrations were below the annual mean objective. However, this is due in part to reduced traffic numbers during Covid-19 travel restrictions. Monitoring will continue in all areas of the Borough to assess whether concentrations remain below the objective, once traffic numbers return to normal.

In addition to working to bring concentrations below the annual objective in all areas of the Borough, we will continue to assess planning applications to ensure that future developments and changes to the road networks across the Borough do not lead to an increase in the NO_2 concentration above the annual mean objective of 40µg/m^3,

Conclusion Summary

	CONCLUSIONS	SUMMARY
1	No exceedances within or outside of existing AQMAs	There were no exceedances in 2020, but this should be treated with caution. Traffic emissions were significantly reduced due to Covid-19 travel restrictions, leading to lower monitored concentrations.
2	Significant trends	AQMA 1: Liverpool Road, Kidsgrove – no clear trend. Five years of results less than 10% of the UK objective not yet achieved. Monitoring will continue. AQMA 2: Newcastle-under-Lyme Town Centre – no clear trend. Five years of results

		less than 10% of the UK objective not yet achieved. Monitoring will continue. AQMA 3: Maybank-Wolstanton-Porthill - no clear trend. Five years of results less than 10% of the UK objective not yet achieved. Monitoring will continue. AQMA 4: Little Madeley – downward trend. All monitoring below the objective for 5 consecutive years (2015-2019). AQMA can be revoked.
3	Revoking of AQMA 4: Little Madeley	Monitoring data for the five years 2015 to 2019, shows concentrations below 36 µg/m³ (10% of the objective). A downward trend is shown during that period. Therefore, AQMA 4: Little Madeley can be revoked.
4	Review AQMA 3: Maybank-Wolstanton-Porthill	NO_2 concentrations within this AQMA for years 2016 to 2019 have been below 36µg/m^3 at five of the six long-term monitoring sites. We propose to keep this AQMA in operation to assess the effects of the Etruria Valley Link Road and the impacts of the measures introduced to bring about compliance with the NO_2 annual mean limit value on the A53 in Newcastle-under-Lyme.
6	Exceedances of air quality objectives outside any existing AQMAs, which have led to the	None identified in 2020.

	amendment or designation of a new AQMA	
7	New developments which may impact upon air quality	None identified in 2020
8	Air Quality Action Plan update	Will require updating following the revocation of AQMA 4: Little Madeley

Local Engagement and How to get Involved

If residents and businesses reduce the amount of fuel and chemicals used, it will improve air quality. The following ways can help:

Commute

- Visit Air Aware Staffordshire which includes;
    - Bulletins for inspiration and information on ways and initiatives to reduce pollution from travelling,
    - Leaving the car at home one day a week. Further information can be found at www.staffssaferroads.co.uk/
    - Turning off car engines when vehicle is idle
    - Consider car sharing your journey further guidance can be found at https://liftshare.com/uk
    - Using a low/ zero carbon vehicle
    - Servicing vehicles
    - Working from home
    - Using public transport Travel planning APP's are available for most smart phones. Further details can be found at https://www.travelsmartapp.com/
    - Consider an electric vehicle

School Run

- Walking or cycling to school is not only good for health but it will save on fuel costs and help reduce local air pollution. Further guidance can be found within Travel into School https://www.staffordshire.gov.uk/Education/Schooltransport/Active-school-travel/Travelling-into-School.aspx
- Take turns with friends, neighbours or family to drive or walk the children to school. Check whether your school has a travel plan.

Workplace energy, transport and infrastructure

Bespoke workplace travelling plans to support employees and employers to use more environmentally sustainable methods of travel into work and use of vehicles for work. For further information visit https://www.staffordshire.gov.uk/Business/Workplace-health/Active-travel-and-air-quality-in-the-workplace.aspx

Grants may be available to support your business in becoming more energy efficient and towards the purchase of cleaner vehicles and support with charging infrastructure. Further information can be found from the following and also your energy supplier;

https://www.gov.uk/government/organisations/office-for-low-emission-vehicles

https://energysavingtrust.org.uk/

https://sben.co.uk/

Around The Home

- Use water-based or low solvent paints, glues, varnishes and wood preservatives, look for brands with a low VOC content.
- Make sure your home is well ventilated especially during DIY or cleaning.
- Have your central heating system checked regularly to avoid risking exposure to toxic carbon monoxide. Make sure you use a Gas Safe Registered engineer.
- Keep wood stoves and fireplaces well maintained, and make sure that wood burners are exempted for use in smoke control areas. Visit https://uk-air.defra.gov.uk/library/burnbetter/ for advice.

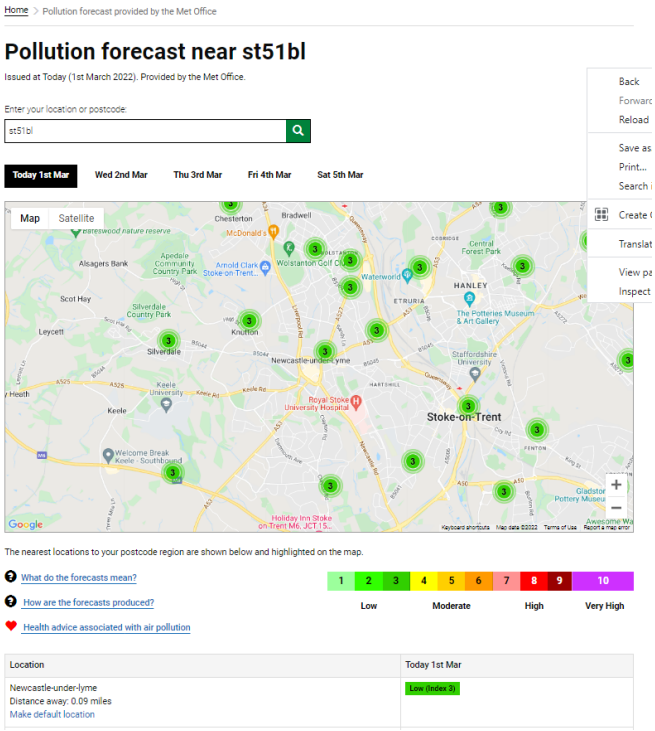
✓ Ready to use wood bought from a Woodsure Certified Supplier, will offer the following benefits:

- Dry, Ready to Burn wood/logs & briquettes make any appliance more efficient. Look for the Woodsure logo.
- Burning dry wood instead of wet wood is part of the solution to reducing the impact on our environment.
- Burning wet wood increases emissions and has a greater impact on air quality.
- Any appliance and chimney system will suffer from smoke produced from wet wood, which increases maintenance and repair requirements, making it harder for chimney sweeps to keep systems in safe, effective condition.
- Burning waste and treated wood (e.g. old furniture) can emit harmful

✓ Be energy efficient- make sure your house is well insulated and use energy efficient appliances. Your energy supplier may offer grants to insulate your home. Staffordshire County Council currently offers targeted grants. To make you home warmer and more energy efficient

https://www.staffordshire.gov.uk/Warmer-Homes/Staffordshire-Warmer-Homes.aspx

- ✓ Purchase "Green Power" for the electricity in your home. (Contact your energy supplier or Staffordshire Warmer Homes)
- ✓ Avoid using bonfires to dispose of waste and never burn household waste, especially plastics, rubber and treated timber. See our webpages for advice on recycling, household rubbish and garden waste.
- ✓ Before organising days out, check the DEFRA air pollution forecast



For general information and air quality forecasts, Defra provide information at the following website: https://uk-air.defra.gov.uk. Forecasting uses a user-friendly index band to quickly demonstrate general short term air levels in a localised area, and supplements this with advice for 'at risk individuals' and the general public.

Newcastle-under- Lyme Borough Council's air quality reports and action plan documents are accessible from the following link https://www.newcastle-staffs.gov.uk/airquality

For enquires or suggestions on how to improve air quality please feel free to contact us:

Write to:	The Environmental Protection Team, Newcastle-under- Lyme Borough Council

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Barracks Road
Newcastle under Lyme
ST5 1BL
Email: environmental_health@newcastle-staffs.gov.uk
Telephone: 01782 717717