Bath and North East Somerset (BaNES) Air Quality Monitoring State 2 2021 Summary

This is a summary of the State 2 assessment for BaNES, a checkpoint that the local authority progresses through as part of Exiting the NO_2 Programme. The information is gathered from monitoring data throughout 2021 and across historical years 2019 – 2020.

If a local authority has no air quality monitors that register an exceedance of the annual mean NO_2 limit value of 40 µg/m3 at valid locations within the geographical extent of their Clean Air Plan, that local authority will be said to 'have achieved success' and will pass the State 2 assessment.

All monitoring sites which meet the Air Quality Standards Regulations 2010 (AQSR) siting criteria and data capture requirements are valid locations. Where this is not available at key locations (where there is either a modelled concentration above the limit value in the local plan do-minimum scenario or a monitored concentration above the limit value), results from other monitoring sites which do not meet these criteria may be considered as valid locations subject to certain requirements. This ensures that the assessment is based on the best available evidence.

Roads that are part of the strategic road network (SRN), are not covered by this assessment. National Highways and JAQU engage directly regarding any exceedances on the SRN.

Summary

Bath and North East Somerset has passed State 2 in 2021.

- There were no exceedances of the annual mean NO_2 limit value observed across all locations considered by the assessment.
- The assessment considers local measurement sites owned by the local authority and measurements from Defra's national monitoring networks (UK Urban NO_2 Network (UUNN) and the Automatic Urban and Rural Network (AURN)), that are in the geographical extent of their Clean Air Plan. Sites used to inform this assessment are shown in Figure 1.

Trends

The average reduction in annual mean NO_2 concentration across all 121 local measurement diffusion tube sites between 2019 and 2021 was 22%.

The largest observed decrease in concentration during this period was 16.4 µg/m^3 at DT090 Anglo Terrace.

An increase in concentration was not observed at any sites during this period.

Uncertainty

An uncertainty assessment is included to highlight the level of confidence JAQU have in the findings of the assessment. The uncertainty is ranked as LOW. The main contributing factors to this are:

- Good availability of monitoring which meets AQSR requirements at key locations.
- Use of triplicate diffusion tubes at key sites.

Risk of Future Exceedances

A risk assessment is included to highlight the level of confidence JAQU have in the local authority passing the assessment in the following calendar year.

The risk of an exceedance in the following year (2022) is ranked as HIGH. The main contributing factors to this are:

- Reduction in traffic in the first part of 2021 due to Covid-19 impacts meaning that increased traffic may be observed in later years, leading to higher roadside NO_2 concentrations.
- The closure of Cleveland Bridge throughout a period of 2021 affecting routing in and around the city, reducing road traffic on certain routes and therefore potentially supressing the roadside NO_2 concentrations that were observed. Cleveland Bridge reopened with an 18-tonne weight limit in October 2022.
- 2021 annual mean NO_2 measurements recorded within 10% of the limit value.

Additional Observations

In 2021 there were 2 sites that measured annual average NO_2 concentrations above the limit value at local measurement sites that are not considered by the assessment. These sites are out of scope either due to the presence of more robust monitoring data, or because these monitors do not meet certain AQSR siting conditions. Such sites are considered by Local Air Quality Management (LAQM) which has a different remit to the NO_2 Programme. These sites are within existing Air Quality Management Areas.

In 2021 there were 7 sites that were within 10% (4µg/m^3) of the limit value. If concentrations at these sites increase in a later year, it is possible that the local authority will have exceedances in that year. These sites are shown in Figure 2.

Actions

The local authority is requested to:

- Continue monitoring at sites which have been identified as exceeding, or recorded a value within 10% of the limit, and report these results to JAQU in all data submissions for 2022 measurements.
- Review and update the original model from plan development prior to any further modelling undertaken as part of Exiting the NO_2 Programme.

Figure 1: Monitoring locations used to inform this assessment, shown by 2021 annual average NO_2 concentration in $\mu g/m^3$.

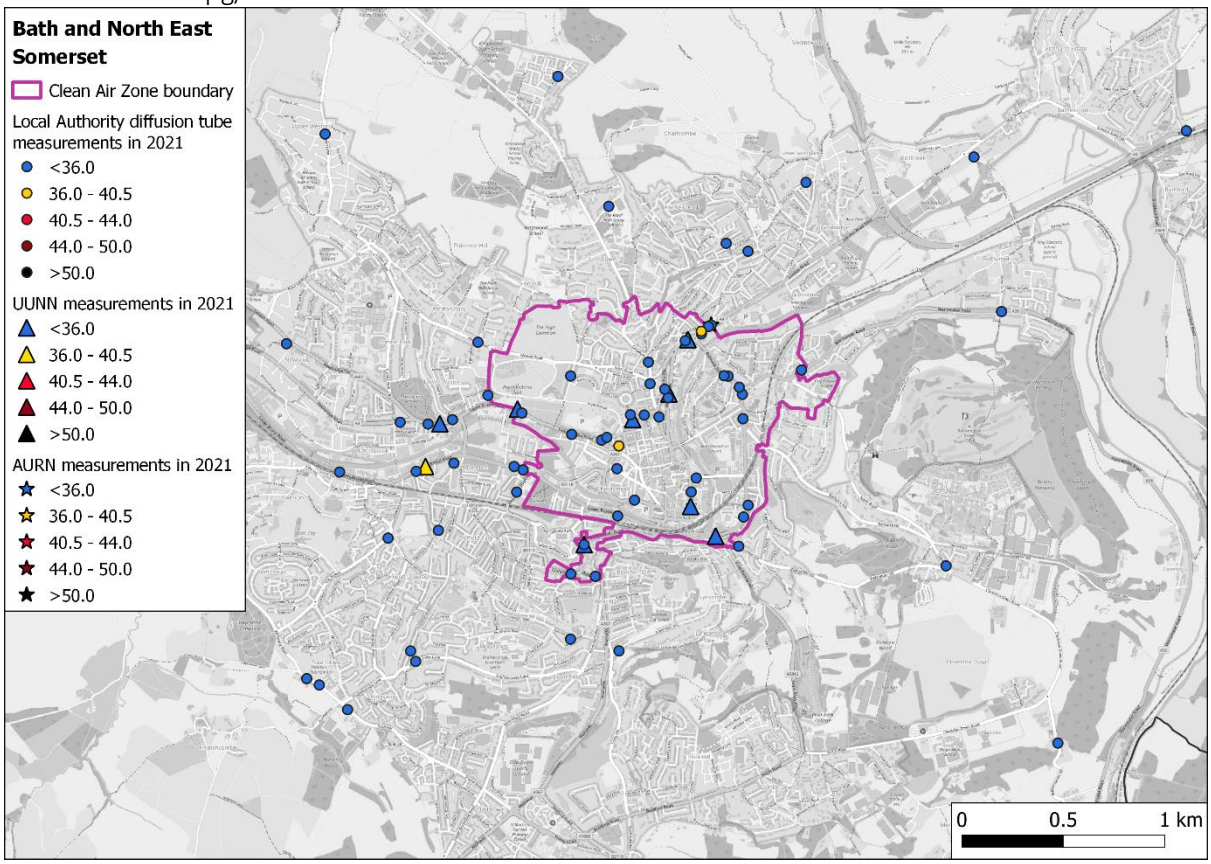

Figure 2: Monitoring locations within 10% of the limit value, labelled with 2021 annual average NO_2 concentrations in $\mu g/m^3$. 2 of these sites do comply with AQSR siting criteria (marked). The others do not.