Bath and North East Somerset State 3 2022 Summary

This is a summary of the State 3 assessment for Bath and North East Somerset (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 2022 and across historical years 2019 to 2021.

If, for a second consecutive year (following a successful State 2 assessment) a local authority has no monitors that register an exceedance of the annual mean NO_2 limit value of 40 µg/m^3 at valid locations within the geographical extent of their Clean Air Plan, that local authority will be said to 'have maintained success' and will pass the State 3 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

The local authority has passed State 3 in 2022.

- 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 and in addition all 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.
- Some non-AQSR measurements were used to inform this assessment as this was the best available evidence in key locations at the time.

Trends

The average reduction in annual mean NO_2 concentration across all 125 local measurement diffusion tube sites between 2019 and 2022 was 27%.

The largest observed decrease in concentration during this period was 18.0 µg/m^3 at site ID DT230 – Upper Bristol Road 4.

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 this assessment.

The uncertainty is ranked as MEDIUM. The main contributing factors to this are:

- Two new air quality monitoring locations which, while not capturing a whole year of data in 2022, recorded annual average NO_2 concentrations of 38.0 µg/m^3 and 40.4 µg/m^3.
- One valid air quality monitoring location which recorded a concentration within 10% of the limit value.

Risk of Future Exceedances

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

The risk of exceedance in future years is ranked as HIGH. The main contributing factors to this are:

- Air quality monitoring locations identified within 10% of the limit value, including three which are likely to be affected by increased traffic following the reopening of Cleveland Bridge in October 2022.
- Wider traffic data which suggest that stronger traffic growth in 2023, combined with a less clean fleet than predicted, could result in a rise in concentrations.

Additional observations

In 2022 there was 1 air quality monitoring site that measured an annual average concentration above the limit value at a local measurement site that is not considered by the assessment. This site is outside the scope of the Clean Air Plan, as at more than 10km from the edge of the CAZ it is outside of the area modelled during plan development. Such sites are considered by Local Air Quality Management (LAQM) which has a different remit to the NO_2 Programme. This site is within an existing Air Quality Management Area.

In 2022 there were 5 air quality monitoring sites that were within 10% (4 µg/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:

- Proceed with modelling to support a State 4 assessment, in line with guidance on Exiting the NO_2 Programme.
- Continue to monitor at the 'At Risk' air quality sites identified close to Cleveland Bridge in 2023 and include results alongside State 4 work.
- Continue providing monitoring data to JAQU in line with guidance on Exiting the NO_2 Programme.

Figure 1: Monitoring locations used to inform this assessment, shown by 2022 annual average NO_2 concentration in µg/m^3.

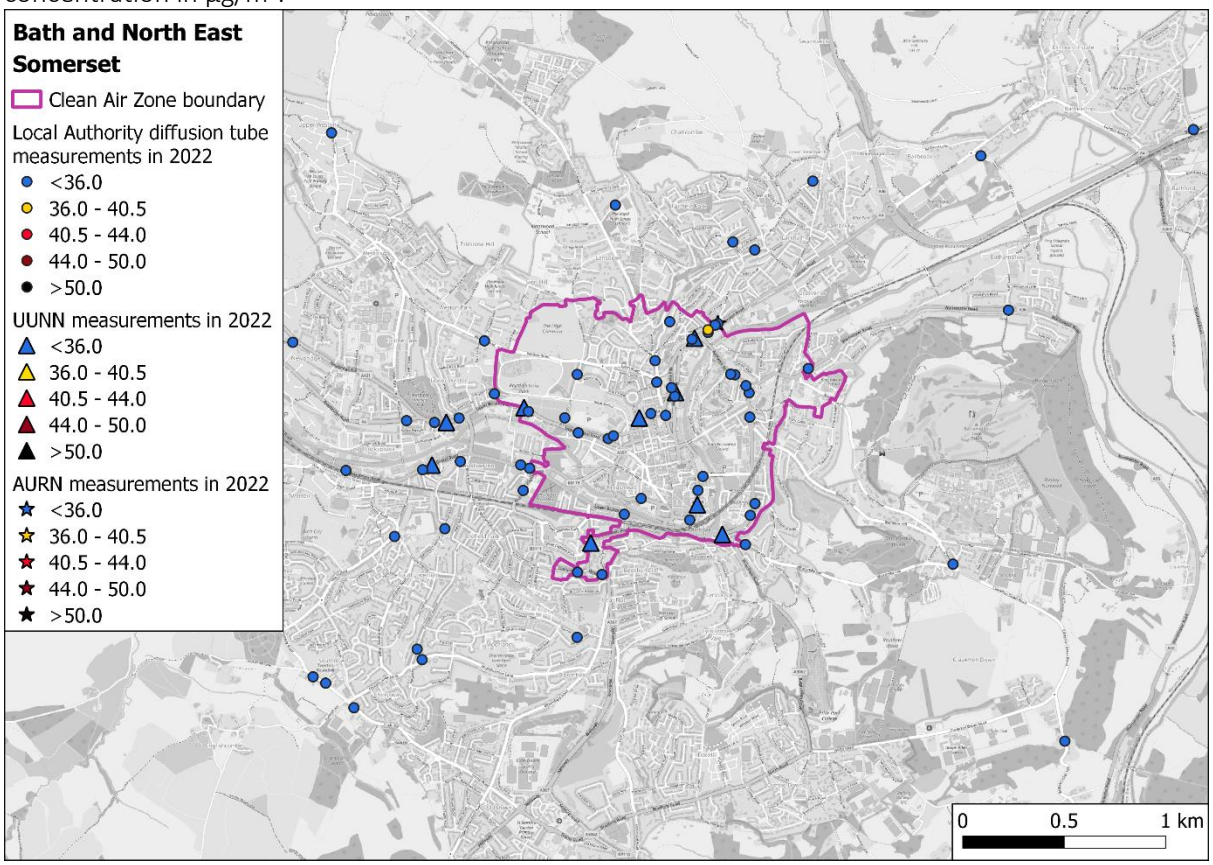

Figure 2: Monitoring locations within 10% of the limit value, labelled with 2022 annual average NO_2 concentrations in $\mu g/m^3$. One of these sites does comply with all AQSR criteria (marked). The others do not.