

Local Authority:	Spelthorne Borough Council
Reference:	AQAP24-2460
Date of issue	October 2024

Air Quality Action Plan Appraisal Report

The Air Quality Action Plan (AQAP) sets out information on air quality obtained by Spelthorne Borough Council (SBC) as part of the Review & Assessment process required under the Environment Act 1995 (as amended by the Environment Act 2021) and subsequent Regulations.

The Draft AQAP was submitted by SBC in April 2024 (ASR24-2105). The Draft AQAP was accepted, on the proviso that recommended improvements were made in the final version. The improvements were primarily surrounding This appraisal report covers the Final AQAP prepared in response to appraisal of the Draft. The Final AQAP does not include any new source apportionment or modelling work, nor any new measures. However, an assessment to quantify air quality benefits and overall cost-benefit has now been incorporated.

The AQAP sets out actions to improve air quality in SBC between 2024 and 2029, superseding the previous AQAP which ran from 2005. An Air Quality Management Area (AQMA) was declared in 2003 encompassing the entire borough due to exceedances of the annual mean NO₂ objective. However, in 2024 SBC submitted the amendment to reduce the AQMA size to cover the major roads and urban areas of the borough only, to reflect where hotspots now occur.

An outline of current air quality in SBC has been provided, though data is only reported in a Figure. The monitoring data has been updated to reflect more recent 2023 concentrations, which reports no exceedances of the annual mean NO₂ objective, with all sites below 10% of the objective. This appears to be an improvement on 2022 where there was one monitoring site which recorded a concentration above the annual mean NO₂ objective in the AQMA in 2022, occurring on a major road leading to Heathrow and the M25, although it should be noted the monitoring site is not located at relevant exposure. The distance corrected concentration for this monitoring site is not provided.

The AQAP considers the public health context, citing long-term exposure to man-made air pollution in the UK has an annual impact on shortening lifespans, equivalent to 28,000 to 36,000 deaths. The Public Health Outcomes Framework has been referenced, with the indicator of fractional mortality attributable to particulate matter in SBC quoted at 6.8%, which is above the Surrey and national values. SBC intends to have the AQAP complement County level work on a Joint Strategy Needs Assessment and a Health and Wellbeing Strategy for Surrey. A Diversity and Equality Impact Assessment has been submitted alongside the AQAP.

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SBC have briefly discussed their current Local Plan from 2009; a 2022 to 2037 draft local plan is in progress which will include policies for climate emergency and designing places, as well as policy E4 which directly mentions air quality, requiring developments to be assessed for air quality and be 'air quality neutral'. Other relevant planning and policy documents have been outlined, including the Climate Change Strategy and Action Plan, Local Transport Plan and Electric Vehicle Infrastructure Plan. The Final AQAP includes an additional discussion of the SBC Corporate Plan 2024 – 2028, which includes environment as a key strategic priority.

SBC have discussed Heathrow's Sustainable Growth Strategy – Heathrow 2.0. The airport is not within the borough boundaries, but SBC continues to engage with Heathrow on air quality concerns via membership of the Council for the Independent Scrutiny of Heathrow Airport (CISHA) Air Quality Working Group.

The AQAP discusses two source apportionment exercises relevant to SBC. The most recent study was undertaken in 2022 to support the AQAP, considering NO_x at three worst-case receptors in six study areas within SBC based on 2019 data. The study areas are Sunbury, Staines, Georgian Close, Ashford, Lower Halliford – Shepperton and Moor Lane. The source apportionment generally found the largest proportion of NO_x is background concentrations, ranging from 30% - 68%. The methodology to determine the contribution of background sources is not discussed in detail within the AQAP, but a link is provided to the SBC website which includes the original report. The methodology of source apportionment is considered suitable. Of road NO_x emissions, diesel cars were generally the largest contributors.

The year of estimated compliance is given for the individual study areas. Five of the six areas are calculated to be compliant in 2022 or prior from the 2019 base. This appears to generally align with monitoring data. The discussion of the remaining Moor Lane study area indicates there remains an exceedance at a residential receptor in 2019, though it is not clear when compliance is predicted to be achieved here with or without measures from the action plan.

SBC also discusses earlier CERC work conducted in 2019 on a base year of 2017 as part of a wider modelling study across Surrey, which included a source apportionment exercise. This work indicates that at most roadside monitoring sites, road traffic is the largest source of NO_x emissions. Of this, diesel cars are on average the greatest contributor (38%) followed by LGVs (35%). The CERC study also considered source apportionment of particulate matter emissions, which SBC have summarised, reporting backgrounds contributing 75% of PM_{2.5} concentrations.

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The Final AQAP has added discussion of source apportionment of emissions from Heathrow, based on Defra mapped backgrounds. NO_x emissions from airport sources are estimated to contribute <20% of background concentrations for most of SBC, with areas adjacent to Heathrow ranging from 20-50%.

The required reduction in NO_x emissions to meet air quality objectives has not been calculated as the source apportionment modelling calculates compliance to already be achieved in 2022. SBC states this is supported by monitoring data which shows only one site above 40 µg/m³, but only prior to distance correction. The distance corrected concentration is not provided. It is acknowledged that 2023 monitoring data supports compliance is achieved widely across SBC.

Five priorities have been outlined which are integrated into the development of the measures within the AQAP:

1. Priority 1 – to maintain air pollutant concentrations below current air quality objectives and where practicable, reduce emissions further to work towards WHO Guideline Values;
2. Priority 2 - to work collaboratively with SCC to ensure that wider transport measures are delivered, in particular to increase the use of active travel and public transport and reduce the use of private vehicles, and to increase the proportions of low and zero emission vehicles where modal shift is not feasible;
3. Priority 3 – work collaboratively with Heathrow Airport Ltd to address emissions associated with the airport operations;
4. Priority 4 – to work collaboratively within SBC, across Surrey, with neighbouring London Boroughs and with wider stakeholders such as national Highways and the Environment Agency to reduce emissions of particulates and NO_x from a range of sources within and out with the borough; and
5. Priority 5 – report on an annual basis to Defra the implementation of the measures set out in this report, as well as monitored concentrations within the AQMAs.

A total of 31 measures have been drafted in the AQAP. The measures considered most likely to bring about direct air quality impacts are interventions to reduce road traffic emissions from smoothing traffic flow or reducing vehicle use; and junction improvements to increase capacity and improve road layouts linked to new developments. However, both these measures are vague and limited information is given. The other measures listed are considered commensurate with

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the concentrations assessed. SBC are focusing on wider, more strategic measures as opposed to localised hotspots, which is aligned with the source apportionment indicating a significant background component to NO_x concentrations.

The Final AQAP discusses quantification of measures, highlighting why this has not been possible for most actions. Action 11 has been quantified using the Emissions Factor Toolkit (EFT) to lead to a 4.7% reduction in in road NO_x, assuming a 5% increase in EV usage on the A30. The remaining measures are not quantified but have had their impact on air quality qualitatively assessed. This is then used in a cost-benefit analysis, which also considers feasibility. Though it is hard to ascertain which measures are the strongest overall based on SBC's assessment.

Responses to consultation and stakeholder engagement on the draft AQAP are provided in Appendix A, and it appears these have been taken forward into the final AQAP.

Details of the composition of the steering group established to take the AQAP forward have been provided, though it is not clear when and how frequently the steering group will meet. SBC's plan for how compliance would be maintained is not outlined.

Defra recommends that Directors of Public Health approve AQAPs. Sign off is not a requirement, however collaboration and consultation with those who have responsibility for Public Health is expected to increase support for measures to improve air quality, with co-benefits for all. Please bear this in mind for the next annual reporting process.

This commentary is intended to inform the amendment of, or an update to, an AQAP specifically however, should the authority be in position to revoke the AQMA before the next update, the points raised in this appraisal report can also be used to help inform the content of a future local air quality strategy.

The AQAP is considered acceptable, though recommended improvements remain which are strongly advised to be addressed prior to publication.

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Commentary

1. SBC have discussed current air quality within the borough. Annual mean NO₂ concentrations for 2023 are only reported within Figure 1, which can be hard to read. It would be helpful to include a summary table.
2. There was one monitoring site with a concentration above 40 µg/m³ in 2022, but this is reported to be below the annual mean NO₂ objective after distance correction. The concentration prior to distance correction, and the distance corrected concentration for this monitoring site, has not been reported. The AQMA was compliant in 2023.
3. It is stated within the AQAP that the study completed in 2022 by Ricardo as part of the source apportionment exercise shows concentrations would achieve compliance by 2022 at all modelled locations, with compliance assessed as 40 µg/m³. Both diffusion tube results and dispersion modelling are known to have a margin of error within their reported concentrations. As such, any decision making should account for this, and Defra recommends that a confidence threshold of 10% be used when seeking to determine whether to revoke an AQMA. In practice, this means that predicted annual mean concentrations of NO₂ from modelled results should be judged against a 36 µg/m³ limit for determining compliance. This is set out in [LAQM FAQ 142](#). As such, compliance is modelled to be achieved by 2024, indicating revocation is possible by 2027. It is noted concentrations have been <10% of the objective in 2023.
4. The final AQAP directly quantifies the impact from one measure using the EFT. Whilst limited, this inclusion is welcomed.
5. The remaining measures were not quantified but have had their expected air quality effect qualitatively assessed, and thus provides some indication of likely improvements that are predicted to arise from the implementation of the AQAP.
6. It is expected that the implementation of the action plan would ensure compliance is maintained. However, the AQAP would benefit strongly from a clearer strategy for the maintenance of compliance, detail how delivery partners will work together to implement the AQAP and set out the plan to monitor and evaluate the effectiveness of the plan over its lifecycle.
7. The expected air quality benefit, cost and feasibility of each measure is ranked from “low” to “high”, with a description of the criteria of this ranking, as a cost-benefit analysis. It could be clearer which actions are therefore favoured, and how this will inform SBCs direction in implementation of the AQAP.

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8. The final AQAP reports an estimate of population within the AQMA area, as per section 2.22 of LAQM.TG(22). This is welcomed.
9. Discussion surrounding the public health and policy context is considered sufficiently detailed. SBC also examined air quality through a broad lens, considering wider regional factors, such as Heathrow airport strategies, actions by nearby Guildford Borough Council, as well as the impact of introduction of ULEZ in London Boroughs neighbouring SBC. This is welcomed, demonstrating SBC's co-operation with external groups.
10. A source apportionment study has been undertaken in 2022, with the action plan also reporting on a similar source apportionment work conducted by CERC in 2019. The Final AQAP provides a link to the full 2022 report. However, some improvements which could be made to the reporting of this work in the AQAP remain:
 - a. The 2022 source apportionment was completed for six study areas. It may be clearer to present the information in a table to allow for easier comparison and understanding of results. For example, to see the degree to which certain areas are more dominated by background sources vs road traffic sources.
 - b. The 2022 source apportionment indicates background sources as the greatest contributor, whilst the 2019 work suggest the largest proportion of emissions can be attributed to road traffic. This discrepancy should be explored further; it is not clear whether there has been a genuine change in emission sources over the time passed between both studies, or if there is a difference in methodology (e.g. different sites used).
 - c. The text states it is likely that since 2017, the proportion of diesel cars has reduced and LGVs may have increased. The reasons for this should be detailed as this could affect the measure derivation.
 - d. One of the Council's priorities is to work with Heathrow Airport, it is understood that the majority of local emissions associated with Heathrow Airport are from transport to and from the airport rather than aviation emissions, but the Source Apportionment would also benefit from a review of aviation emissions. These can be obtained from the Background Maps on UK-Air. Other background sources such as Domestic and Rural contributions can also be found in the Background Maps which would make for a more robust Source Apportionment study.

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11. The report is generally well formatted and proofread, one minor improvement recommendation would be that the font is consistent throughout the document.

This commentary is not designed to deal with every aspect of the report. It highlights a number of issues that should help the local authority either in completing the Air Quality Action Plan Report adequately (if required) or in carrying out future Review & Assessment work.

Issues specifically related to this appraisal can be followed up by returning the attached comment form to Defra, Welsh Government, Scottish Government or DOE.

For any other queries please contact the Local Air Quality Management Helpdesk:
Telephone: 0800 0327 953
Email: LAQMHelpdesk@bureauveritas.com

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Appraisal Response Comment Form

Contact Name:	
Contact Telephone number:	
Contact email address:	UKLAQMAppraisals@aecom.com

Comments on appraisal/Further information: