

# **WILTSHIRE COUNCIL: BATH CAZ CONSULTATION RESPONSE**

## **Introduction**

It is acknowledged that Bath's air quality is poor, which leads to public health issues. Due to forecast exceedances B&NES, along with another 27 local authorities were required by Government to produce a Clean Air Plan (CAP) that improves air quality in the shortest possible time.

## **Objective of the Clean Air Plan**

B&NES has adopted an objective led approach which is supported by Wiltshire Council. The primary stated objective of the package of measures proposed in the CAP is to achieve air quality compliance in the shortest possible time, and consequently improve public health, within Bath by 2021.

Whilst it is acknowledged that achieving compliance in the shortest possible time is the main criterion for assessing proposals, the government has set out a number of secondary objectives which B&NES ought to be considering. These include:

- Strategic and wider quality fit
- Distributional impacts
- Achievability
- Value for money
- Supply side capacity and capability
- Displacement (where a measure would displace traffic from one polluted road onto other roads).

Wiltshire Council recognises that some of these secondary objectives are considered to some extent but the consideration of **displacement** is particularly weak.

Without the inclusion of displacement as an objective, an objective led approach is flawed. This could result in the adoption of a scheme which results in unintended negative consequences.

## **Do Nothing**

B&NES' preliminary assessment based on use of air quality monitoring data projected past 2020 concluded that compliance is not expected to be achieved across Bath, at all monitoring locations, until 2025 without additional measures.

## **Do Something**

It is acknowledged that the proposed Bath CAP, which includes a Clean Air Zone (CAZ), is a practicable way to deliver air quality improvements in Bath within the shortest possible timescale.

## **Data Collection and Methodology**

Wiltshire Council acknowledges the significant modelling and data collection exercises that have been undertaken by B&NES to assess the impact of the proposed CAP. Specifically, noted are the localised data collection to enable behavioural and fleet composition via resident surveys and Automatic Number Plate Recognition (ANPR) data capture respectively. However, the level of detail available to clearly assess the potential impacts of those choosing to avoid Bath as a result of the CAZ charge could be improved. This would help clarify the more precisely the wider impacts of the proposed CAP and CAZ in particular.

Overall, the methodology applied is relatively robust, standardised and provides a reasonable assessment of the CAP. However, it should be noted that aspects of modelling

used contain irrefutable levels of inherent uncertainty, particularly air quality modelling and the accuracy of stated preference surveys.

Wiltshire Council believes that these levels of uncertainty should be taken into account and considered when assessing and interpreting forecast results.

### **Displacement**

Government guidance on displacement is clear: the introduction of a CAP scheme should not displace the most polluting traffic from one polluted road on to other roads, whether *within or outside* the local authority area. The Clean Air Zone Framework (2017) also is clear that, *should a decision be taken to introduce a Clean Air Zone, a local authority will need to take account of any impacts on any AQMAs outside the Zone as well as other areas, for example through displacement of vehicles.*

B&NES is aware of the Government guidance on displacement and its obligation to assess the wider impacts of the proposed CAP.

Accurately assessing the amount of displacement is particularly important for West Wilts towns because two of the potential diversion routes for those avoiding the proposed CAZ, (Westbury and Bradford on Avon) already experience poor air quality with values above legal limits and are designated Air Quality Management Areas.

Any material displacement arising from the proposed CAZ will compound the air quality problem in these towns which has separately been deemed unacceptable by Defra. Unfortunately, the level of detail available for surrounding alternative routes is such that is difficult to ascertain the potential impact of the CAZ accurately. The SPS does indicate that a proportion of the most polluting vehicles will be replaced and some trips change mode. However, this aspect of B&NES' assessment could and should be improved to more precisely and reliably forecast the holistic wider impacts of the proposed CAP particularly the impact of the class D CAZ in these towns.

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Wiltshire Council would like to highlight the following key points as areas of concern:

1. **Air Quality Modelling Certainty - PCM Model Validity**
2. **Stated preference Survey (SPS)**
3. **Potential Impact of Bristol Air Quality Plan**
4. **Impact of a Class C Higher Charge**
5. **Monitoring & Policy Flexibility**

#### **1 Air Quality Modelling Certainty**

B&NES' assessment concludes that the only option which delivers the primary objective is a Class D CAZ at £9 LV and £100 HGV/Bus.

The modelling results presented demonstrate that B&NES **local data** on air quality forecast that no receptor has exceedance of over 40µg/m<sup>3</sup> for either class C CAZ (£9/£100) or class D (£7.50/£100) or class D (£9/£100) in 2021.

The only exceedances relate to the Defra model forecasts via their Pollution Climate Mapping (**PCM**). B&NES have used this model which forecasts only 2 links with exceedances for Limit Values. These two links have forecast NO<sub>x</sub> levels at 41 µg/m<sup>3</sup> compared to the limit value of 40 µg/m<sup>3</sup>.

Defra's predictions are based on outputs from their PCM model which is used to report legal compliance to the EU. The model is calibrated against measured concentrations from the national monitoring network (Defra's Automatic Urban and Rural Network – AURN), but does not take into consideration all data available from Local Authority monitoring networks.

The verification process for the model is therefore reliant on fewer monitoring locations than local models, which can result in over or under estimations in the PCM model. Defra state that it is important to stress that these projections of future air quality are subject to uncertainty.

**Defra estimates this overarching uncertainty to be in region of +/-29%** (Defra AQ Plan – Technical Report, pg 16). There is a 95 per cent likelihood that the true outcome is within this range.

Whilst Wiltshire Council accepts that this uncertainty is not a justification for inaction, it does strongly believe that these levels of uncertainty should be taken into account and considered when assessing and interpreting forecast results, especially when the forecasts are as close to the legal limit as they are in this case i.e. 1µg/m<sup>3</sup> point which is equivalent to +2.5%.

In addition, Wiltshire Council considers that the local air quality monitoring should take precedent over the PCM model as the local model provides a more robust forecasting platform.

This is the case with Bristol City Council's (BCC) air quality plan. In Bristol only one monitoring station is used for verification of the PCM modelling, whereas local predictions use data from 4 automatic monitoring stations and 105 NO<sub>2</sub> diffusion tube monitoring sites across Bristol. The difference between the numbers of monitoring stations used by each model is the driving factor for the difference between accuracy of air quality models and their predictions.

**Defra acknowledge that BCCs data more accurately reflects the local circumstances and this data is being used to determine the most appropriate course of action.**

**Bath's local air quality model is based on 41 diffusion tubes and 3 automatic monitoring sites.** It would seem a consistent and reasonable approach for B&NES to rely on their local data (and not the PCM data) as BCC have done to determine the most appropriate course of action.

Using local data to ascertain the impacts of a CAZ would suggest that a class C CAZ (£9/£100) would meet the primary objective of improving air quality in Bath in the shortest possible time. In addition, a class C CAZ (compared to a class D CAZ) is likely to significantly reduce the risk of any negative impacts associated with the displacement of the most polluting private light goods vehicles to surrounding roads (since these vehicles will be exempt from a class C CAZ).

**Consequently, Wiltshire Council ask B&NES to reconsider their modelling approach and the interpretation of the modelling results due to inherent uncertainties with modelling.**

## **2 Stated Preference Survey (SPS)**

It is noted that B&NES have carried out a local stated preference survey to ascertain behavioural changes arising from the proposed CAZ. The data collected, comprising 1,160 questionnaires is a distinct improvement to the initial response rate used in the SOC which was taken from the London Low Emission Zone project. This approach is welcomed.

It is noted that 100% of B&NES' SPS respondents are local in nature; originating from:

- B&NES: 47%
- Bristol: 11%
- S Gloucestershire: 03%
- North Somerset: 08%
- Somerset: 11%
- Wiltshire: 20%.

However, part of the Strategic Road Network runs through Bath and a significant proportion of these trips are likely to have an origin and destination outside of the SPS geographical coverage. Therefore, the behavioural response of a proportion of through trips will not have been assessed via the SPS. The behavioural response for longer distance through trips are likely to be derived through the application of the strategic model assignment.

Wiltshire Council believe in this instance real world reactions to the CAZ may significantly differ to that of modelled behaviour. It is reasonable to assume that non local traffic is likely to have a greater propensity to avoid the CAZ due to the uncertainty of whether or not they will be driving a compliant vehicle and therefore be charged or not. In addition, SATNAVs may be set to avoid tolls as a default whether or not the vehicle is compliant.

As a result of this uncertainty, the amount of diverted traffic (through West Wiltshire towns) is likely to be greater than forecast as drivers choose to avoid Bath to eliminate the risk of paying a CAZ charge.

Wiltshire support the use of locally collected SPS data, but there are still potential weaknesses with its application. The degree to which the results of the SPS reflect real world actions is debatable with some studies suggested an 80% difference between actual and stated behaviour. Again, this uncertainty should be considered when interpreting results.

The SPS is unable to ascertain the behavioural response of non local long distance traffic on the strategic road network. The strategic model is likely to underestimate the number of trips diverting and therefore could underestimate the impact on West Wiltshire towns which already have AQMAs.

## **3 Potential Effects of Bristol City Council's Air Quality Plan**

Like Bath, Bristol also has poor air quality which leads to public health issues. Due to forecast exceedances, Bristol has also been required by Government to produce a CAP that improves air quality in the shortest possible time. It should be noted that at the time of this consultation Bristol's final Air Quality Plan has not been agreed. However, Bristol City Council is required to do something to address poor air quality and various classes and sizes of CAZ are being considered. Doing nothing is not an option for BCC.

During the assessment of the Bath CAP B&NES has not taken into consideration the potential impact of Bristol's clear air plan (which is likely to include a CAZ). This is a

significant shortcoming in the evaluation process, particularly since B&NES has concluded that the impact of a Bristol CAZ on local drivers would be equal to that of the Bath CAZ.

If B&NES had included the potential impacts of the Bristol air quality plan (which is likely to include a CAZ) this would question the necessity of introducing a Class D CAZ in Bath to ensure air quality meets legal limits.

Wiltshire Council believes it is necessary for B&NES to state how they intend to assess the potential impact of Bristol's CAP when the details are decided and how and when Bath's CAP will be able to take this into account.

#### **4 Increased Charges for a Class C CAZ**

Notwithstanding the issues above, B&NES' data suggests that a Class C CAZ is close to delivering sufficient air quality improvements in Bath. Compliance may be achieved by increasing the cost of a class C CAZ. An assessment clearly stating what level of charging for a class C CAZ would deliver the air quality objective should be investigated so that an informed decision can be made.

#### **5 Monitoring & Policy Flexibility**

Due to the inherent uncertainty with forecasting, not only with the air quality modelling but stated preference surveys, a monitoring and evaluation plan assessing the impact of the proposed CAP and CAZ is required. Particular regard should be given to assessing the actual amount of displacement and its impact on air quality on surrounding roads, particularly where there is an existing AQMA, whether inside or outside of B&NES.

It is acknowledged by Defra that some of the uncertainties can only be reduced by implementing the plan, measuring the outcomes and then, where necessary, adapting the policies in the future based on increased knowledge of how well they have performed against expectation.

To that end, systematic evaluation of the performance and consequences of the Bath air quality plan and CAZ will be required. Furthermore, Bath's air quality plan needs to be flexible and designed in such a way so that it can quickly respond to the real world impacts and uncertainties outlined above, (including the proposed Bristol CAP), in order to deliver its main objective whilst ensuring air quality is not compromised on other roads, particularly where there are existing AQMAs.

B&NES SOC sets out an overview of proposed Monitoring and Evaluation which is solely focussed on collected data in Bath. This monitoring and evaluation plan needs to be extended in scope so it is capable of capturing impacts outside of Bath. Wiltshire Council would welcome a collaborative approach to achieve this aim.