



Shared Regulatory Services (SRS)

Environment (Entreprise and Specialist Services)

Technical Note on the Proposed Declaration of Air Quality Management Area
(AQMA), Park Street, Bridgend

REF: Bridgend Park Street AQMA

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Background to Local Air Quality Management (LAQM) in Bridgend

Shared Regulatory Services (SRS) on behalf of Bridgend County Borough Council (BCBC) has a statutory duty under Part IV of the Environment Act 1995 & Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 to ensure a programme of Local Air Quality Management (LAQM) is implemented.

Under Section 82 of the Environment Act 1995 every local authority has an obligation to regularly review and assess air quality in their areas, and to determine whether or not air quality objectives are likely to be achieved. The air quality objectives applicable to LAQM in Wales are set out in the Air Quality (Wales) Regulations 2000, No. 1940 (Wales 138) and Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298). Where the air quality reviews indicate that the air quality objectives are not being achieved, or are not likely to be achieved, Section 83 of the 1995 Act requires local authorities to designate an Air Quality Management Area ('AQMA'). Section 84 of the Act ensures that action must then be taken at a local level which is outlined in a specific Air Quality Action Plan (AQAP) to ensure that air quality in the identified area improves.

The Department for Food, Environment and Rural Affairs (Defra) has produced a guidance document which provides a framework to all local authorities undertaking local air quality management "Local Air Quality Management Technical Guidance (TG 16)." The guidance lists UK pollutants and their associated air quality objectives, as well as where these air quality objectives should apply.

In line with this guidance, SRS on behalf of BCBC currently undertakes regular monitoring at specifically allocated locations across Bridgend using automated and non-automated principles for ambient air Nitrogen Dioxide (NO₂), Particulate Matter (PM₁₀) & Sulphur Dioxide (SO₂).

With regards to prioritising ambient air quality sampling locations, the Council adopts a risk based approach to any allocation of monitoring sites, considering the requirements of Local Air Quality Management Technical Guidance 16, February 2018. The designated monitoring locations have been assigned based on relevant exposure and where the certain Air Quality Objective levels for a particular pollutant applies. The document states that annual mean objectives should apply at "All locations where members of the public might be regularly exposed. Building facades of residential properties, schools, hospitals, car homes etc."

Automatic Monitoring Sites

Bridgend currently has two automatic air quality monitoring sites which are located at Ewenny Cross Roundabout and in the vestry of Soar Chapel, Rhiwceilog. The sites monitor on a 24/7 basis accumulatively measuring levels of NO₂, PM₁₀ & SO₂.

Non-automatic Monitoring Sites

There are currently 30 specifically allocated non automatic monitoring sites in Bridgend which monitor levels of Nitrogen Dioxide (NO₂). These sites are supported and maintained by SRS on behalf of BCBC. The non-automatic sites do not provide live data; instead they consist of diffusion tubes which are placed at each of the sites, collected and replaced on a rolling monthly basis. The results derived from the tube sampling are then averaged over the year to enable a comparison of the results against the **annual mean (40µg/m³) and 1-hour mean (200µg/m³ not to be exceeded > 18 times per year)** air quality objectives for NO₂.

Elevated & Exceeding Levels of NO₂

In 2017 the network of non-automated NO₂ monitoring locations was reviewed and ten additional monitoring locations were commissioned. These additional locations were sited based on known areas of particularly elevated traffic flows, introduction of traffic management systems and foreseeable development, all with nearby relevant exposure. The newly commissioned sites were allocated to Park Street, Coity Road, Cowbridge Road and Bridgend Town Centre's Market Street.

On 18th September 2018 BCBC's Cabinet approved the 2018 Local Air Quality Management Annual Progress Report (APR) for Bridgend, as produced by SRS on behalf of BCBC.¹ The report examined datasets captured during 2017 and noted that Park Street, Bridgend was an area of particular concern and subsequently an Air Quality Management Area (AQMA) was required. It was reported that two nitrogen dioxide (NO₂) monitoring locations situated at residential facades on Park Street, as detailed in [Table 1](#) &

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(2) Diffusion tube data has been "bias adjusted" in accordance with Box 7.11 in LAQM.TG16 and "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(3) Diffusion tube data has been corrected for distance to represent relevant exposure in accordance with Sections 7.77- 7.79 in LAQM.TG16 "Fall-off in NO₂ concentrations with Distance from the Road"

¹<https://democratic.bridgend.gov.uk/documents/s17130/18.09.11%20Air%20Quality%2018%20Sep%20Cabine%20Report%20Bridgend%20LF%20approval.pdf>

Figure 1, recorded elevated and exceeding annual average levels of NO₂ when compared to the annual mean NO₂ Air Quality Objective of 40µg/m³. The annual average levels were recorded as;

Table 1- 2017 Annual Mean NO₂ Concentrations

Site ID	Annual Mean Concentration (µg/m ³) AQS = 40 µg/m ³ (2)
	2017
OBC- 102	23.7
OBC- 103	37.6
OBC- 104	41.5

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(2) Diffusion tube data has been "bias adjusted" in accordance with Box 7.11 in LAQM.TG16 and "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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Figure 1- 2017 NO₂ Diffusion Tube Monitoring Location, Park Street



For 2018, monitoring for NO₂ has been increased along Park Street, with an additional two non-automated NO₂ monitoring sites implemented. Figure 2 illustrates the current 2018 network of monitoring for Park Street which includes the additional two locations.

Figure 2- 2018 NO₂ Diffusion Tube Monitoring Locations, Park Street



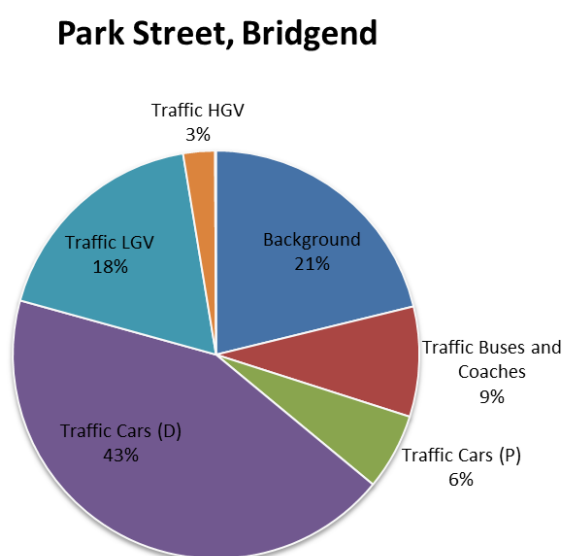
Although a full dataset is not available for 2018, it is evident that the NO₂ annual mean objective is likely to be breached, especially at newly commissioned site **OBC-110**.

Source apportionment Analysis

Using available 2017 DfT manual count data and adopting the guidance outlined in Local Air Quality Management (LAQM) Technical Guidance 16, Box 7.5, the percentage proportion of various vehicle classifications contributing towards measured annual average NO₂ concentrations has been quantified.

The analysis confirms that a large percentage proportion of NO₂ levels experienced at sensitive receptor locations along Park Street is attributed by cars (predominantly diesel models), as well as Light Goods Vehicles (LGVs). The analysis is detailed in Figure 3.

Figure 3- Park Street NO₂ Source Apportionment Assessment



Declaration of an Air Quality Management Area (AQMA)

Welsh Government's (WG) Policy Guidance² states;

4.8 A Local Authority must by order designate as an AQMA any part of its area in which it appears one or more of the national air quality objectives is not being achieved, or is not likely to be achieved.

4.11 Local Authorities should declare or extend an AQMA as soon as possible after recognising the need for it to be declared or extended. A copy of the new or amended AQMA order should be submitted to the Welsh Government and Defra, together with a GIS shape file of the AQMA boundary. The order must also be made public and drawn to the attention of people living and working within the AQMA boundary.

Based on the 2017 NO₂ datasets, in accordance with WG's Policy Guidance and Section 83 of the Environment Act 1995, BCBC is required to legally declare an Air Quality Management Area (AQMA) for Park Street, and in doing so raise an AQMA order that defines the detail and locality of the AQMA.

² <https://gov.wales/docs/desh/publications/170614-policy-guidance-en.pdf>

Next Steps

Pending formal approval of the AQMA Order, in accordance with WG's Policy Guidance;

4.12 A draft action plan must be produced for review by the Welsh Government within 18 months of the coming-into-force date of the AQMA order, and the action plan must be formally adopted before two years have elapsed. A Local Authority failing to produce a draft action plan for review by the Welsh Government within two years of declaring or extending an AQMA will, in the absence of a compelling explanation, be issued with a direction from the Welsh Ministers under section 85(3) of the 1995 Act.

As part of developing an Air Quality Action Plan (AQAP) SRS/ BCBC will form a cross departmental working group that will examine and assess a number of mitigation measures designed to improve/reduce NO₂ levels as low as reasonably practicable.

Following discussions with internal departments SRS/BCBC will engage with the residents of Bridgend and look to undertake a public consultation. The consultation exercise will allow for residents to pass comment on envisaged mitigation measures as well as make their own mitigation suggestions. All measures will be considered and assessed appropriately, and brought forward as a preferred options package. In order to demonstrate the effectiveness of any proposed actions, detailed air quality and transport modelling will likely be required to support any decisions to implement the preferred measures.

At this stage the nature of these measures is not certain but may entail some or all of the following:

- Junction/ traffic signal improvements with Tondu Road;
- Consideration of vehicle flow/ access restrictions;
- Wider transportation improvements across Bridgend to encourage more sustainable and active travel; and
- Improved monitoring, including real time capabilities, to enable more robust understanding of trends and levels of pollution;