



**Shared Regulatory Services (SRS)**

**Environment (Enterprise and Specialist Services)**

Air Quality Management Area (AQMA), Windsor Road, Cogan, Penarth

REF: Decision Notice Report- Revocation of Windsor Road, Cogan, Penarth Air Quality Management Area (AQMA)

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## **Background to Local Air Quality Management (LAQM) in Vale of Glamorgan**

Shared Regulatory Services (SRS) on behalf of Vale of Glamorgan Council (VoGC) 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).

**Table 1- National air quality objectives contained in the Air Quality (Wales) Regulations 2000, as amended by the Air Quality (Wales) (Amendment) Regulations 2002.**

Pollutant	Air Quality Objective	
	Concentration	Measured as
Benzene	16.25 µg/m <sup>3</sup>	running annual mean
	5 µg/m <sup>3</sup>	annual mean
1,3-Butadiene	2.25 µg/m <sup>3</sup>	running annual mean
Carbon Monoxide	10 mg/m <sup>3</sup>	maximum daily running 8-hour mean
Lead	0.25 µg/m <sup>3</sup>	annual mean
Nitrogen dioxide	200 µg/m <sup>3</sup> not to be exceeded more than 18 times per year	1-hour mean
	40 µg/m <sup>3</sup>	annual mean
Particles (PM <sub>10</sub> ) (gravimetric)	50 µg/m <sup>3</sup> , not to be exceeded more than 35 times per year	24-hour mean
	40 µg/m <sup>3</sup> (WHO guideline 20 µg/m <sup>3</sup> )	annual mean
Sulphur Dioxide	266 µg/m <sup>3</sup> , not to be exceeded more than 35 times per year	15-minute mean
	350 µg/m <sup>3</sup> , not to be exceeded more than 24 times per year	1-hour mean
	125 µg/m <sup>3</sup> , not to be exceeded more than 3 times per year  (WHO guideline 20 µg/m <sup>3</sup> )	24-hour mean

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 VoGC currently undertakes regular monitoring at specifically allocated locations across the Vale using automated and non-automated principles for ambient air Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter (PM<sub>10</sub>).

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.”



**Box 1.1 – Examples of Where the Air Quality Objectives Should Apply**

Averaging Period	Objectives should apply at:	Objectives should generally not apply at:
Annual mean	All locations where members of the public might be regularly exposed. Building façades of residential properties, schools, hospitals, care homes etc.	Building façades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties. Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
24-hour mean and 8-hour mean	All locations where the annual mean objective would apply, together with hotels. Gardens of residential properties <sup>10</sup> .	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
1-hour mean	All locations where the annual mean and; 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets). Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more. Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.
15-min mean	All locations where members of the public might reasonably be exposed for a period of 15 minutes or longer.	

## Declaration of an Air Quality Management Area (AQMA)

Welsh Government's (WG) Policy Guidance<sup>1</sup> 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.*

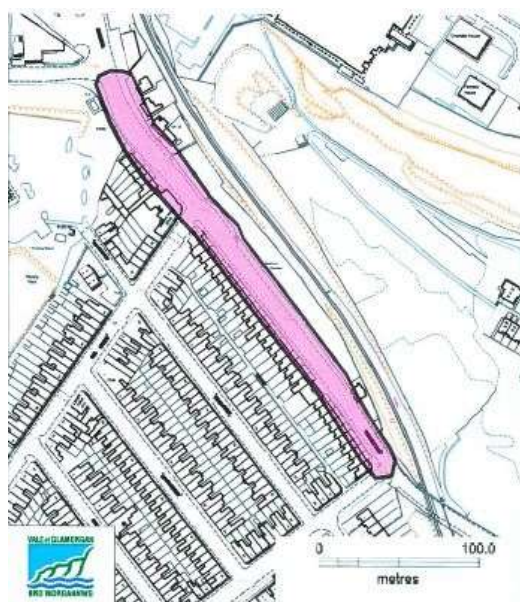
Based on elevated and exceeding annual average levels of NO<sub>2</sub>, in accordance with WG's Policy Guidance and Section 83 of the Environment Act 1995, SRS/ VoGC were required to legally declare an Air Quality Management Area (AQMA) for Windsor Road, Cogan, Penarth, and in doing so raise an AQMA order that defines the detail and locality of the AQMA.

### Windsor Road, Cogan, Penarth Air Quality Management Area (AQMA)

Based on monitoring results and further detailed assessments, there is currently one Air Quality Management Area (AQMA) declared in The Vale of Glamorgan, declared due to exceedances of the annual mean nitrogen dioxide (NO<sub>2</sub>) Air Quality Standard (**40ug/m<sup>3</sup>**), known to be road transport derived NO<sub>2</sub>.

The boundary of the Windsor Road, Cogan, Penarth AQMA incorporates those properties numbered 100 to 172 evens and 15-163 odds of Windsor Road, Cogan, Penarth.

**Figure 1-** Windsor Road, Cogan, Penarth AQMA (declared 1st August 2013)



<sup>1</sup> <https://gov.wales/docs/desh/publications/170614-policy-guidance-en.pdf>



## Decision to Revoke the Windsor Road, Cogan, Penarth AQMA

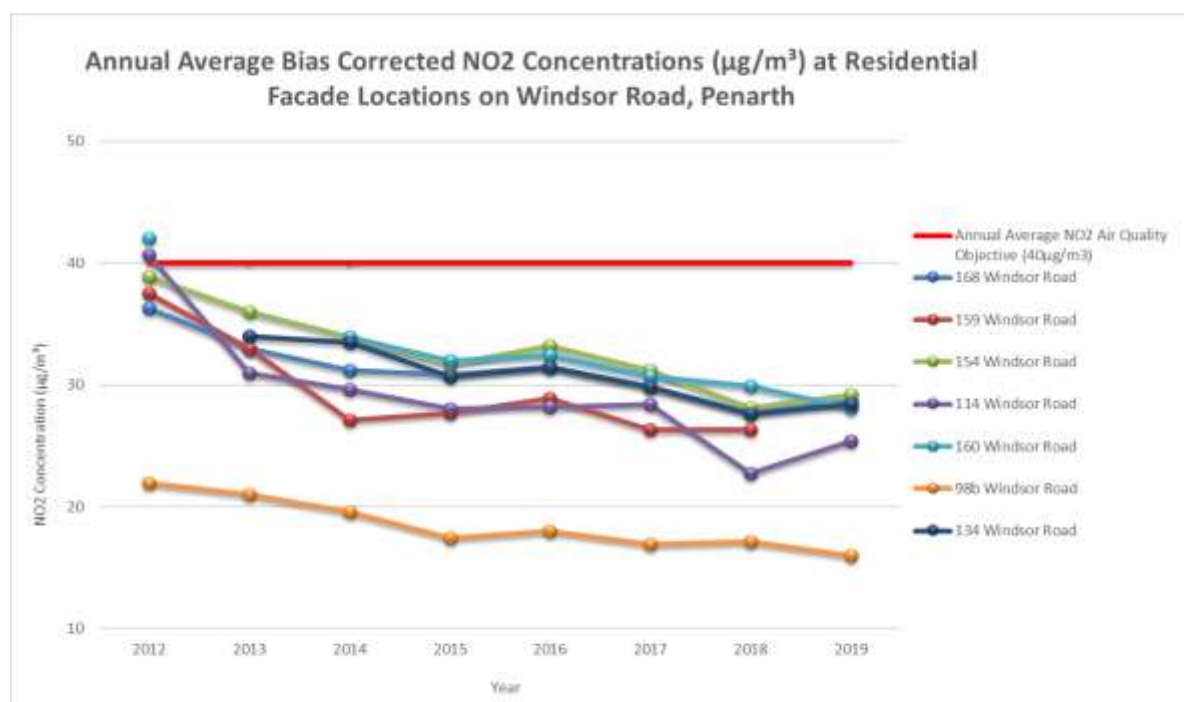
Welsh Government's (WG) Local Policy Guidance, "Local Air Quality Management in Wales" June 2017 states;

4.14 *Local Authorities wishing to revoke or reduce an AQMA should only do so with the approval of the Welsh Government following a review and consultation with the local communities affected. The review should clearly demonstrate national air quality objectives are being met and will continue to be met. In other words, the Local Authority should have confidence the observed improvements will be sustained. Typically this requires three years or more of full compliance, but once the revocation or reduction has been agreed by the Welsh Government, it should occur without delay. Following a revocation, the Local Authority should ideally put in place a local or regional air quality strategy to ensure air quality remains a high-profile issue and conditions are prevented from deteriorating in future.*

Since 2014 NO<sub>2</sub> concentrations, specifically along Windsor Road have stabilised below the Air Quality Standard (AQS) limit values (annual average 40µg/m<sup>3</sup> & 1-hour average 200µg/m<sup>3</sup> not be exceeded more than 18 times per year. Due to continued compliance, in accordance with Local Air Quality Management in Wales, Policy Guidance, June 2017, the Vale of Glamorgan Council (VoGC) wish to revoke the Windsor Road, Penarth AQMA.

Figure 2 illustrates the annual average NO<sub>2</sub> datasets recorded at residential facades within the Windsor Road AQMA. The graph indicates compliance with the annual average objective at every monitored location since 2012.

Figure 2- Annual average levels of NO<sub>2</sub> examined at residential façades on Windsor Road, Penarth



In order to proceed with the formal revocation of the Windsor Road, Cogan, Penarth AQMA, in line with the requirements of WG, a detailed air quality assessment has been undertaken to finalise the decision to revoke the AQMA. This report adheres to the requirements stipulated by Welsh

Government's policy guidance, demonstrating that compliant air quality levels are being met and demonstrate with a degree of certainty that these monitored compliant levels will be sustained for future years.



## Detailed Assessment Results

External professional air quality consultants were commissioned by the VoGC to complete a detailed air quality modelling study to inform the decision as to whether the revocation of the Windsor Road, Cogan, Penarth AQMA is required. The detailed report is attached as a separate document, earmarked as Appendix 2B.

The assessment undertaken utilised best practise techniques and guidance to ensure a conservative outcome. In accordance with the Welsh Air Quality Standards, concentrations of NO<sub>2</sub> and PM<sub>10</sub> were examined at 28 sensitive receptor locations geographically placed within and in close proximity to the established AQMA boundary. The report takes into consideration previous reporting levels as well as uses air quality dispersion modelling software (ADMS-Roads, Version 4.1.1) and at the time latest emission factors (Version 9.0) to look at current pollutant concentrations and projected concentrations. Three modelling year scenarios were chosen for this study (2018, 2023 and 2028).

Utilising Tables 5.1- 5.3 of the detailed report (Appendix 2B), the predicted concentrations of NO<sub>2</sub> and PM<sub>10</sub> at all modelled receptors within the Windsor Road, Cogan, Penarth AQMA are well below both the annual mean and short term AQS objectives for all modelled year scenarios. As stated by the report;

*-The maximum annual mean NO<sub>2</sub> concentration predicted at existing receptor locations within the Windsor Road AQMA was at receptors R16 and R18 with a predicted concentration of 31.2µg/m<sup>3</sup>, 78% of the annual mean NO<sub>2</sub> AQS objective. Similarly, the maximum annual mean concentrations predicted in the future year scenarios (2023 and 2028) were at receptors R16 and R18 (21.4µg/m<sup>3</sup> and 15.7µg/m<sup>3</sup> respectively). Both receptors are located on the façade of a property bordering the A4160 (Windsor Road), located along the south-western extent of the AQMA.*

*-Given that the NO<sub>2</sub> annual mean concentrations predicted at all receptor locations are below this limit for all scenarios, exceedances of the 1-hour NO<sub>2</sub> AQS objective are unlikely.*

*-The maximum predicted annual mean PM<sub>10</sub> concentration at existing receptor locations for the 2018 scenario was at receptors R16 and R18 with a predicted concentration of 21.8µg/m<sup>3</sup>, 54.5% of the annual mean PM<sub>10</sub> AQS objective. Similarly, the maximum annual mean concentrations predicted in the future year scenarios (2023 and 2028) were at receptors R16 and R18 (20.6µg/m<sup>3</sup> and 20.1µg/m<sup>3</sup> respectively). Both receptors are located within the Windsor Road AQMA.*

*-The number of days where PM<sub>10</sub> concentrations were predicted to be above the 24-hour PM<sub>10</sub> 50µg/m<sup>3</sup> AQS objective was less or equal to 6 days for all modelled scenarios at all receptor locations. This is well below the 35 permitted exceedances.*

## Public Engagement and Consultation

To announce the revocation proposal and provide an opportunity for public members to review and discuss the proposal further, the Vale Council hosted a public consultation, whereby a [designated webpage](#) for the specific topic was created. The webpage provided relevant documentation, an online questionnaire to be completed and communication links to submit opinions. Vale and Shared Regulatory Services carried out wider public social media campaigns and designated letter drops to residents and businesses in the vicinity of the Windsor Road, Penarth AQMA to advertise the public consultation and how to become involved.

To support the public consultation exercise, Shared Regulatory Services on behalf of the Vale Council held engagement/drop-in sessions where public members could meet with and talk to Officers about the revocation and voice any concerns. These sessions took place at Penarth Leisure Centre across two days with two available sessions each day;

12th September 09:00 – 11:00 and 17:00 – 19:00

19th September 09:00 – 11:00 and 17:00 – 19:00

The public consultation ran for a period of approximately 11 weeks, from 10<sup>th</sup> September- 25<sup>th</sup> November 2019. The consultation received some engagement, whereby there were a total of 23 respondents to the online questionnaire. Emails were also received to the dedicated email inbox [AirQuality-SRSWales@valeofglamorgan.gov.uk](mailto:AirQuality-SRSWales@valeofglamorgan.gov.uk) which requested some further clarity regarding the detailed modelling performed, as well as highlight an agreement with the decision to revoke the Windsor Road, Penarth AQMA.

The online questionnaire prompted that air quality concerns were particularly prevalent amongst the public (57% highlighted as very concerned). It is also apparent that the majority of the respondents did **NOT** support the decision to revoke the AQMA (67% said “NO” which accumulates to 14 respondents in total). On the contrary 29% (6 respondents) agreed to the decision to revoke the AQMA. Examining the responses received from those who oppose the decision, responses raised concerns over future development and potential subsequent impact to the AQMA, as well as it was thought to be counterintuitive to revoke the AQMA as it is believed that improvements have only been developed by the AQMA order being in place. Concerns have also been raised regarding the continuation of air quality monitoring within the current designated AQMA area.

In response to the concerns raised, each key point has been addressed, therefore in turn alleviating those concerns and decision to oppose the revocation decision;

### **Future Development**

In terms of the referenced planning applications and the process of planning in general, SRS and Vale Council does keep a vigilant eye on submitted applications and passes comments in regards to air quality where necessary. As per the Vale Council’s Local Development Plan (LDP) 2011- 2026, SRS endorses the key policies relevant to air quality referenced within the document;

### **POLICY MD7 - ENVIRONMENTAL PROTECTION**

Development proposals will be required to demonstrate they will not result in an unacceptable impact on people, residential amenity, property and / or the natural environment from either:

1. Pollution of land, surface water, ground water and the air;
2. Land contamination;

3. Hazardous substances;
4. Noise, vibration, odour nuisance and light pollution;
5. Flood risk and consequences;
6. Coastal erosion or land stability;
7. The loss of the best and most versatile agricultural land; or
8. Any other identified risk to public health and safety.

Where impacts are identified the SRS/ Vale Council will require applicants to demonstrate that appropriate measures can be taken to minimise the impact identified to an acceptable level. Planning conditions may be imposed or legal obligation entered into, to secure any necessary mitigation and monitoring processes.

Featured as a main objective of the adopted LDP;

**Objective 4-** To protect and enhance the Vale of Glamorgan's historic, built and natural environment

The historic, built and natural environment of the Vale of Glamorgan is highly valued by residents and visitors and includes European, National and local designations which provide local identity and distinctiveness and present opportunities for recreation and tourism. The LDP will ensure that these natural and built environmental assets are protected, conserved and where appropriate enhanced as an important resource for local people and which attract visitors and contributes to the local economy.

In summary; Any proposal with the view to impact the Windsor Road, Penarth AQMA has been carefully considered, adhering to a stringent process of review, whereby air quality is considered as a key element in the decision process.

#### **AQMA Order and Air Quality**

The improvements in annual average nitrogen dioxide (NO<sub>2</sub>) levels have not solely been driven by the designation of an AQMA order, improvements have been examined due to transport network improvements and an inevitable improvement to vehicle technology.

#### **Continuation of Air Quality Monitoring**

Non- automated monitoring with the use of diffusion tubes **WILL** continue along Windsor Road, Penarth. The future of the Windsor Road automated monitoring site be will be subject to review, however at this stage it is felt appropriate to decommission the site and potentially seek an alternative location where its use would prove more useful.

## Conclusion

Considering the captured annual monitoring datasets and given the outcomes derived by the detailed air quality modelling it is recommended that the decision be finalised to revoke the Windsor Road, Penarth AQMA official order.

As highlighted throughout this report and supporting documentation; the captured annual average air quality datasets, as well as predicted concentrations for NO<sub>2</sub> and PM10 confirms sustained compliance with AQS objectives. As depicted by the air quality dispersion modelling, concentrations projected at all modelled receptors within the Windsor Road AQMA, and adjacent to the modelled road network in Penarth are compliant with both the annual mean and short term AQS objectives for all modelled scenarios.

As continued future compliance with the air quality standards is likely it is recommended to revoke the Windsor Road, Cogan, Penarth AQMA.

## Next steps

-The VoGC cabinet members will be briefed with the recommendation to revoke the Windsor Road, Cogan, Penarth AQMA. Pending approval, the decision notice to revoke the AQMA will be formally submitted to WG; and

-Non- automated monitoring with the use of diffusion tubes **WILL** continue along Windsor Road, Penarth. The future of the Windsor Road automated monitoring site be will be subject to review, however at this stage it is felt appropriate to decommission the site and potentially seek an alternative location where its use would prove more useful.