

Addendum to Evidence Paper 2: Housing and Community Facilities

Planning for Air Quality Chippenham

1. Introduction

- 1.1 The air quality in Wiltshire is predominantly very good with the majority of the county having clean unpolluted air. There are however a number of locations where the combination of traffic, road layout and geography result in pollutants being trapped so that the concentrations increase to unacceptable levels.
- 1.2 The relatively few locations where Wiltshire may fail to meet the national standards have to be investigated and sampled in order to determine the true extent of the problem. If significant pollution is identified the council has to declare an Air Quality Management Area (AQMA) and put plans in place to seek to improve the air quality.
- 1.3 The ageing population, requirements for new housing and essential development across Wiltshire have the potential to increase the number of people living and working in areas with poor air quality and it is important that Wiltshire Council takes steps to manage this situation to minimise or eliminate possible harm.

2. Wiltshire Council Policy

- 2.1 Wiltshire Council has developed a suite of documents on air quality to form a framework around which improvements in air quality will be built, as follows.

Policy/ Strategy	Focus
Wiltshire Air Quality Strategy¹	Framework document for the whole of Wiltshire
Wiltshire Council Emerging Developer Guidance²	Developer advice on assessing air quality in connection with development in and outside AQMAs
Air Quality Action Plan for Wiltshire³	Improvement of Air Quality within Wiltshire 8 AQMAs. Including community plans
Wiltshire Core Strategy Core Policy 55⁴	Future development

¹ Wiltshire Air Quality Strategy 2011-2015 is available at <http://www.wiltshireairquality.org.uk/reports>

² Wiltshire Council Draft Supplementary Planning Document 2012 is available at <http://www.wiltshireairquality.org.uk/reports>

³ Wiltshire Air Quality Action Plan June 2015 is available at: <http://www.wiltshireairquality.org.uk/reports>

⁴ Wiltshire Core Strategy Core Policy 55 Air Quality is available at <http://www.wiltshire.gov.uk/planninganddevelopment/planningpolicy/wiltshirecorestrategy.htm>

Wiltshire Air Quality Website ⁵	Public Access to data and reports.
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Wiltshire Air Quality Strategy

- 2.2 The Air Quality Strategy is a high level guiding document to inform policy and direction across a range of council services with the aim to improve air quality.
- 2.3 Delivering improvements to local air quality requires input from a wide range of planning and other professions. The Air Quality Strategy is a key document which identifies the importance of good air quality to the people of Wiltshire; It provides a focus and mechanism to promote communication and cooperation within Wiltshire Council, between external organisations and with the community as a whole, to address localised areas of poor air quality in the area.
- 2.4 The document is currently being refreshed to reflect changes and achievements.

Developer Guidance

- 2.5 Wiltshire council is preparing [air quality guidance for developers](#)⁶ which provides advice on how to assessment of the impact of a proposed development on air quality and how to interpret the data produced by the assessment. Assessments have to be made having regard to the national air quality objectives and local data. The developments proposed around Chippenham will trigger the requirement for an air quality assessment.
- 2.6 A key principle of Local Air Quality Management (LAQM) is for local authorities to integrate air quality considerations with other policy areas, such as planning. It is therefore important for Wiltshire to identify how we can best bring air quality considerations into the planning process at the earliest possible stage. It is no longer satisfactory to simply demonstrate that a development is no worse than the existing or previous land use on a particular site. The Wiltshire Air Quality Strategy and the emerging Supplementary Planning Document are key documents in addressing this.
- 2.7 Where developments take place in an AQMA, mitigation measures must be considered as standard practice, particularly in cases where the development is new and does not replace an existing use. This is especially important where the development has provision for a large number of parking spaces, significantly increase the number of journeys by private transport, and/or heating plant. In some cases it may be necessary to recommend refusal where a development is so contrary to the objectives of the Air Quality Action Plan and Strategy. This guidance takes into account and supports advice contained in the National Planning Policy Framework.

Core Policy 55

- 2.8 Wiltshire Core Strategy Core Policy 55 requires that all development, which because of the size, nature or location will have the potential to exacerbate known areas of poor air quality, is required to overcome this barrier to development by demonstrating the measures they will take to help mitigate these impacts. In line with the Air Quality Strategy, additional guidance incorporating a developer's toolkit has been produced and consulted upon. This guidance

⁵ Wiltshire Air Quality Website is available at <http://www.wiltshireairquality.org.uk/>

⁶ Wiltshire Council Draft Supplementary Planning Document 2012 is available at <http://www.wiltshireairquality.org.uk/reports>

document will be refreshed in light of recent guidance produced by [Environmental Protection UK](#) on Planning for Air Quality and will be published as soon as practicable to give positive advice to prospective developers on how to address the issue of air quality effectively so their investment can go ahead.

Air Quality Action Plan for Wiltshire

- 2.9 In areas where an exceedance of an air quality objective is identified Local authorities are obliged to declare an Air Quality Management Area (AQMA) and develop an action plan detailing how levels of the pollutant concerned will be reduced to a level below the objective. Wiltshire Council has published its Air Quality Action Plan which is in two parts; High level actions reflecting wider strategies and policies of the council that will impact air quality and local action community plans developed by individual communities affected.
- 2.10 There are eight [AQMAS](#) in Wiltshire, seven of which have been declared in respect of nitrogen dioxide and one which has been declared in respect of both Nitrogen dioxide and fine particulates.

Local Air quality Working Groups

- 2.11 Local air quality action planning groups comprising councillors and local people have been established in areas where Air Quality Management Areas have been declared under the auspices of the area boards.
- 2.12 Air quality is increasingly raised as an issue by local residents in connection with new development. Developers should work with these groups from an early stage in order that address local concerns regarding air quality can be addressed and resolved at an early stage. This should include groups in neighbouring area boards, in the case of Chippenham, this would include the Calne air quality group.

3. Approach to Development

- 3.1 It is no longer satisfactory to simply demonstrate that a development is no worse than the existing or previous land use on a particular site. In order for Wiltshire to be able to revoke AQMAS positive steps will be required to reduce emissions and in Wiltshire this means reducing traffic within the AQMA and managing traffic levels in areas of elevated pollution (36-40ug/m³) to ensure there is no further deterioration.
- 3.2 In order to do this, developers must have regard to the [air quality zones](#) that accompany the emerging Wiltshire Developer Guidance. These areas incorporate areas of expected growth over the life of the Wiltshire Core Strategy. Applications for development proposed in these areas will need to be accompanied by an air quality assessment based on recognised dispersion modelling with data outputs quantified in terms of the relevant air quality objective(s).
- 3.3 These assessments are informed by the transport assessments developed to support the applications. The air quality data will only be as good as the traffic data input to the dispersion modelling. In light of this transports assessments must have regard to cumulative impact of developments proposed within the core strategy and represent a realistic prediction of future levels of traffic on the network. The assessment must include the impact of traffic generated on the associated town or city centre and areas of congestions (e.g. out of town retail parks)

3.4 Development should design in air quality mitigation measures. There are a number of approaches to this for example:

- Avoid the creation of canyon streets as these do not facilitate pollutant dispersion.
- Avoid properties that front directly onto the street, particularly where the road is on an incline.
- Avoid creating children's play areas close to busy roads.
- Open space facilitates pollutant dispersal, and nitrogen dioxide falls significantly with distance from road side.
- Facilitate alternatives to use of the private car, such as safe cycle routes which link with the existing infrastructure.
- Consider links to public transport services and facilities to support public transport (bus shelters, Real time passenger information etc.)
- Make provision for local services reducing the need for short local journeys by private car.

3.5 Well-designed development can have a positive impact on health inequalities. Improvements to improve air quality should be seen as an opportunity to build and promote healthy desirable communities in which to live, work and raise families.

4. Estimating road traffic emissions through dispersion modelling

4.1 Defra provide technical guidance for the purposes of LAQM.TG(16), as referred to in paragraph 4.3. Detailed within this guidance is information on estimating road traffic emissions.

4.2 The Design Manual for Roads and Bridges (DMRB) model, developed by Highways England, can be used to predict both nitrogen dioxide and fine particulate annual mean concentrations. The latest version to use and procedures for its use are described on the [LAQM Support Helpdesk website](#).

4.3 Where the DMRB assessment indicates that exceedances of the objectives are likely, more detailed modelling work may then be required. This may include the use of more complex dispersion models, and/or the use of local monitoring. However, where a good agreement between the DMRB model results and monitoring is demonstrated, then this model may be sufficient to determine the area of exceedance of the objective. In circumstances where complex road layouts, such as large junctions or complex street canyons are being assessed, then more detailed modelling is recommended. Further guidance on detailed dispersion modelling of road traffic sources is provided in paragraph 7.346 of [LAQM.TG\(16\)](#).

5. National perspective

5.1 The comments above relate to the Local Air Quality Management regime and duties placed on local authorities. It is relevant to consider the wider UK picture and EU requirements for air quality delegated to national governments.

5.2 The UK Government published a draft action plan for dealing with nitrogen dioxide in December 2015 for consultation and quickly followed this by publication of the final documentation in mid-January 2016. The publication of the action plan was prompted by the Supreme Court and the announcement by the EU that they intended to

commence infraction proceedings against the UK for non-compliance with the EU “air quality” directive, specifically nitrogen dioxide and fine particulates.

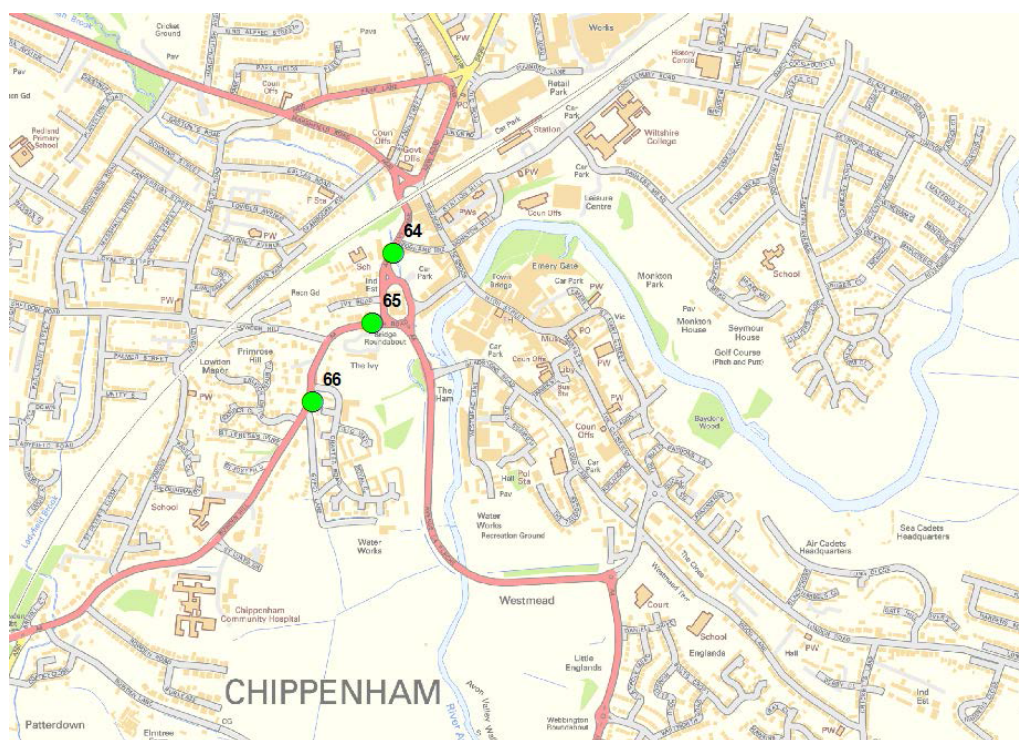
- 5.3 The Government’s action plan places a large emphasis on local authorities needing to achieve air quality objectives through their local action plans by 2020. Only limited national actions were included. ClientEarth the pressure group behind the Supreme Court case which ruled against the Government last year have indicated they will challenge the Governments new action plan as it fails to meet the criteria set by the Directive that objectives/ limits must be achieved in as short a time as possible.
- 5.4 Wiltshire’s actions are included in the measures for the south west along with other authorities in the southwest agglomeration. Local authorities will be receiving great scrutiny of their progress with improvements to air quality.

6. Air Quality Monitoring in Chippenham.

- 6.1 Air quality in Chippenham is monitored using nitrogen dioxide diffusion tubes. The location of these is reviewed annually as it is the annual mean objective for nitrogen dioxide that is of primary concern both within Wiltshire and the UK more generally.
- 6.2 Within Wiltshire the locations that have been found to exceed this objective have tended to be in terraced, canyon type streets, sometimes with an incline and that are heavily trafficked. In 2012 monitoring was undertaken across Chippenham in a number of locations where, in officers experience, pollutant levels were likely to be elevated and potentially at risk of exceeding the annual mean objective for nitrogen dioxide. The results of this survey are presented below.

Site ID	Site Name	Site Type	In AQMA?	Data capture (months)	2012 Annual Mean
P12/81	Dentist, Malmesbury Road	Roadside	N	12	29
P12/82	42 New Road	Roadside	N	12	28
P12/59	Providence Terrace, Ivy Lane	Roadside	N	12	31
P12/60	Bridge Centre, Bath Road	Roadside	N	11	47
P12/83	Rugby Club, West Cepen Park	Roadside	N	12	38
P12/84	Dual Carriageway	Roadside	N	12	18

- 6.2 The results indicated an elevated level in the vicinity of the Bridge Centre. Results for the dual carriageway are low owing to the significant distance between it and any relevant receptors. The survey was further refined with a focus on the Bridge Centre. Three road side locations were selected for investigation and these are shown on the map below.



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6.3 Recent annual mean results for nitrogen dioxide at these locations are presented in the table. All figures are expressed in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$)

Ref	Location	Type	2012	2013	2014	2015*
64	Providence Terrace	roadside	31	32	29	27.3*
65	Bridge Centre	roadside	47	47	47	relocated
65	Bridge centre	Property façade	-	-	-	28.7
66	Bath Road Rowden Hill	roadside	-	41	41	36.6*

*Provisional results corrected for distance from property façade but not bias adjusted.

6.4 The Annual mean objective for nitrogen dioxide is $40\mu\text{g}/\text{m}^3$. Air quality guidance is written in terms of 'relevant exposure' and for the annual mean this would be regarded as being at the façade of dwellings, schools or hospitals. The properties present in this location are set back from the road and levels of nitrogen dioxide fall significantly with distance. The Bridge Centre diffusion tube was located 9.2m from the façade of the nearest property and so in assist in determining whether an Air Quality Management Area was required local residents were approached and agreement obtained to locate a tube at the façade of their property.

- 6.5 Diffusion tubes were relocated in June 2015 and the results obtained are significantly lower at the facades ($28.7\mu\text{g}/\text{m}^3$ & $27.3\mu\text{g}/\text{m}^3$) compared to what was measured being measured at the road side. In light of this data it was determined there was not a need to declare an AQMA, however levels will continue to be monitored. The tube located at Rowden Hill remains at a roadside location. The results indicated levels are below the $40\mu\text{g}/\text{m}^3$ annual mean objective at the road side, however it should be noted the nearest residential exposure is 8.3m from the road side so relevant exposure would be expected to be even lower.
- 6.6 A monitoring location has recently been established close to the A350 on Malmesbury Road following concerns being raised about levels in this locality.

Appendix 1: Air quality Objectives

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25µg/m ³	Running annual mean	31.12.2003
	5.00µg/m ³	Running annual mean	31.12.2010
1,3-Butadiene	2.25µg/m ³	Running annual mean	31.12.2003
Carbon monoxide	10.0mg/m ³	Running 8-hour mean	31.12.2003
Lead	0.5µg/m ³	Annual mean	31.12.2004
	0.25µg/m ³	Annual mean	31.12.2008
Nitrogen dioxide	200µg/m³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40µg/m³	Annual mean	31.12.2005
Particles (PM ₁₀) (gravimetric)	50µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40µg/m ³	Annual mean	31.12.2004
Sulphur dioxide	350µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005