

Where people matter

# Air quality supplementary planning document

September 2012



## Wiltshire Council – report log

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## Foreward

Residents, businesses and visitors to Wiltshire all enjoy the extensive areas of unspoilt countryside that the county has to offer, including the very good air quality. However, there are a few specific areas in our market towns and city which have issues with transport related pollution.

These issues are difficult to address because of the increasing dependence we all have upon motor vehicles, whether for pleasure or business or transportation of goods.

A key principle for Wiltshire Council is to integrate air quality considerations with other policy areas, such as planning. It makes sense that every development that has the potential to emit pollution is required to mitigate or offset this, in order to help achieve an overall reduction in Wiltshire's air pollution.

This supplementary planning document provides technical advice for developers, consultants and the Council in dealing with applications that may have an impact on air quality with a view to ensuring consistency.

I am delighted to commend this supplementary planning document as a key step towards tackling our areas of traffic related pollution.

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## 1.0 Introduction

### 1.1 Purpose of the Guidance

This guidance is aimed at developers, their consultants and officers within the Council. It provides technical advice on how to deal with planning applications that may have an impact on air quality with a view to ensuring consistency in the approach to proposed new development.

The Government Air Quality Expert Group (AQEG) *Air Quality and Climate Change* report (March 2007) recognises the potential for both local and global air quality improvements. Local Authorities will be looking towards improvements in both and developers should take this into account throughout the design, construction and operational phases of a development, bearing in mind any potential trade-offs between global and local air quality improvements.

#### **Aims of air quality supplementary planning document:**

- **Mitigation measures**
- **Air quality assessments**
- **Consistency**

## 1.2 Background

Air quality has been identified as important to human health and wellbeing for many years. In addition it has a range of occupational, environmental and economic impacts. As a consequence there has been a great deal of research carried out and a number of international and national bodies have issued guidance and advice.

The development of recommendations on ambient air quality and their incorporation into UK law can be traced back through the European Commission and World Health Organisation. This has led to the adoption of robust internationally recognised standards.

The Government adopted the UK Air Quality Strategy (AQS) in 1997, to deal with local air quality and its impact on health. This was revised as the AQS for England, Wales, Scotland and Northern Ireland in 2000, which set requirements for local authorities to undertake a process of Local Air Quality Management (LAQM). The latest Air Quality Strategy (AQS) published in July 2007 provides the current over-arching strategic framework for air quality in the UK. Air Quality Objectives for ten pollutants (benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide, particulates - PM10 and PM2.5- and ozone) have been prescribed within the AQS based on The Air Quality Standards (England) Regulations 2007. As part of this process, local authorities must review and assess air quality and work towards objectives to be achieved between 2003 and 2010. Where the prescribed air quality objectives are unlikely to be met, local authorities must designate Air Quality Management Areas (AQMAs) and produce an Air Quality Action Plan setting out measures they intend to take to work towards objectives. Existing Air Quality Action Plans are currently being updated to form one single Action Plan for Wiltshire.

An Air Quality Strategy Framework for Wiltshire was developed in 2006. This has since been superseded by a Wiltshire Air Quality Strategy 2011- 2015 following the formation of Wiltshire Council in April 2009.

<http://www.wiltshire.gov.uk/communityandliving/publicprotection/pollutionandnoise/airandwaterpollution/airquality/airqualityreportsandsummaries.htm>

The National Air Quality Strategy 2007 proposes an 'exposure reduction' approach in line with the proposed EU Thematic Strategy. This approach supplements air quality objectives (which are focused at hot-spots) to achieve a general reduction in pollution concentrations in



urban areas across the whole country. Any changes in the National AQS will be reflected in future Review and Assessment, and policy work undertaken by Wiltshire Council.

A key principle of 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 Supplementary Planning Document are key documents in addressing this.

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 increasing the number of trips, 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 the National Planning Policy Framework (NPPF 2012). This sets out planning policy for the UK in one place. It replaces previous planning policy statements including PPS 23 on planning and pollution control. The NPPF contains advice on when air quality should be a material consideration in development control decisions. Existing and likely future air quality should be taken into account, having regard to EU limit values as well as national objectives for pollutants, the presence of any AQMA's and the appropriateness of both the development for the site and location of the development and aims to help reduce exposure to air pollution across Wiltshire.

This approach should bring health benefits to everyone - not just those living in localised areas (i.e., hotspots) where the objectives are exceeded. This is particularly important for nitrogen dioxide and small particulates, as these pollutants have a significant impact on health. In order to reduce overall exposure, background pollution will need to be reduced, so it makes sense that every development that has the potential to emit pollution must require mitigation or offsetting to help achieve an overall reduction in Wiltshire's air pollution.

### 1.3 Climate Change Emissions

The two areas of concern with regard to climate change are carbon reduction (energy efficiency, renewable energy etc) and climate change adaptation. The long term change to climate means things are getting warmer and wetter, with more extreme weather being experienced. This has implications on air quality.

Although carbon emissions are not included in the Air Quality Regulations for Local Air Quality Management, they are of global importance for their contribution to climate change. Many policies that reduce traffic flow will tend to bring about reductions in both carbon dioxide (CO<sub>2</sub>) and local air pollutants. However, although these pollutants are closely linked, it cannot be assumed that this will be the case for all measures<sup>1</sup>. Therefore, it is important to consider total CO<sub>2</sub> emissions alongside an air quality assessment (both local and remote emissions).

Further information can be found on the climate change website pages:

<http://www.wiltshire.gov.uk/communityandliving/countryside/climatechange.htm>

### 1.4 Wiltshire Core Strategy

Wiltshire's Core Strategy sets out a framework of policies and strategies for future sustainable residential and economic development across the County.

Wiltshire's commitment to air quality is demonstrated by the inclusion of core policy 55 and supported by the Wiltshire Air Quality Strategy 2011 – 2015. See Appendix 1.

Wiltshire's commitment to climate change is demonstrated by the inclusion of core policy 41 and supported by the Environment Change & Opportunity Strategy 2011 – 2020. See Appendix 1

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<sup>1</sup> AQEG. Air quality and climate change: A UK perspective (draft)

## 1.5 Local Transport Plan

The Wiltshire Local Transport Plan 3 (LTP3) contains a number of strategic objectives which have strong links to improving air quality and climate change:

Strategic objective 11: *To reduce the level of air pollutant and climate change emissions from transport*

LTP3 is supported by four individual strategies. Namely:

- Car parking;
- Freight
- Public transport; and
- Road safety

The LTP3 can be viewed at the Wiltshire Council website:

<http://www.wiltshire.gov.uk/council/howthecouncilworks/plansstrategiespolicies/transportpoliciesandstrategies/localtransportplan3.htm>

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## 2.2 Air quality assessments for planning applications

Where air quality assessments are required as part of a planning application, guidance is often sought by the applicant as how best to undertake these to the satisfaction of the local authority. This document sets out situations when an assessment may be required and suggests methods for undertaking such an assessment within Wiltshire.

Once an air quality assessment has been completed, the authority will make a judgement on whether the proposed development is likely to significantly affect air quality or if it is located in an area of poor air quality. If a development is determined to result in a deterioration of air quality, the authority will often work with the developer to offset this impact by securing mitigation measures that will allow the development to progress. Similarly, if a development is of sensitive use and located in an area of poor air quality, the local authority will work with the developer to ensure all measures are taken to secure acceptable air quality for new receptors.

The authority has typically used similar assessment methods to fulfil the requirements of the detailed Review and Assessment process that led to the AQMA designation. For consistency, air quality impact assessments for developments within the district should, where possible, follow similar methodologies. Applicants intending to undertake an air quality assessment should always seek the latest information available on air quality and pollutants of concern from Wiltshire Council. Guidance on the use of air quality assessment applications is available in the Department for the Environment, Food and Rural Affairs (Defra) *Technical Guidance Note LAQM.TG(09)*.

<http://www.defra.gov.uk/publications/2011/03/25/pb13081-laqm-technical-guidance-tg09/>

### Key Point

Air quality Assessment tool kit can be found in Appendix 2.

**Appendix 2: Air Quality Assessment Toolkit**, provides details of the information that is likely to be agreed with the local authority Air Quality Officer prior to an Air Quality Assessment being undertaken. It is hoped that this checklist will cut out 'consultation fatigue' between developers, or their agents, and local authority officers.

## 2.3 Developments that require an air quality assessment

The overall outcome of an air quality assessment is to determine whether the development will have a significant impact on air quality or whether the existing air quality environment is unacceptable for the proposed development.

The three main ways a development may have a significant impact are:

1. If the development is likely to cause a deterioration in local air quality (i.e., once completed it will increase pollutant concentrations)
2. If the development is located in an area of poor air quality (i.e., it will expose future occupiers to unacceptable pollutant concentrations)
3. If the demolition/construction phase will have a significant impact on the local environment (e.g., through fugitive dust and exhaust emissions) the London Councils Best Practice Guidance note entitled *“The Control of Dust and Emissions from Construction and Demolition”* should help reduce emissions from this stage of a development and can be accessed via the following link:

[http://www.london.gov.uk/thelondonplan/guides/bpg/bpg\\_04.jsp](http://www.london.gov.uk/thelondonplan/guides/bpg/bpg_04.jsp)

The Environmental Impact Assessment (EIA) process is likely to require a detailed study of the effects of a development on air quality, particularly where a development is to take place in the urban environment or in an AQMA. In such cases, the approach set out in this guidance note should be followed. Most proposals for commercial or industrial installations that have the potential to emit pollution (e.g., Processes that have been issued with a permit under the Environmental Permitting Regulations (England & Wales) 2010, ‘Part A’ will also normally require an air quality assessment under the EIA regulations<sup>2</sup>. Small industries, such as ‘Part B’ installations, may still require an assessment as part of a permit application under this regime<sup>3</sup>, as would waste handling activities<sup>4</sup>, and the same assessment can often be used to help determine the impact of the development in terms of air quality for a planning application. If for whatever reason planning permission is being sought in the absence of an assessment having been carried out for a permit application or similar, then local authorities should require one to be submitted.

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<sup>2</sup> The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, SI 293/1999.

<sup>3</sup> The Pollution Prevention and Control (England and Wales) Regulations 2000, SI 1973/2000.

<sup>4</sup> Waste Management Licensing (England and Wales) Regulations 1994 (as amended).

There are likely to be many other situations where developments that do not require a full EIA will nevertheless warrant an air quality assessment as part of the planning application. Developers should always check with the local authority to determine whether an air quality assessment is required before submitting a planning application.

Where it is clear from the initial specification of the development that it is likely that the development will have a minimal impact on air quality, but an air quality assessment may still be required (e.g., within an AQMA), developers may wish to consider identifying air quality mitigation measures from the start as part of the development, instead of undertaking a full air quality assessment. This course of action is at the discretion of the local authority air quality officer, and so it is important that communication between developers, or their consultants, and the local authority takes place at an early stage of the decision making process. This does not apply to applications where an EIA under the town and country planning regulatory regime is required.

When considering issues of relevant exposure it is advisable to refer to the ongoing authorities Review and Assessment, carried out as part of the Local Air Quality Management duties, specified by the Environment Act 1995.

All of Wiltshire Council's air quality reports can be downloaded at:

<http://www.wiltshire.gov.uk/communityandliving/publicprotection/pollutionandnoise/airandwaterpollution/airquality/airqualityreportsandsummaries.htm>

### Key Points:

Wiltshire Council will consider the following issues when determining whether an air quality assessment should normally be undertaken:

- Within a 'zoned' area as identified by Wiltshire Council;
- Locality of development – including relevant exposure;
- Length of time and scale of demolition/construction phase;
- Likely increase in traffic levels from existing base (either through servicing or parking requirements);
- New industrial development (e.g., boiler plant/energy production/permitted installations);
- Size of development - residential/commercial floor space or number of units;
- Street canyons and stationary or queuing traffic;
- Increase in HDV movements (e.g., more than 20 per day), such as for lorry parks, depots, bus stations;
- New rail, road building and signalling, bridge, tunnel, port or airport developments;
- Waste handling activities.
- Cumulative effect of development

Note: This list is not exhaustive and other factors may determine that, in the local authority's opinion, an air quality assessment is required.

## 2.4 General principles of air quality assessments

There are two primary factors that impact upon the AQ assessment of a proposed development:

- **Site suitability:** it should be recognised that a development in an area that is already exceeding AQ limits could have a detrimental impact upon its residents;
- **Impact of development:** the impact of the development on the environment needs to be detailed. An air quality assessment should clearly indicate the likely change in



pollutant concentrations (relevant to the air quality objectives<sup>5</sup>) arising from the proposed development – during both the construction and operational phases. The assessment must consider the ***difference*** in air quality as a result of the proposed development.

There is no single, definitive method for carrying out a detailed air quality assessment, but the method must be appropriate for the development. For some developments screening models may be acceptable, provided they can be demonstrated to work and are suitable for the urban environment. Where a detailed dispersion modelling is required, developers should consult the local authority's air quality officer about the proposed modelling technique, to ensure it is appropriate for the air quality assessment.

Consistency is important in all air quality assessments and this guidance note is particularly concerned with air quality assessments where dispersion models are to be used. The scope for inconsistency is greater due to the range of different possible model inputs in such situations.

Where practicable, air quality assessments should take into account the cumulative air quality impacts of other developments, both within the authority and neighbouring Authorities. These should include both committed developments (i.e., those proposals that have been granted planning permission at the time the assessment is undertaken), as well as other proposals which planning officers consider are likely to proceed. This will ensure that a realistic scenario of air quality in the AQMA is presented for both the 'baseline' and 'with development' predictions of the air quality impact of the development.

The granting of outline planning permission should follow the precautionary principle. In the case of high-risk developments a full EIA is likely to be required; therefore the information provided should be the same as that of a full planning application. However, where a development is seen as a lower risk, outline planning permission may be granted. Local authorities should ensure that suitable planning conditions are attached to the outline planning permission requiring further consideration to be given to environmental issues at a later stage, before detailed permissions is granted.

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<sup>5</sup> The Air Quality (England) (Amendment) Regulations 2002, SI 3043/2002.

**Key Points:**

An air quality assessment must demonstrate how a development would affect pollution concentrations in relation to health based statutory and proposed air quality standards and objectives.

**This would normally involve dispersion modelling to:**

- Assess the current air quality situation in the locality;
- Estimate emissions of local air pollutants from the development;
- Predict statistics relevant to the air quality objectives **without** the development in place relative to the year of opening and air quality objectives (EU Limits year 2010 or relevant EU limit years) - the baseline scenario;
- Predict statistics relevant to the air quality objectives **with** the development in place in the same years;
- The cumulative impact of developments should be considered.

Modelled baseline scenarios should also be checked against the local authority's predicted baseline scenarios, to ensure that they broadly agree. If not, the predicted pollutant concentrations, without development, might show an exceedance of air quality objectives where a local authority's Review and Assessment did not, or vice-versa; full explanations should be given for differences in modelling approached and assumptions. The factor of greatest importance would be the **difference** in air quality associated with the proposed development compared to the baseline.

## 2.5 Choosing a dispersion model

Dispersion models should be used in almost all cases for large developments, or those developments proposed in areas where air quality is approaching or exceeding the relevant standards or objectives. Defra guidance *LAQM.TG (09)*<sup>6</sup> suggests models that can be used for air quality assessments – it would be beneficial to confirm the selection of the model with the local authority. The model should be capable of taking into account all relevant emission sources within the locality, for example; line (major road) and area (minor road, domestic heating, individual boilers, commercial etc.) sources. The application should also be able to include point sources (i.e., chimney stacks) from nearby industrial sources. Where relevant

<sup>6</sup> LAQM Technical Guidance. LAQM.TG (09), Defra 2009.

the model should be able to determine the effect of height on air pollutant concentrations, if relevant for the planning application under consideration.

## 2.6 Model input data

The assessment should provide a transparent account of the modelling undertaken, all assumptions made and input data used. The local authority may request an audit of the assessment, in which case the developer must provide any extra appropriate data requested.

## 2.7 Emissions data

National Atmospheric emissions inventory website provides information that may be of assistance in preparing assessments. It can be accessed via;

<http://www.naei.org.uk/index.php>

Comparison should be made with monitoring data from Defra's Automatic Urban and Rural Network where appropriate. The archive can be accessed via:

[http://www.airquality.co.uk/archive/networks\\_home.php](http://www.airquality.co.uk/archive/networks_home.php)

If other emission data is needed for specific situations, such as more recent emission factors on idling, slow speeds or cold starts, they should be shown to be consistent with those used in this inventory; further information can be sought from the local authority.

Except for situations where a distant major source has a significant effect on pollution levels in the area of interest, only major roads and stacks in the vicinity of the development need be included explicitly. The study should take into account the proposed model output area, which may include nearby sensitive receptors and other local hot spots of concern to the local authority.

Background air pollution can be accounted for by using urban background data from a nearby monitoring station where the data is sufficiently relevant to the study area. However, care should be taken to avoid double counting emissions if the urban background concentrations are used.

Distant major sources (e.g. power generation, waste incineration) should be included within aggregated grid sources and must be included when using rural background data. Where a

model is unable to include all emissions sources in this manner, it should be demonstrated that the omission of these sources does not affect the model results. Minor roads in the immediate vicinity, which are congested or show large increases in traffic and which have been included in the transport assessment, should also be modelled.

Further information on emissions and atmospheric emissions inventories, can be found in the Defra's technical guidance document *LAQM.TG (09)*.

## 2.8 Time-varying emissions

Traffic flows and speeds, and hence emissions, vary throughout the day; if appropriate emissions from vehicles should vary within the model, by time of day and by day of week. Where possible, time-varying traffic movements should be based on local information, for instance a local network of automatic traffic counters (ATCs). This information is most applicable for assessments looking at short-term objectives.

The additional density of emissions that occurs during traffic congestion needs to be properly addressed in the assessment. This is particularly important where that proposed development is likely to result in increased congestion or increased queue length. For industrial processes, these should be modelled to vary in time as would be expected by the permit.

## 2.9 Supplementary traffic data

Where a transport assessment (TA) has been prepared for a proposed development, modelled or predicted development traffic flows in the TA should generally be used as the basis for the calculation of 'with development' emissions and subsequent model runs.

**Before an air quality assessment based on a TA is undertaken, the TA should be approved by Wiltshire's traffic planners, in consultation with their air quality officers.**

If this does not happen, developers risk undertaking an air quality assessment on the basis of traffic proposals that may subsequently change, risking the assessment becoming obsolete. Through liaising with traffic engineers and dispersion model users, it is usually possible to obtain traffic data in a suitable format to perform an emissions calculation.

Where the proposed development is likely to result in additional congested traffic conditions, the TA will need to provide sufficient information to quantify the times when queuing around

junctions is likely to occur. Particular care should be taken in selecting appropriate traffic speeds.

## 2.10 Weather data

The format required will depend on the model to be used, and should be checked with the supplier of the dispersion model.

### Key Points:

- Weather data should be taken from an appropriate and representative site with a full dataset; in Wiltshire this is RAF Boscombe Down
- At least one year of hourly-sequential data should be used;
- In adopting a precautionary approach, it is currently recommended that suitable 'worst-case' MET year be used, as well as a 'typical' MET year.

## 2.11 Model specific data

Depending on the model used and the area in question, there are many parameters that should be agreed prior to modelling being undertaken.

### Key Points:

These might include:

- Site surface roughness length.
- Minimum Monin-Obukhov length (certain models only)
- The number and dimensions of any street canyons (streets where pollutant dispersal is adversely affected by surrounding buildings);
- Release height of aggregated sources (grid or volume sources).

## 2.12 Background pollution data

Pollution can be carried into the locality or into the modelled area from non-local sources. Validated and ratified monitoring data should be taken from an appropriate background site or from the National Air Quality Archive<sup>7</sup>, background emissions data can also be gathered from the National Atmospheric Emissions Inventory database<sup>8</sup>, in most cases the same year as the weather data will be used; however, there may be occasions when data from different years may be appropriate. The developer should agree in advance with the local authority's air quality officer which background data should be used.

## 2.13 Pollutant-specific concerns

If a development is expected to alter traffic flows, PM<sub>10</sub> and NO<sub>2</sub> would normally be modelled, since widespread exceedences of Nitrogen dioxide are predicted across parts of the district. Motor vehicles are a significant source of each. If the development is itself a significant emitter, pollutants relevant to the type of development need to be taken into account (for instance, SO<sub>2</sub> and NO<sub>2</sub> should be considered for an oil-burning process or benzene from a petrol station or refinery).

The results for local air pollutants should be compared against national air quality objectives. Any likely exceedences or worsening of air quality as a result of the development must be highlighted.

## 2.14 Nitrogen dioxide (NO<sub>2</sub>)

NO<sub>2</sub> is derived from NO<sub>x</sub> (oxides of nitrogen) via a series of complex chemical reactions. An empirical method or a chemistry scheme may be used to derive NO<sub>2</sub> from NO<sub>x</sub>.

### Key Points:

- All inputs relevant to the chosen chemistry scheme or a NO<sub>x</sub>:NO<sub>2</sub> conversion scheme should be used (see LAQM.TG(09)) and detailed in the report;
- The model's NO<sub>x</sub> outputs should be shown. A full table of outputs should be shown in the appendix, identifying road contributions, adjusted road contributions and total concentrations. The details of the verification process should also be included.

<sup>7</sup> <http://www.airquality.co.uk/archive/laqm/laqm.php>

<sup>8</sup> <http://www.airquality.co.uk/archive/laqm/laqm.php>

## 2.15 Fine particles (PM<sub>10</sub>)

The objective for PM<sub>10</sub> is based on a gravimetric measurement. Any PM<sub>10</sub> modelling study should present results as a **gravimetric equivalent**. Projection of PM<sub>10</sub> for future years should follow the Defra guidance LAQM.TG (09).

### Key Issues:

- PM<sub>10</sub> should be calculated as a gravimetric equivalent;
- Secondary and coarse PM<sub>10</sub> components should be included.

## 2.16 Other pollutants

There are other local air pollutants (including those not in the Air Quality Regulations) that may also be relevant to specific developments. The developer should check with the local authority to determine whether they need to consider the implications of other pollutants or take into account any new air quality objectives. Other pollutants could include:

- Carbon monoxide (CO)
- PAH (poly aromatic hydrocarbons)
- PM<sub>2.5</sub>
- Heavy metals
- Benzene
- Industrial pollutants eg dioxins, halides
- Ozone (O<sub>3</sub>)
- Sulphur Dioxide

## 2.17 Modelling

### 2.17.1 Model output area

The output results should cover the area likely to be affected by the proposed development. For a development that affects traffic movements, the output should cover the area where traffic movement is significantly affected, i.e., as a minimum all the roads included in the transport assessment. Although for some large scale development the impact on air quality /congestion on a much wider area will need to be considered. For example large scale housing development or retail development is likely to have an impact on the main transport links between it and other urban centres.

The results produced would normally be in the form of a detailed contour plot of predicted pollutant concentrations and scale of air quality change. A map showing predicted concentrations with the development in place and a map of the **difference** in concentration with and without the development should both be produced. Ideally, the grid spacing for any contour plots should not be more than 5 metres, to ensure robust definition.

In certain cases it may be acceptable for the assessment to predict concentrations at a number of carefully selected receptors. The developer should agree the output area, location and number of receptors in advance with the local authority. All receptors should be presented on an appropriately scaled Ordnance Survey map.

In the case of tall buildings, developers may need to consider the vertical as well as the horizontal dispersion of pollutants in terms of model outputs. Developers should consider the surrounding environment of the development - any high level point sources, such as chimney stacks or ventilation outlets, should be identified to ensure that the proposed development does not encroach upon the plume dispersion. Developers should therefore take into account any research, emerging studies or guidance on this matter<sup>9</sup>. The Building Research Establishment (BRE) has produced reports concerning the dispersion of pollutants over a building envelope.

The council may require source apportionment data in order to evaluate mitigation and off-set strategies.

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<sup>9</sup> Also see DAPPLE research project <http://www.dapple.org.uk/>



**Key Points:**

- The area affected by the development should be adequately covered by the model output;
- The output should be on an Ordnance Survey map or similar and in a table;
- Maps of the difference with and without the development should be provided where possible;
- Locations and height of receptors should be clearly indicated (on the map);
- The assessment should consider whether the development will create new areas of exposure or increase existing exposure;
- The difference in concentration should be given in  $\mu\text{g}/\text{m}^3$ ;
- The cumulative impact of multiple developments within a localised area should be considered.
- The impact of traffic generating development on the wider road network may need to be considered.

### 2.17.2 Model Verification

Because of the number of uncertainties associated with dispersion modelling, the performance of the model being used in relation to measured pollution concentrations in a similar environment should be demonstrated. For air quality assessments in this district it should be demonstrated as a minimum that the model can adequately predict pollution concentrations in a similar environment, preferably within the district where the development is proposed, since model performance may vary from location to location.

Where the model is used to predict statistics relevant to the air quality objectives (such as percentiles), the evidence of model performance should also address this. Evidence of this should either be incorporated into the report, or submitted with it.

Wherever possible, it is preferable to verify the model against measured pollution concentrations using the same input parameters as for the air quality assessment. Within Wiltshire there are a number of continuous monitoring sites that may be used to validate a modelling exercise. For a more complete description of the approach to the verification of a model please see LAQM.TG(09).

A list of real time monitoring sites and diffusion tube locations for the current year in Wiltshire can be obtained from Wiltshire Council Public Protection Team.

**Key Points:**

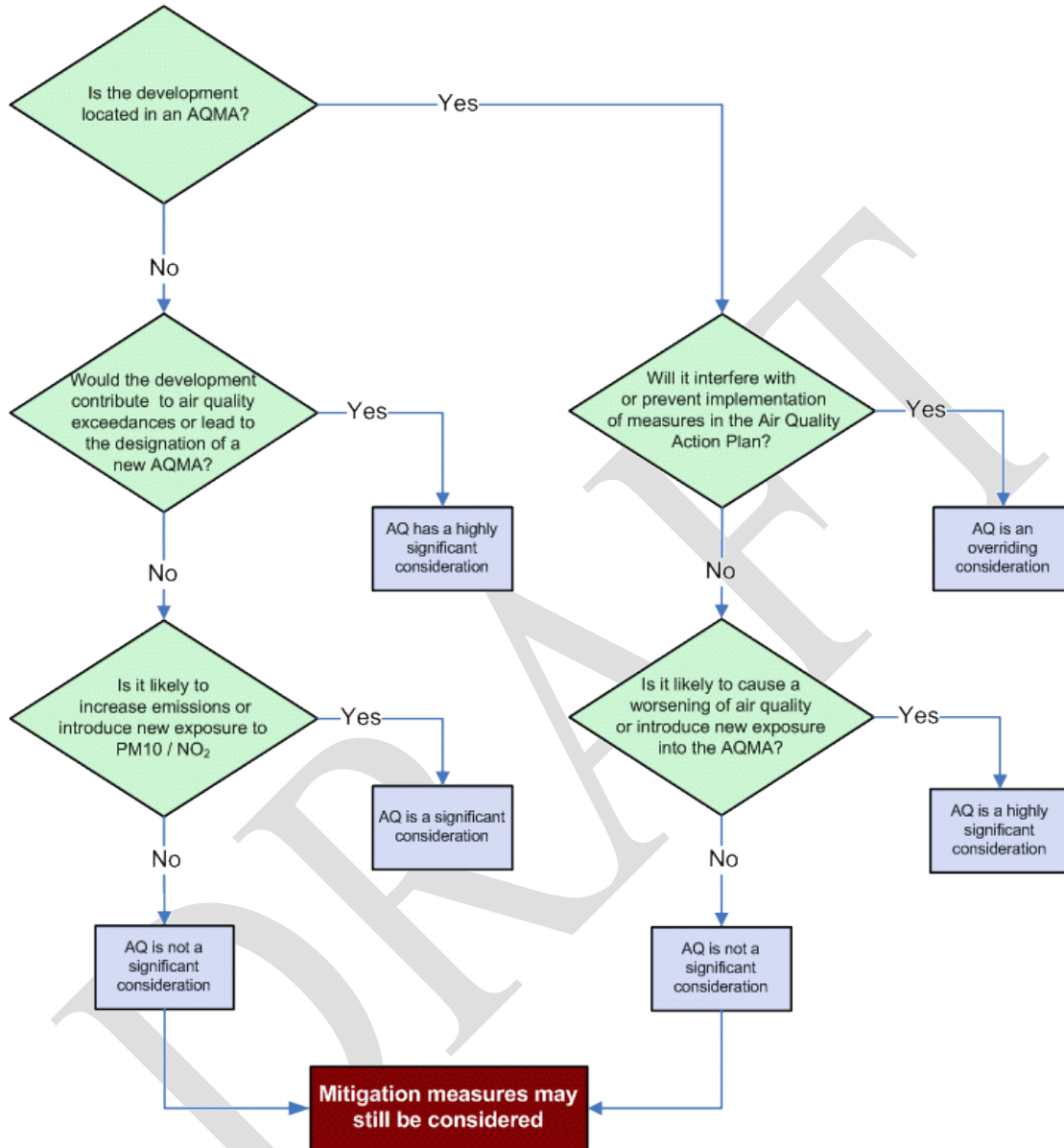
- Evidence of model performance must be provided (e.g., with the release of the version of the model used) or where possible from a new site-specific validation exercise;
- The accuracy in terms of margin of error or uncertainty of the results must be stated explicitly;
- Any scaling factor applied to model outputs (e.g., to adjust results according to observed data) must be clearly stated;
- The model's effectiveness at predicting statistics relevant to the air quality objectives must be demonstrated.

## 2.18 Determining significant impacts on air quality

One of the key concerns with regard to assessing the air quality impact of a development within the district is its impact on human health. It is important that an air quality assessment evaluates modelled air quality in terms of changes in pollution concentrations where there is relevant public exposure. The current Air Quality Regulations are concerned with areas that exceed air quality objectives but this may be revised to favour overall exposure reduction. This guidance follows this approach, where any development that may lead to additional air pollution problems, even if it is outside an AQMA, could be significant. Local Authority Air Quality Officers will make a judgement on the likely impact of each development, based on the results of the air quality assessment and their professional experience. The local authority may also consider the impact of the development on air quality in neighbouring authorities.

The following diagram should assist in determining whether the application is significant in terms of air quality. **Only zero-emission developments are unlikely to have any impact on local or global air quality** and therefore mitigation should be a consideration for **all** developments. Please refer to chapter 3 on Mitigation.

**Figure 1 Determining significant impacts on air quality**



Note: Where **significant** is used, it will be based on the professional judgement of the Local Authority officer.

In determining both the significance of exposure to air pollution and the levels of mitigation required, consideration should be given to the following Air Pollution Exposure Criteria (APEC) table:

Table 1 Air pollution exposure criteria

|                 | <b>Applicable Range<br/>Nitrogen Dioxide<br/>Annual Mean</b>   | <b>Applicable Range<br/>PM10</b>   | <b>Recommendation</b>  |
|-----------------|--|--|--|
| <b>APEC – A</b> | 5% or more below national objective<br><br>(ie 38ug/m <sup>3</sup> and below with respect to the annual mean)                                      | <b>Annual Mean:</b><br>> 5% below national objective<br><b>24 hr:</b><br>> 1-day less than national objective                            | No air quality grounds for refusal; however mitigation of any emissions should be considered.  |
| <b>APEC – B</b> | Between 5% below national objective & the national objective<br><br>(ie 38ug/m <sup>3</sup> & 40ug/m <sup>3</sup> with respect to the annual mean) | <b>Annual Mean:</b><br>Between 5% above or below national objective<br><b>24 hr:</b><br>Between 1-day above or below national objective. | Appropriate mitigation must be considered e.g., Maximise distance from pollutant source, proven ventilation systems, parking considerations, winter gardens, internal layout considered and internal pollutant emissions minimised.  |
| <b>APEC – C</b> | above the national objective<br><br>(40ug/m <sup>3</sup> and above)  | <b>Annual Mean:</b><br>> 5% above national objective<br><b>24 hr:</b><br>> 1-day more than national objective.                           | Refusal on air quality grounds should be anticipated, unless the Local Authority has a specific policy enabling such land use and ensure best endeavours to reduce exposure are incorporated. Worker exposure in commercial/industrial land uses should be considered further. Mitigation measures must be presented with air quality assessment, detailing anticipated outcomes of mitigation measures. |

Note: Applicable ranges assume downward pollutant trend has been established. In situations where there is an upward trend in pollutant levels and there is a significant risk in the view of the LA that the objective may be breached the measures contained in the next APEC category may be required.

## 2.19 Reporting the Assessment

In summary, the following information should be provided as a minimum when reporting an air quality assessment:

- **A description of the methodology used**
- **Evidence of model performance or validation results**
- **Details of any extra emissions calculations**
- **Input data- sources included, input parameters specific to the model and site, meteorology etc**
- **Years modelled**
- **Assessment against relevant air quality objectives**
- **Model output data, on maps where appropriate**
- **Discussion of results**
- **Determination of significance**
- **Conclusions**

## 2.20 Audit trail

The assessment should provide a transparent account of the modelling undertaken and all assumptions made. Should an audit of the assessment be required, the local authority may request extra data.

## 3.0 Mitigation of air quality impacts

This guidance has been designed to help Wiltshire Council, developers and agents identify those developments that are likely to have significant air quality impacts. Wiltshire Council will make recommendations based on the information/assessments provided. Wiltshire Council will work with developers to explore mechanisms to ensure that a development has a beneficial impact on the environment. In terms of air quality, this may be through careful design of the development or by securing mitigation or off-setting measures through planning obligations or conditions that will allow the development to go ahead.

### 3.1 Construction phase

Emissions and dust from the demolition and construction phase of a development can have a significant impact on local air quality, especially from large developments where this phase can take many years.

### 3.2 Design of the development

The design of the development will have a bearing on the overall impact that it will have on the environment.

Careful consideration should be given to the site characteristics of the development, as particular elements of a scheme may be more sensitive to air pollution than others, for example a children's play space should be located away from roads with high levels of air pollution. The appropriate design, layout, orientation and construction can avoid increasing exposure whilst minimising energy demand and energy loss.

The local authority will consider issues such as ventilation provision and location of opening windows and doors to improve indoor air quality. In the case of tall buildings, mixed use can help make development acceptable by, for example, placing residential use on higher storeys away from sources of air pollution (and noise) at ground level, allowing for balconies and open-able windows, while lower floors can accommodate commercial uses where mechanical ventilation and windows that cannot be opened are more acceptable. The use of outside space is also important, However, exposure levels should still be considered; with the location of the roof terrace (height of open space), and adjacent roof exhausts and intake vents, all being factors that can impact upon the exposure levels at these open spaces.

### 3.3 Travel Plans

All new developments should make provisions to encourage cycling and walking and wherever possible, seek submission of Travel Plans that encourage staff and visitors to use more sustainable modes of transport rather than rely on car use. Car parking should be discouraged within AQMAs, particularly for developments located near to public transport. Measures in a Travel Plan need to produce quantifiable emission benefits and ideally an element of monitoring should be included in the agreement.<sup>10</sup>

Examples of individual measures within a Travel Plan include:

- Secure cycle parking and changing facilities;
- Safe pedestrian routes;
- Facilities for public transport, such as bus stops and lay-bys;
- Management and use of parking spaces, so that priority is given to certain categories of people, e.g., disabled people, people with children, visitors, or cars with more than one occupant, electric or low emission vehicles;
- The removal of parking spaces after a specified period, or when access to the site is improved (e.g., new public transport routes, cycle lanes);
- Car free housing developments;
- The provision of information on public transport, walking and cycling access to the site;
- Details on deliveries to the site, covering specification of vehicles and hours of operation, and specifications for lorry parking and turning spaces; and junction and road layouts;
- Employment of a travel plan co-ordinator for the site with responsibility for monitoring;
- Setting targets on the proportion of employee trips to be made by public transport and other alternative modes of transport;
- Setting up or participating in City Car Clubs for residents or employers.

### 3.4 Use of clean/alternatively fuelled vehicles

Promoting the provision of refuelling for alternative fuels such as liquid petroleum gas, liquefied/compressed natural gas or biogas at local fuel stations, encouraging suitable locations for new refuelling facilities, or installing electric vehicle charging points in car parks, can all encourage people to use cleaner-fuelled vehicles. Site operators or occupiers can be required to use clean fuel fleets or restrictions can be placed on them to use specific classes and types of vehicles. They can also be required to monitor the maintenance and carry out

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<sup>10</sup> Further information can be obtained from <http://www.travel.org.uk>

emissions testing of the fleet. The company can undertake driver competency training or join national schemes such as Eco Stars.

### 3.5 Low Emission Schemes and Strategies

All reasonable means to minimise emissions from a scheme should be adopted. Measures may include using opportunities to regulate vehicle emissions, either in relation to European Emission Standards or CO<sub>2</sub> emissions, in line with Vehicle Excise Duty Bandings.

Consideration should be given to both incentives and disincentives to influence vehicle emissions in both commercial and residential usage. A more holistic approach would consider all types of emissions from a development and there may be opportunities to off-set vehicle emissions with energy emissions and vice versa.

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## 3.6 Planning obligations: S106

Section 106 agreements can be used to require developers to provide assistance or support to enable local authorities to implement any actions in pursuit of their Air Quality Action Plan. Typically, measures will focus on ways to reduce the need to travel or encourage more sustainable travel, but it may often be appropriate for developers to fund measures elsewhere as a way to off-set any predicted increases in pollutant emissions in areas of elevated pollution (i.e. areas close to breaching air quality objectives for which the development may tip the balance) and Air Quality Management Areas. The following are examples of measures that local authorities have successfully secured in the past through section 106 agreements. Further advice can be found in Government Circular 05/2005.

### 3.6.1 Funding action plan measures

Examples:

A planning application for a retail outlet on the Southampton Road in Salisbury resulted in £5000 being committed for air quality monitoring and air quality action plan implementation through a S106 agreement.

Air quality monitoring at the time indicated the NO<sub>2</sub> annual average objective was potentially going to be breached in the area and the retail outlet would bring in more cars.

A proposal for 8 retail units on the London Road in Salisbury (already a declared Air Quality Management Area) resulted in £45,000 being committed through a S106 agreement for implementation of air quality action plan measures and air quality monitoring.

### 3.6.2 Air quality monitoring

Section 106 agreements can be secured to require the operator or occupier to monitor emissions or concentrations of pollutants at off site locations. For example London local authorities have secured section 106 agreements to require developers to contribute to their borough wide air quality monitoring programmes. The council's view is that this as an appropriate mechanism in certain situations where there is concern development may or will have a detrimental impact on air quality. In these cases, capital funding may be sought for the purchase, installation, operation or maintenance of new equipment.

### 3.7 Community Infrastructure Levy (CIL)

The Community Infrastructure Levy can be charged on new developments in the area. The money can be used to support development by funding infrastructure that the council, local community and neighbourhoods want.

Funding is being sought through CIL in respect of Air Quality Action Planning. Funding will assist in improving Air Quality within AQMAs bringing about reductions of levels of nitrogen dioxide and fine particulates to EU standards and also implement measures to prevent areas of elevated pollution being declared AQMAs.

It is the wish of Wiltshire council to work constructively with developers to foster a diverse and thriving economy and to safe guard public health. The CIL provides a mechanism for achieving these outcomes.

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# Appendix 1

## Core Policy 55: Air quality

Air quality in Wiltshire is predominantly good with the majority of the county having clean unpolluted air. There are however a small number of locations where the combination of traffic, road layout and geography has resulted in exceedences of the annual average for nitrogen dioxide (NO<sub>2</sub>) and fine particulates (PM<sub>10</sub>).

It is recognised that improving air quality in these specific locations is difficult due to the increased use and reliance on private motor vehicles. This strategy seeks to contribute to addressing this issue through a multifaceted approach which includes locating new development where there is a viable range of transport choices, seeking to boost the self containment of settlements to reduce commuter flows and through seeking to utilize the benefits from managed development and growth to take the opportunities to help address the areas where particular problems occur. This latter solution will be delivered through developer contributions.

In order to help developers and communities overcome this issue the council has produced a comprehensive Air Quality Strategy, which is a high level guiding document to inform policy and direction across a range of council services with the aim to improve air quality. The Air Quality Strategy(63) 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 between the council, external organisations and the community to address localised areas of poor air quality in the area. It includes a 17 point plan which focuses on strategic actions to help deliver improved air quality.

### **Air Quality Strategy for Wiltshire, main aim:**

'Wiltshire Council working collaboratively will seek to maintain the good air quality in the county and strive to deliver improvements in areas where air quality fails national objectives in order to protect public health and the environment'

Core Policy 55 requires that all development which either 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, will be produced which will give positive advice to prospective developers on how to address the issue of air quality effectively so their investment can go ahead(64). Development which could potentially impact upon Natura 2000 sites through contributions to aerial deposition e.g. industrial process within 10km of a SAC, will require an assessment of the likely impacts in accordance with published guidance. Where mitigation is required this may be delivered through a local emissions strategy.

## **Core Policy 55**

### **Air Quality**

Development proposals which by virtue of their scale, nature or location are likely to exacerbate existing areas of poor air quality, will need to demonstrate that measures can be taken to effectively mitigate emission levels in order to protect public health, environmental quality and amenity. Mitigation measures should demonstrate how they will make a positive contribution to the aims of the Air Quality Strategy for Wiltshire and may include:

- i. landscaping, bunding or separation to increase distance from highways and junctions
- ii. possible traffic management or highway improvements to be agreed with the local authority
- iii. abatement technology and incorporating site layout / separation and other conditions in site planning
- iv. traffic routing, site management, site layout and phasing.

**Targets:** No applications permitted contrary to the advice of Wiltshire Council on the grounds of air pollution that cannot be mitigated.

**Monitoring and Review:** Air Quality Strategy Implementation Plan.

**Delivery Responsibility:** Wiltshire Council.

## Core Policy 41: Climate change

### Core Policy 41

#### **Sustainable construction and low-carbon energy Climate change adaptation**

New development, building conversions, refurbishments and extensions will be encouraged to incorporate design measures to reduce energy demand. Development will be well insulated and designed to take advantage of natural light and heat from the sun and use natural air movement for ventilation, whilst maximising cooling in the summer. This should be achieved by use of the following means as practicable:

- i. orientating windows of habitable rooms within 30 degrees of south and utilising southern slopes
- ii. locating windows at heights that allow lower sun angles in the winter and installing shading mechanisms to prevent overheating during summer months
- iii. using soft landscaping, including deciduous tree planting, to allow natural sun light to pass through during the winter months whilst providing shade in the summer
- iv. integrating passive ventilation, for example wind-catchers installed on roofs and
- v. planting green roofs to moderate the temperature of the building to avoid the need for mechanical heating and/or cooling systems.

#### **Sustainable construction**

New homes (excluding extensions and conversions) will be required to achieve at least Level 3 (in full) of the Code for Sustainable Homes, progressing to Code Level 4 (in full) from 2013 and Level 5 (in full) from 2016<sup>2</sup>.

Conversions of property to residential use will not be permitted unless BREEAM's Homes "Very Good" standards are achieved<sup>2</sup>.

All non residential development will be required to achieve the relevant BREEAM "Very Good" standards from 2013, rising to the relevant BREEAM "Excellent" standards from 2019<sup>2</sup>.

#### **Existing buildings**

Retrofitting measures to improve the energy performance of existing buildings will be encouraged in accordance with the following hierarchy:

- vi. reduce energy consumption through energy efficiency measures
- vii. use renewable or low-carbon energy from a local/district source and
- viii. use building-integrated renewable or low-carbon technologies.

Opportunities should be sought to facilitate carbon reduction through retrofitting at whole street or neighbourhood scales to reduce individual costs, improve viability and support coordinated programmes for improvement.

### **Renewable and low-carbon energy**

All proposals for major development<sup>3</sup> will be required to submit a Sustainable Energy Strategy alongside

the planning application outlining the low-carbon strategy for the proposal. It is expected that proposals for larger scale residential development of 500 units or more will be viable to meet

zero-carbon standards from 2013<sup>4</sup>. Where this is not deliverable, the Sustainable Energy Strategy should clearly demonstrate why this is not achievable.

In all cases, including those listed above, proposals relating to historic buildings, Listed Buildings and buildings within Conservation Areas and World Heritage Sites should ensure that appropriate sensitive approaches and materials are used. Safeguarding of the special character of heritage assets should be in accordance with appropriate national policy and established best practice<sup>1</sup>.

In all cases the impact of these requirements on the viability of development will be taken into consideration.

<sup>1</sup>*Detailed design guidance will be prepared by the Council to assist with the selection of appropriate technologies and will cover sustainable construction and low-carbon energy generation, including appropriate approaches for historic buildings and buildings within Conservation Areas.*

<sup>2</sup>*For residential development post-construction Code for Sustainable Homes assessments will be required which must be undertaken by an accredited assessor. For conversions and for non residential development an appropriate post-construction BREEAM assessment will be required which must also be undertaken by an accredited assessor. Replacements for the BREEAM standards are being developed and this policy will apply the equivalent replacement standards. The policy will also apply to any future replacements to the Code for Sustainable Homes.*

<sup>3</sup>*The term 'major development' is taken to be as defined by the Town and Country Planning (Development Management Procedure) (England) Order 2010.*

<sup>4</sup>*The term 'zero-carbon' will be in accordance with the definition published by central government.*

**Targets:** All new development meeting the targets set by the policy.

**Monitoring and review:** Percentage new development meeting the targets set out in the policy to be monitored through the Wiltshire Monitoring Framework.

**Delivery responsibility:** Wiltshire Council, Development Industry.

## Appendix 2: Air Quality Assessment Toolkit

Throughout this Guidance the importance of communication between Local Authority officers and developers, or their consultants has been shown. It is hoped that this toolkit will clearly indicate what information is required to satisfactorily complete an AQ Assessment and what information needs to be agreed **prior** to the assessment taking place.

**Stage 1:** What information should initially be provided to the local authority in order to determine if there is a need for an Air Quality Assessment.

**Stage 2:** If after the information supplied above indicates that an AQ Assessment is required the following information will have to be agreed prior to the AQ assessment taking place.

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AQSPD001

## Air Quality Assessment Developer Notes

### Check if the proposed development is within one of the identified air quality planning zones

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Wiltshire Council has mapped planning zones where air quality needs to be considered when submitting a planning application. These zones can be viewed and downloaded from the Wiltshire Council website along with the air quality supplementary planning guidance document.

### Agree traffic data with Wiltshire Council prior to use within the air quality assessment

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Where a transport assessment (TA) has been prepared for a proposed development, modelled or predicted development traffic flows in the TA should generally be used as the basis for the calculation of 'with development' emissions and in subsequent model runs. **Before an air quality assessment based on a TA is undertaken, the TA should be approved by Wiltshire's traffic planners, in consultation with their air quality team.** If this does not happen, developers risk undertaking an air quality assessment on the basis of traffic proposals that may subsequently change, risking the assessment becoming obsolete. Through liaising with traffic engineers and dispersion model users, it is usually possible to obtain traffic data in a suitable format to perform an emissions calculation.

### Choose a model appropriate for the scenario being modelled

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Dispersion models should be used in almost all cases for large developments, or those developments proposed in areas where air quality is approaching or exceeding the relevant standards or objectives. DEFRA guidance *LAQM.TG (09)* suggests models that can be used for air quality assessments – we recommend contacting Wiltshire Councils Air Quality Officer to discuss this issue further. The model should be capable of taking into account all relevant emission sources within the locality, for example; line (major road) and area (minor road, domestic heating, individual boilers, commercial etc.) sources. The application should also be able to include point sources (i.e., chimney stacks) from nearby industrial sources. Where relevant the model should be able to determine the effect of height on air pollutant concentrations, if relevant for the planning application under consideration.

### Validate the model to measured pollutant concentrations

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Wiltshire Council undertakes monitoring of nitrogen dioxide using diffusion tubes and/or continuous monitors. Upon request the results from these monitoring studies can be made available. Some results are also available on our website. It may however be necessary for developers to carry out their own monitoring studies depending on the size of the development, location, pollutant to be modelled and availability of monitoring for that area. If consultants wish to use their own data then



we would require all analysis to conform to best practice. We recommend you contact Wiltshire Councils Air Quality Team to discuss this issue further.

## **Include the effects of local, committed developments both within and outside the Wiltshire Council boundary**

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Where practical these should include uncommitted developments that planning officers consider are likely to proceed

## **Account for background pollution**

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Wiltshire Council may be able to provide monitoring data on background pollutants. Please contact the Air Quality Officer for further information. The National Air Quality Archive data may also be used, as appropriate, with the agreement of Wiltshire Council

## **Use appropriate meteorological (MET) data**

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Weather data should be taken from an appropriate and representative site with a full dataset; in Wiltshire this is RAF Boscombe Down. At least one year of hourly-sequential data should be used. In adopting a precautionary approach, it is currently recommended that suitable 'worst case' MET year be used, as well as a 'typical' MET year from data within 5 years of the assessment being carried out.

## **Model for all relevant pollutants**

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If the development is expected to affect traffic flows then model for particulates and nitrogen dioxide. If the development itself is a source of pollution then pollutants relevant to the polluting activity must be assessed along with particulates and nitrogen dioxide from the related increased traffic flows. Please contact Wiltshire Council for further advice.

## **Assess the existing air quality information**

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This can be undertaken from monitoring studies or modelling studies, or a combination of both. Wiltshire Council's annual air quality reports for DEFRA are available to download from the Wiltshire Council website.

## **Predict air quality levels relevant to the air quality objectives**

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Statistics need to be predicted relevant to the air quality objectives without the development in place for the year of development completion **and** predictions **with** the development in place for the year of development completion

## **Further information**

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For further information please contact the public protection team:  
PPS/RK/AQSPD001/Sep2012

AQSPD002

# Planning applications in areas of poor air quality

Areas of poor air quality may need to be considered in one of four ways:

## Considerations

| Considerations  | Y/N |
|---|-----|
| As areas which have been declared as an AQMA  |     |
| As areas adjacent to a declared AQMA  |     |
| As areas where concentrations are close to an air quality objective and the proposed development (or other planned developments in the area) could lead to breach of that objective |     |
| As areas where air quality is poor enough to breach one or more of the air quality objectives, but which has not been declared an AQMA due to previous lack of exposure             |     |

The decision as to whether or not an air quality assessment is required should take into account:

**The changes in traffic flows predicted to arise**

**The proposals for Combined Heat & Power (CHP) plant or stand alone boilers burning biomass**

**The air quality sensitivity of the area**

The following criteria are provided to help establish when an air quality assessment is likely to be considered necessary. The list is not exhaustive and other factors may determine that, in the Officers opinion, an air quality assessment is required. For those where a formal Environmental Impact Assessment (EIA) is required, there will be a need to assess the impact of PM<sub>2.5</sub> concentrations, along with those pollutants that effect ecosystems and vegetation, where appropriate.

## Assessment Criteria

| Assessment criteria  | Y/N |
|--|-----|
| Proposals that will generate or increase traffic congestion, where 'congestion' manifests itself as an increase in periods with stop start driving |     |

|   |  |
|---|--|
| Proposals that will give rise to a significant change in either traffic volumes, typically a change in annual average daily traffic (AADT) or peak traffic flows of greater than $\pm 5\%$ or $\pm 10\%$ , depending on local circumstances (a change of $\pm 5\%$ will be appropriate for traffic flows within an AQMA), or in vehicle speed (typically of more than $\pm 10\%$ kph), or both, usually on a road with more than 10,000 AADT (5,000 if 'narrow and congested) |  |
| Proposals that would significantly alter the traffic composition on local roads, for instance, increase the number of HDVs by say 200 movements or more per day, due to the development of a bus station or an HGV park   |  |
| Proposals that include significant new car parking, which may be taken to be more than 100 spaces outside an AQMA or 50 spaces inside an AQMA. Account should also be taken of car park turnover, i.e. the difference between short-term and long-term parking, which will affect the traffic flows into and out of the car park. This should also include proposals for new coach or lorry parks.  |  |
| Introduction of new exposure close to existing sources of air pollutants, including road traffic, industrial operations, agricultural operations etc.   |  |
| Proposals that include biomass boilers or biomass-fuelled CHP plant   |  |
| Proposals that could give rise to potentially significant impacts during construction for nearby sensitive locations e.g. residential areas   |  |
| Large long-term construction sites that would generate large HGV flows (>200 movements per day) over a period of a year or more.  |  |
| Proposals that will lead to a new rail, road, roundabout, signalling, bridge, or tunnel development   |  |
| Proposals that may impact upon the Local Transport Plan air quality actions, AQMA Action Plan measures, or those actions listed in the Wiltshire Air Quality Strategy   |  |
| Local Development Framework sites   |  |
| Proposals forming part of a major phased redevelopment of an area   |  |
| Developments with direct emissions into a street canyon (narrow streets where the height of buildings on both sides of the road is greater than the road width)   |  |
| Developments creating a street canyon or that enclose roads and reduce dispersion of pollutants   |  |
| New industrial development (which may include processes governed by the Environmental Permitting regime)  |  |

### Further information

For further information please contact the public protection team:  
PPS/RK/AQSPD002/Sep2012

AQSPD003

# Information to be reported in an air quality assessment

Please complete the form and attach to your air quality assessment submission

|                                  |  |
|----------------------------------|--|
| Planning Officer                 |  |
| Location of proposed development |  |
| Planning Application Number      |  |

## Minimum information to be reported in an air quality assessment

| Minimum Information to be reported in an air quality assessment   | Provided Y/N/NA |
|---|-----------------|
| Credentials of the consultant undertaking the investigation and the quality control procedures that the document has been subject to.   |                 |
| Relevant details of the proposed development including a map of the area and basic site layout. Local sensitive receptors should be identified.   |                 |
| Policy context for the assessment, summarising the national, regional and local policies to be taken into account in the assessment.  |                 |
| A description of the relevant air quality standards and objectives.   |                 |
| The basis for determining significance of impacts. The descriptors used to describe impacts should be set out, together with the basis for determining the significance of the air quality impacts.   |                 |
| A description of the methodology or model used.   |                 |
| Details of any monitoring undertaken.   |                 |
| Source of emissions data and details of any extra emissions calculations.   |                 |
| Data - sources included, input parameters specific to the model and site, meteorological data with a description of how representative it is of conditions in the vicinity of the proposed development, traffic data, type of plant, stack parameters: height, diameter, emission velocity and exit temperature, choice of baseline year (high or low pollution year), baseline pollutant concentrations, background pollutant concentrations, basis for NO <sub>x</sub> :NO <sub>2</sub> calculations. Whether a road has been treated as a "canyon". All data should be referenced. |                 |
| The years modelled  |                 |

|   |  |
|---|--|
| Results of the modelling assessment   |  |
| Evidence of model performance or validation results for all traffic modelling.  |  |
| Summary of results and assessment against relevant air quality objectives to include identification of whether the development will compromise or render inoperative the measures within an Air Quality Action Plan, where the development affects an AQMA. All working should be to three significant figures. Any rounding of the data should be done after any calculations have been carried out. |  |
| Model output data, on maps where appropriate  |  |
| Impact of demolition and construction stage and a Dust Action Plan, where appropriate.  |  |
| Results of odour assessment, where relevant.  |  |
| Recommendations for development redesign, mitigation or offsetting.   |  |
| Discussion of results.  |  |
| Determination of significance.  |  |
| Conclusions.  |  |

## Further information

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For further information contact the public protection team  
PPS/RK/AQSPD003/Sep2012

AQSPD004

# Criteria for assessing the adequacy of air quality assessments

## Internal use Criteria

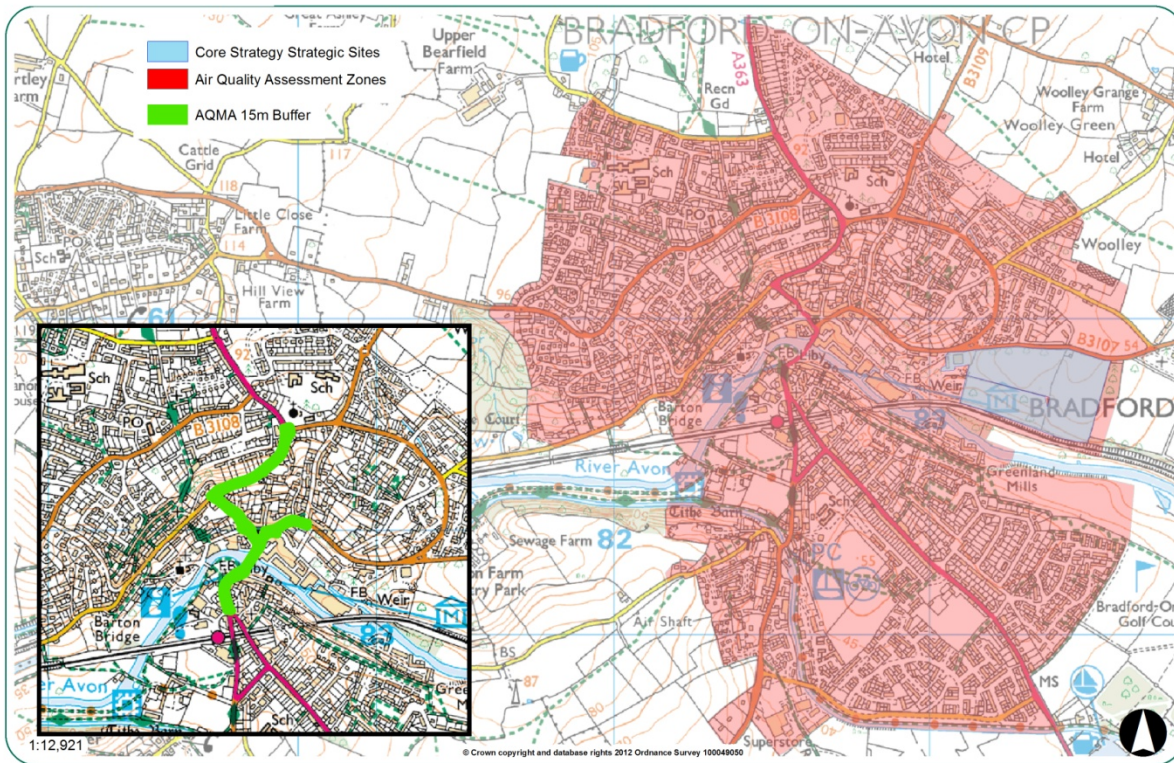
| <b>Monitoring Data</b>   |   |     |
|--|---|-----|
| Adequacy of baseline information   | Monitoring locations described?                 | Y/N |
|  | Relevant exposure considered?                   | Y/N |
| Adequacy of QA/QC information  | Bias adjustment of NO <sub>2</sub> tubes?       | Y/N |
|  | Other QA/QC information?                        | Y/N |
| <b>Modelling Procedures</b>  |   |     |
| Has an appropriate model been used?  |   | Y/N |
| Has the model been appropriately verified?   |   | Y/N |
| Are the modelling scenarios and projections appropriate?                                       |   | Y/N |
| Have suitable on and off-site receptors been selected, including those which are 'worst case'? |   | Y/N |
| Adequacy of input data   | Traffic and emissions data?                     | Y/N |
|  | Meteorological data?                            | Y/N |
|  | Background concentrations?                      | Y/N |
|  | NO <sub>x</sub> : NO <sub>2</sub> relationship? | Y/N |
|  | Other relevant input data?                      | Y/N |
| <b>Presentation and Assessment of Results</b>  |   |     |
| Are appropriate pollutants and/or objectives considered?                                       |   | Y/N |
| Have correct units been used?  |   | Y/N |

|   |  |     |
|---|--|-----|
| Do the predicted concentrations and changes in concentrations appear reasonable?  |  | Y/N |
| Have the changes in concentrations been adequately described?   |  | Y/N |
| Are the impacts assessed in relation to appropriate air quality objectives and EU limit values?   |  | Y/N |
| Has the significance of the impacts been described?   |  | Y/N |
| Has consideration been given to impacts on neighbouring Local Authorities?  |  | Y/N |
| <b>Other Information</b>  |  |     |
| Are the potential impacts described appropriately?  | Pollutant sources?   | Y/N |
|   | Expected changes to traffic volumes, composition, speed etc? | Y/N |
| Have construction phase impacts, including duration, activities to be carried out and properties likely to be affected been adequately described? |  | Y/N |
| Have the necessary mitigation measures been described?  |  | Y/N |
| Has consideration been given to the likely impacts of the development on the implementation of the Air Quality Action Plan?                       |  | Y/N |

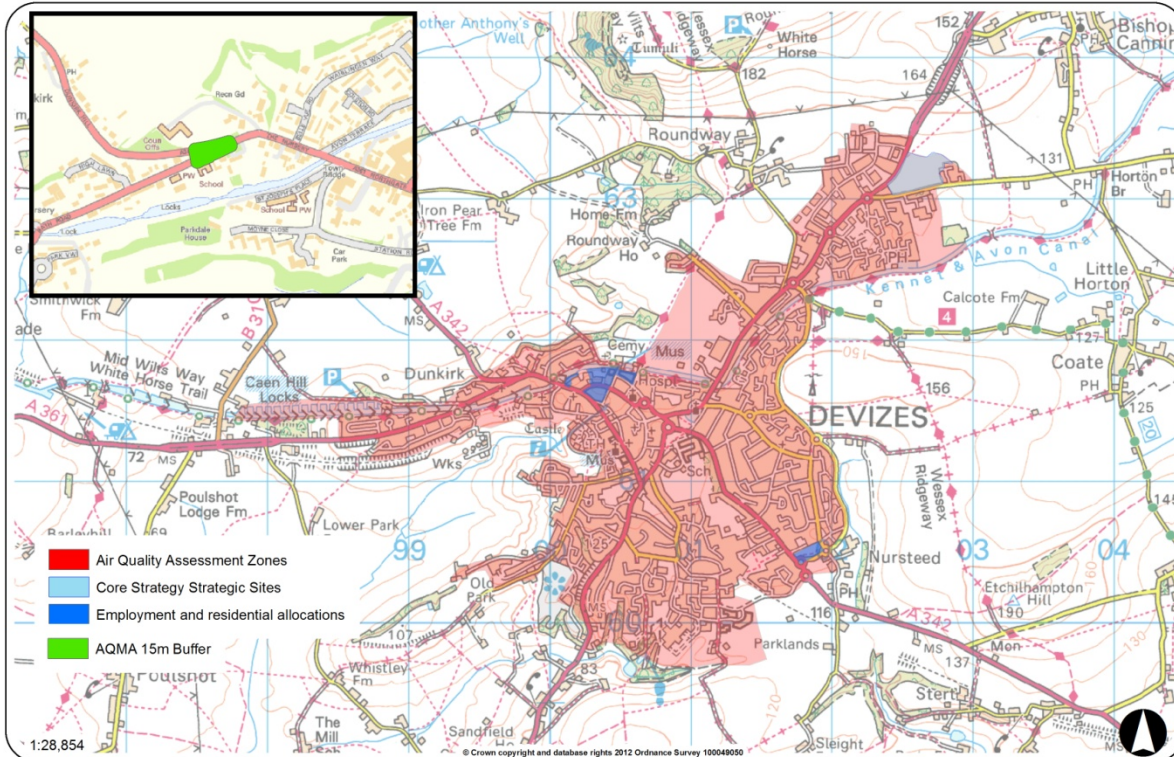
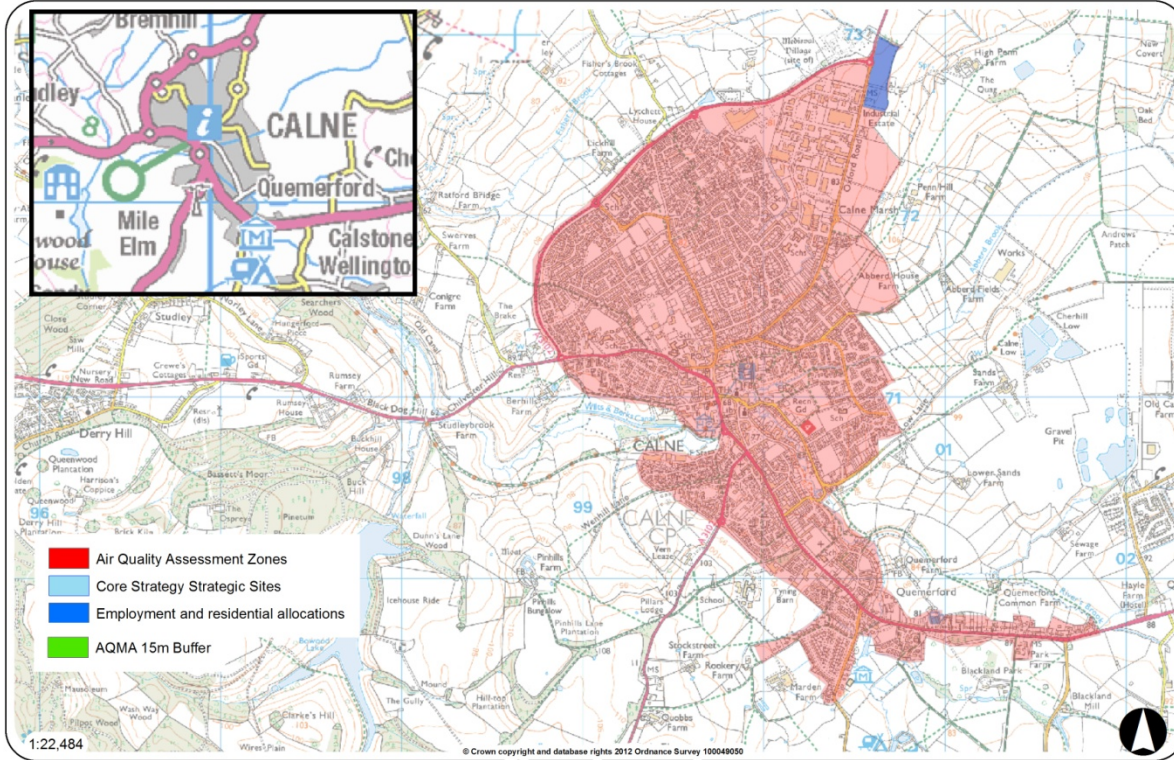
# Planning Zones

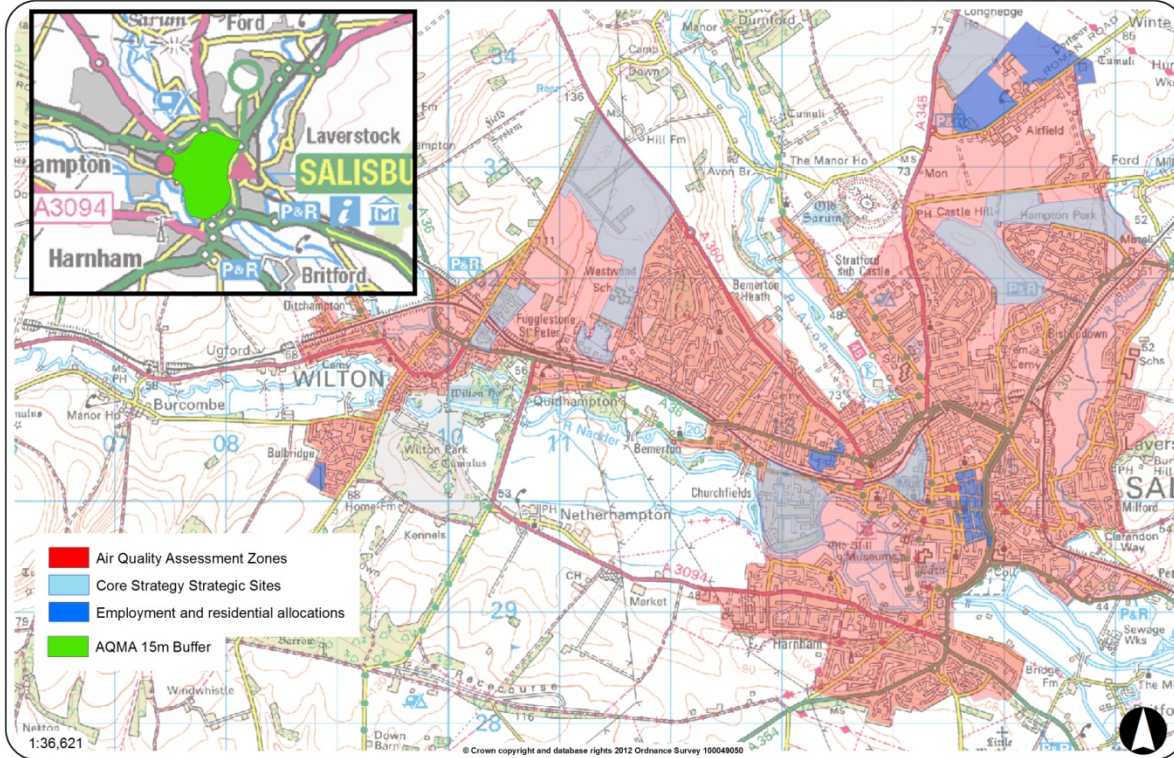
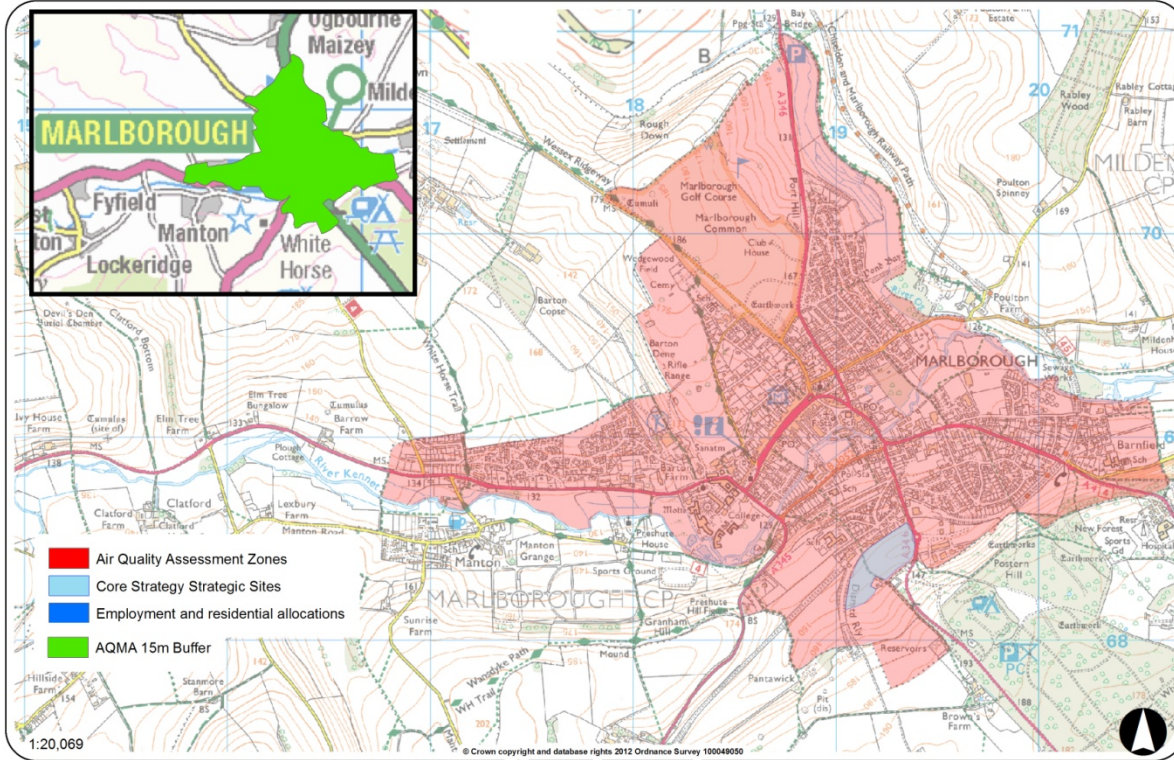
Not to be included in the actual supplementary planning document.

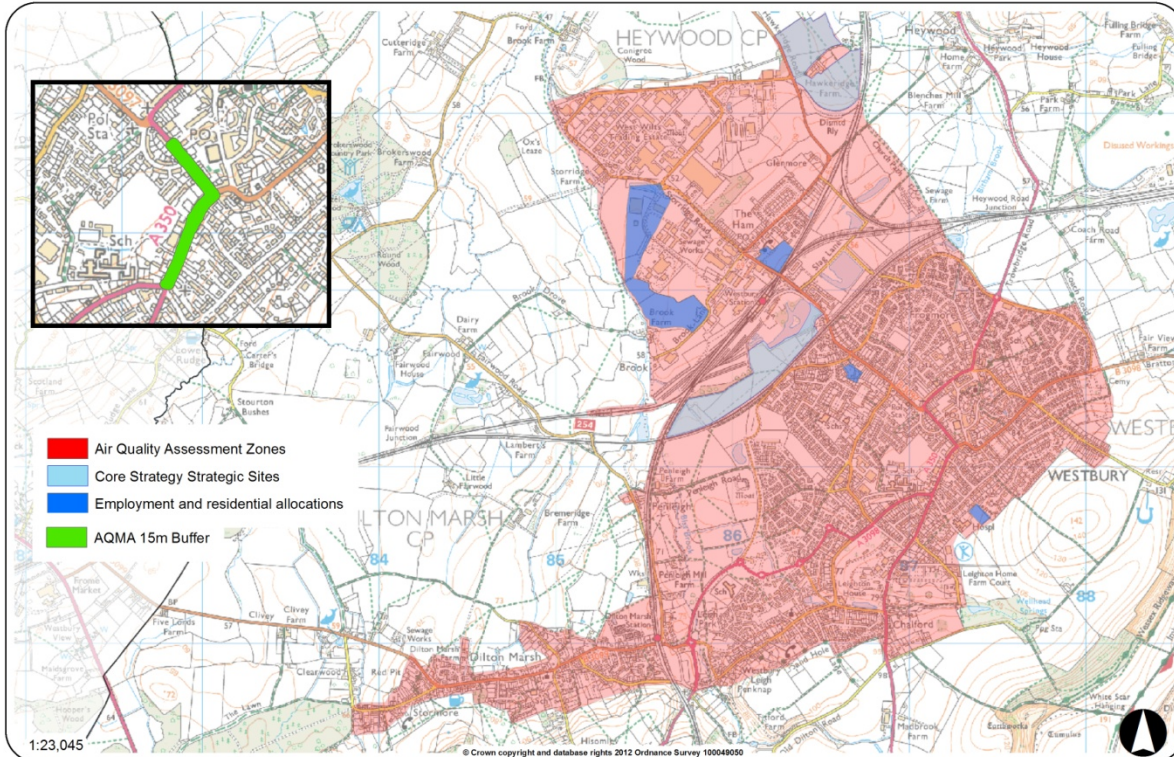
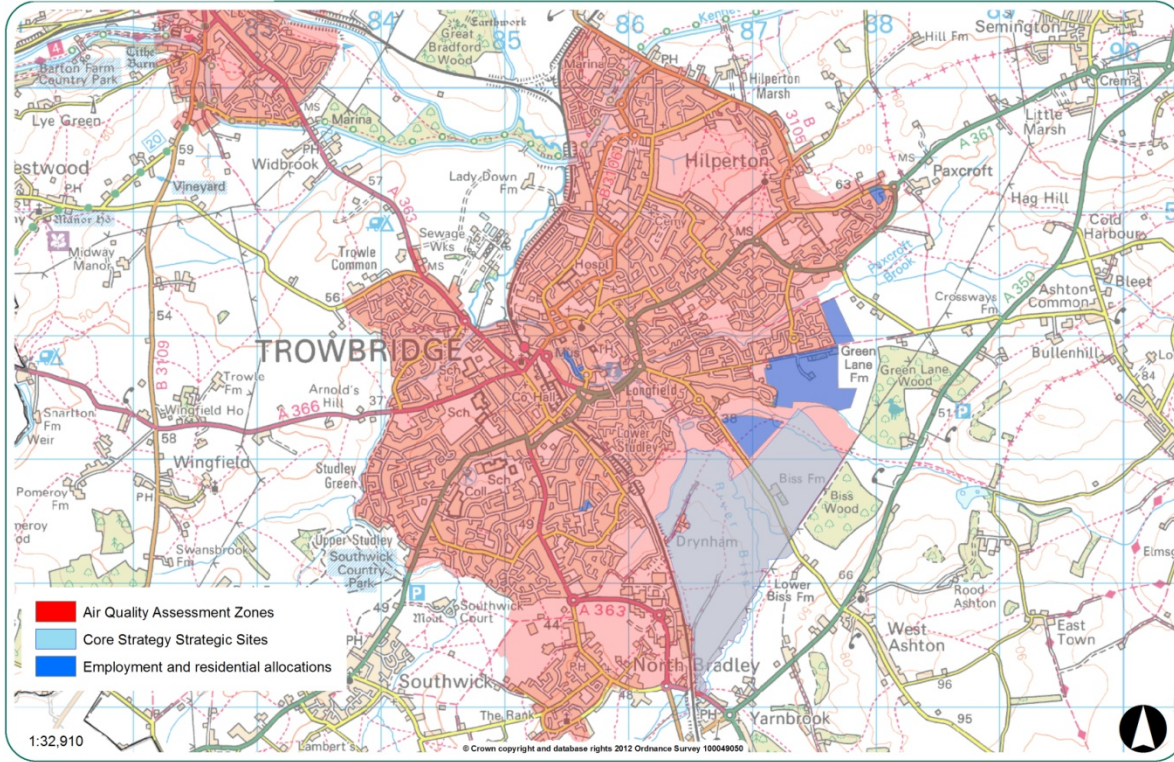
For illustrative purposes only











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