



Air Quality Strategy for Herefordshire and Worcestershire

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Executive Summary

Local authorities have a duty under the Environment Act 1995 to review and assess local air quality within their areas, against a set of health-based air quality objectives. Herefordshire Council and the local authorities of Worcestershire, whilst fulfilling their statutory responsibilities and obligations under the Local Air Quality Management regime, have also recognised a need to develop a more holistic and unified approach to managing local air quality across the two Counties. The Herefordshire and Worcestershire Pollution Group has therefore initiated the preparation of a cross-County Herefordshire and Worcestershire Air Quality Strategy (AQS). The improvement of air quality requires input from a wide range of planning and other professions. Therefore this AQS identifies commitments, particularly for communication and co-operation within and between local authorities, external organisations and the community. The commitments are grouped under a number of relevant policy sectors, including air quality, planning, transport, climate change and energy management, health and education, industry and domestic sectors.

It has been recognised that the effectiveness of any strategy should be monitored periodically to ensure the aims and objectives are being met. To this effect, a number of indicators have been included, as well as a commitment to review the strategy. The indicators include those relating directly to air quality concentrations, as well as Local Transport Plan indicators, national indicators and targets relating to climate change gas emissions.

Section 2 of this report includes a number of other policy areas which will be crucial to the improvement of air quality across Herefordshire and Worcestershire. The gradual integration of air quality into these other policy areas will ensure that air quality is considered at all levels of decision making. As other strategies and policy processes are gradually updated, it is hoped that this strategy will be used as a key document in the provision of information about air quality. As such, this strategy will need to be kept updated through regular reviews.

1 Introduction

- 1.1 Local authorities have a duty under the Environment Act 1995 to review and assess local air quality within their areas, against a set of health-based air quality objectives for a number of specific air pollutants. Since the publication of the National Air Quality Strategy in 1997, Herefordshire Council and the six local authorities of Worcestershire (Wyre Forest DC, Wychavon DC, Redditch BC, Worcester CC, Bromsgrove DC and Malvern Hills DC) have fulfilled their obligations to identify any areas where there is a likelihood of exceeding the objectives. Where exceedences exist, the local authorities are then required to declare Air Quality Management Areas (AQMAs) and to prepare Air Quality Action Plans (AQAPs) setting out measures to reduce concentrations of air pollutants in pursuit of the objective levels.
- 1.2 Herefordshire Council and the local authorities of Worcestershire, whilst fulfilling their statutory responsibilities and obligations to identify hot spots, have recognised a need to develop a more holistic and unified approach to managing local air quality across the two Counties. Herefordshire and Worcestershire Pollution Group has thereby initiated the preparation of a cross-County Herefordshire and Worcestershire Air Quality Strategy (AQS). The improvement of air quality requires input from a wide range of planning and other professions. Therefore this AQS identifies broad actions, particularly for communication and co-operation within and between local authorities and wider bodies and the community.
- 1.3 Information on policy processes relevant to air quality, and other background information, is included in a separate document (Part 2: Supporting Information).

2 Aims and Objectives of the Air Quality Strategy

2.1 The aims of an AQS are to support the achievement of air quality objectives and to raise air quality as an issue for consideration within a wide range of local government and regional planning frameworks. This is important because working towards achieving air quality objectives will help reduce the risk of the most serious health effects related to pollution. Additionally, for some pollutants there are currently no known safe levels for exposure (i.e. particles and benzene) and therefore reductions of pollutants already achieving air quality objectives can also improve the health of the population. By establishing a strategy framework for the inclusion of air quality considerations within council policies and procedures, a local authority is well placed to maintain good air quality and secure improvements in air quality.

2.2 The key advantages of developing and implementing an AQS at County-wide level can be summarised as follows:

- It provides greater consistency across a range of policy areas for the achievement of improved local air quality, including local planning, transport planning, health, industry, housing and environmental protection, and ensures air quality is addressed in a multi-disciplinary way within the different departments of a local authority and across Herefordshire and Worcestershire;
- It provides the framework for a consistent approach to addressing local air quality considerations in development control processes;
- It is a vehicle for developing a coherent air quality policy across Herefordshire and Worcestershire for local planning processes;
- It provides a link to wider initiatives across both the one and two-tier authorities (for example Local Transport Plans, Climate Change programmes, Community Plans and energy efficiency programmes), and
- It provides the platform for local air quality considerations in future rounds of Local Transport Plans.

2.3 Other advantages of an AQS are that it:

- Maintains the profile of air quality within local authorities at both District and County level, and ensures it remains on political agendas;
- Highlights the link between air quality and the risks to human health as well as to the local environment and biodiversity;
- Raises the profile of air quality amongst the local communities across Herefordshire and Worcestershire;
- Encourages greater co-operation and collaboration between neighbouring local authorities and Herefordshire Council and Worcestershire County Council;
- Complements other County-wide and local strategies and policies produced and supported by the local authorities in Herefordshire and Worcestershire;
- Encourages partnerships between local business, industry and the community, and
- Is the first point of contact and source of information relating to local air quality policy for regional bodies and others (for example, the Regional Development Agency, Highways Agency and Environment Agency).

3 Air Quality Across Herefordshire and Worcestershire

- 3.1 Air quality across Herefordshire and Worcestershire is generally good, although a number of authorities have, through the Review and Assessment process, identified locations that do not currently achieve air quality objectives. These locations and the context of air quality in each of the authorities are discussed below.

Herefordshire Council

- 3.2 Herefordshire Council concluded during its first round of review and assessment that air quality in Herefordshire was generally very good. It was however identified that the annual mean objective for nitrogen dioxide was likely to be exceeded along the A49 corridor through Hereford City Centre, which was subsequently declared an AQMA in 2001.
- 3.3 During the second round of review and assessment Herefordshire Council concluded that there was a likely exceedence of the annual mean nitrogen dioxide objective in Bargates, Leominster, which led to the declaration of this area as an AQMA. The third round of review and assessment has identified the need to declare a third AQMA along the A40 due to exceedences of the annual mean nitrogen dioxide objective, which is soon to be declared. It was confirmed that all the government objectives for air quality are likely to be met across the county at all other sites, except those within the existing or proposed AQMAs. In relation to the Hereford City AQMA, it was also found that the boundary may need to be revised in the future in view of improved pollution levels at Holmer Road and worsening pollution levels at Whitecross Road. This is currently under consideration and is to be reviewed in future reviews and assessments. Hereford City Air Quality Action Plan was released at the beginning of 2008 and proposes and models 15 actions which are designed to improve air quality in the city. Similarly, a public consultation exercise for a Bargates air quality action plan was undertaken over the 2005 to 2007 period, with a draft soon to be released for consultation. A public consultation exercise was also initiated to determine the extent of an A40 AQMA. This involves regular liaison with the Highway Agency who manage this trunk road.

Malvern Hills District Council

- 3.4 During the first round of review and assessment Malvern Hills District Council undertook a detailed study of nitrogen dioxide for two sites located adjacent to the M5 and the M50 together with a number of urban locations. This report concluded that nitrogen dioxide levels at these locations

were well below the national objectives and that there was no need to proceed further. Other objectives were assessed by a desk top study which concluded that no further action was required.

- 3.5 Subsequent reviews and assessments have reaffirmed that there have been no exceedences of the national air quality objectives across Malvern Hills.

Worcester City Council

- 3.6 During the first round of review and assessment Worcester City Council concluded that it was unlikely the air quality objectives would be exceeded. The second round of review and assessment confirmed that exceedences of the air quality objectives were unlikely; however, it identified two locations (Lowesmoor and Bridge Street) where it was necessary to undertake some further monitoring.

- 3.7 Monitoring results during the third round of review and assessment indicated that there were potential exceedences of the annual mean nitrogen dioxide objective at five locations in Worcester; Bridge Street, the Dolday, Whittington Road, Rainbow Hill and Lowesmoor. The Detailed Assessment concluded that Air Quality Management Areas should be declared for the nitrogen dioxide annual mean objective in the Bridge Street/Dolday, Lowesmoor, Rainbow Hill, and Newtown Road areas of Worcester. The AQMAs declared along Bridge Street and Lowesmoor are also to cover the 1-hour nitrogen dioxide objective, as annual mean concentrations are predicted to be above $60 \mu\text{g}/\text{m}^3$ at locations relevant to the objective. Modelling in the Whittington Road area has indicated that there are no exceedences of the annual mean nitrogen dioxide objective at the worst-case relevant locations, and thus no AQMA is required in this area.

Wychavon District Council

- 3.8 During the first and second rounds of review and assessment Wychavon District Council concluded that there were unlikely to be any exceedences of the objectives and that the air quality in the area was satisfactory.
- 3.9 The third review and assessment, indicated that the annual mean objective for nitrogen dioxide was being exceeded at Swan Lane and Port Street, Evesham, and a detailed assessment was subsequently undertaken by the Council. The risk of exceedences of the annual and daily mean PM_{10} objectives in Hartlebury was also assessed, due to the presence of a number of significant potential sources in the vicinity of residential properties. The assessment concluded that the objectives were not being exceeded at Swan Lane or Hartlebury, however an AQMA should be

declared along Port Street, between the Waterside/Port Street traffic lights and the Shore Street junction.

3.10 The formal boundary and AQMA order for Port Street was finalised in August 2007. Wychavon District Council is currently carrying out a further assessment to confirm the original findings and the boundaries of the AQMA. Following completion, Wychavon District Council will develop an Action Plan aiming to reduce the concentration of nitrogen dioxide within the AQMA. The 2008 Progress Report concluded there was no change to this position.

3.11 **Wyre Forest District Council**

3.12 During the first round of review and assessment Wyre Forest District Council concluded that annual mean nitrogen dioxide concentrations in two particular areas of the district were likely to exceed the 2005 Objective. Subsequently, the Council declared two AQMAs one at Welch Gate, Bewdley and the other at the Horsefair, Kidderminster. Proposals to improve air quality within these AQMAs through traffic management and other measures are contained within the Local Transport Plan and Air Quality Action Plan.

3.13 In the second round of review and assessment Wyre Forest District Council concluded that there were no exceedences of the air quality objectives outside the existing AQMAs. However, the third round of review and assessment identified the need for detailed assessments of nitrogen dioxide along Coventry Street and sulphur dioxide at Bewdley Station, due to potential exceedences of the 15-minute mean sulphur dioxide objective with respect to idling emissions from the coal fired steam locomotives of the Severn Valley Railway. The Detailed Assessment was undertaken and monitoring and modelling has confirmed that the nitrogen dioxide annual mean objective is being exceeded at properties alongside Coventry Street and the Ringway. The AQMA declaration is underway. The sulphur dioxide Detailed Assessment was delayed due to flooding in Summer 2007 and the subsequent closure of the heritage railway.

Redditch Borough Council

3.14 During the first and second rounds of review and assessment Redditch Borough Council concluded that there will be no exceedences of air quality objectives within the borough. However, monitoring undertaken during the third round of review and assessment has indicated that there is the potential for exceedences of the annual mean nitrogen dioxide objective at some sites within the borough. These sites are generally not representative of exposure and therefore are not to be considered further in a Detailed Assessment. In some locations, monitoring will be moved to facades of relevant buildings. One site is, however, relevant for the annual mean nitrogen dioxide

objective. Exceedences will be confirmed in the next USA, after such time, a Detailed Assessment will be undertaken.

Bromsgrove District Council

- 3.15 During the first round of review and assessment Bromsgrove District Council concluded that the annual mean objective for nitrogen dioxide was likely to be exceeded at Lickey End, due to road traffic emissions from the M42 (Junction 1), and an AQMA was subsequently declared. The second round of review and assessment concluded that a detailed assessment was required for nitrogen dioxide due to road traffic emissions from the A38 Redditch Road (Aston Road Industrial Estate), A456/A491 Hagley, and the A38 Marlbrook Crossroads. The Detailed Assessment for these areas concluded that declaration of an AQMA was not warranted at any further locations.
- 3.16 The 2006 USA, commenced the third round of review and assessment. This concluded that a detailed assessment was required for nitrogen dioxide because of measured exceedences of the annual mean objective at the nearest receptors to 2 monitoring locations: 93 Redditch Road, Buntsford Hill and 78 Kidderminster Road, Hagley. The conclusions of the detailed assessment were to consider declaration of an AQMA along Redditch Road and recommended installation of a continuous analyser for a minimum 6 months period. A continuous monitor has been installed along Redditch Road in March 2008 to provide more detailed and accurate information on nitrogen dioxide concentrations at the closest receptors to the road. The detailed assessment predicted no exceedences in the Hagley area. However, the bias adjusted diffusion tube result for 2007 (reported in the 2008 Progress Report) at 78 Kidderminster Road, Hagley is showing a significant increase ($+5\mu\text{g}/\text{m}^3$) from the previous year, and this will require consideration in the light of the detailed assessment findings and risk of exceedence.
- 3.17 The 2008 Progress Report compared 2007 monitoring data against the relevant air quality objectives. Eight sites were showing exceedences of the annual mean NO_2 objective. Of these, 288 Birmingham Road and the co-location site with the continuous analyser at Junction 1 M42 are within the current AQMA. The Redditch Road, Buntsford Hill, Stoke Prior area and Kidderminster Road, Hagley have been subject to a detailed assessment in 2007.
- 3.18 The three remaining sites are at roadside sites in Bromsgrove town centre. These are at locations which represent relevant exposure and therefore further consideration is required to the risk of exceedence of the annual mean objective in a detailed assessment.

4 Strategy Commitments

4.1 In order to ensure that air quality improvements are brought about, both in locations where exceedences are currently predicted, and more generally over the two Counties, the Councils of Herefordshire and Worcestershire (including Worcestershire County Council) have signed up to the following commitments.

4.2 We, as the Councils of Herefordshire and Worcestershire, welcome the

- Opportunity for improving air quality through working with transport planners, land use planners, and the opportunity for influencing wider policy processes such as climate change, health and energy management.

4.3 We, as the Councils of Herefordshire and Worcestershire, commit to:

- Work with central government to contribute, at a local level, to the delivery of the UK Air Quality Strategy. This will be largely through the process of local air quality management in identifying areas exceeding air quality objectives and implementing action plans to improve air quality within these areas;
- Ensuring that areas currently achieving air quality objectives continue to do so;
- Continue monitoring local air quality;
- Participate in local and regional networks in pursuing improved air quality and consistent implementation of local air quality management;
- Ensuring that Council actions do not have a detrimental effect on air quality;

Planning and Air Quality

- Ensuring that air quality is considered as a material planning consideration within development control planning processes of the Councils through the implementation of the Supplementary Planning Document for Herefordshire and Worcestershire. Where deteriorations in air quality

due to a development (or developments) are predicted, to ensure measures to mitigate the effects are put in place;

- Require modelling and/ or monitoring to be undertaken to accurately assess the impacts of proposed development on local air quality;
- Ensuring that air quality is properly considered within planning policy processes, in particular within the LDF process, with the inclusion of a specific air quality policy where applicable;

Transport and Air Quality

- Work with transport planners within Herefordshire and Worcestershire to ensure that the air quality strategy within the Local Transport Plan is implemented and the LTP targets within the Herefordshire and Worcestershire LTPs are met;
- Work with the Highways Agency to ensure that air quality does not deteriorate across the trunk road network in Herefordshire and Worcestershire;
- Ensuring regular exchange of information between transport planners and air quality professionals relating to both air quality information and traffic information;
- Work to reduce emissions from each of the Council fleets, and those of their contractors in line with National Indicator NI194;

Climate Change and Energy Management

- Ensuring collaboration between the local air quality management regime and climate change regimes (both at local and regional level). This will be particularly important where actions are needed to improve either air quality or reduce climate change gas emissions, to ensure that potential wider impacts are considered at an early stage. In most cases there should be synergies between actions required for climate change and air quality improvements, but in some cases there may be conflicts;
- Work to support the implementation of the Worcestershire Climate Change Strategy and the Herefordshire Climate Change Strategy in order to achieve the Greenhouse Gas emissions reductions targeted within these strategies;

- Promoting energy efficiency measures both within the Council buildings and within external organisations.

Health and Education

- Investigating mechanisms to forge better links with the Herefordshire PCT and the Worcestershire PCTs in order to investigate potential links and opportunities for the dissemination of information relating to air quality and health;
- Keeping the public informed of work relating to local air quality management in the Counties of Herefordshire and Worcestershire. This can be done via a number of mechanisms, both at the very local level (for example in specific AQMAs) or County wide (through the provision of a Herefordshire and Worcestershire air quality web site);
- Encouraging the local community to take actions which reduce personal contribution to local air quality emissions and CO₂ emissions;
- Improving the air quality information available for the public as well as specific stakeholders. This will include the provision of information in a number of formats to make it accessible to as many sectors of the population as possible;

Industry and domestic sources

- Providing advice and enforcing legislation for control of emissions from industrial sources;
- Providing advice and enforcing legislation for control of emissions from domestic sources;
- Working closely with the Environment Agency where any Part A installations contribute significantly to air quality;

Monitoring the effectiveness of this Strategy

- Monitoring the progress of our actions in implementing this strategy;
- Reviewing the Strategy on a regular basis (the document will be reviewed on an 18 month cycle). It is likely that the next review may include specific recommendations for each of the authorities.

5 Monitoring the success of the strategy

- 5.1 The effectiveness of any strategy should be monitored periodically to ensure the aims and objectives are being met. Indicators can be used to monitor the effectiveness of a strategy, and should be easy to use and transparent in their use.
- 5.2 Air quality management and actions to improve air quality need to be implemented by a range of stakeholders. The implementation of any air quality strategy should therefore be dependent on meeting the needs of the community to which it relates. Communication and collaboration is the key to ensuring that measures arising from this strategy are implemented. The continued work of the Herefordshire and Worcestershire Pollution Group is central to the implementation of this strategy, and the group will require input from the wider stakeholders identified in this report to ensure that implementation of the Strategy remains an active and ongoing process.
- 5.3 There are a number of possible indicators to use in monitoring the effectiveness of the strategy. Some indicators may provide direct evidence for improving air quality, with others providing an indication of changes in other policy areas which are likely to improve air quality.

AQ Monitoring

- 5.4 The local authorities of Herefordshire and Worcestershire have a network of monitoring sites which could be used to directly report on trends in air pollutant concentrations. Some indicators of air quality include:
- Reductions in nitrogen dioxide concentrations within AQMAs in Herefordshire and Worcestershire;
 - Number of days when air pollution is moderate or higher¹.

LTP indicator

- 5.5 For both the current Herefordshire LTP and the Worcestershire LTP, the air quality target (LTP8) is to reduce concentrations within AQMAs to below 40 $\mu\text{g}/\text{m}^3$ by 2010/11. This is a stretching target and is also adopted by this strategy for consistency.

¹ NB only relevant at real time sites, but fits in with national indicator

National indicator on air quality in the Comprehensive Area Assessment

- 5.6 National Indicator 194 enables authorities to lead by example in reducing their own emissions of NO_x and PM₁₀ across the wider area of their authority, not just hotspots that have been designated as air quality management areas under Part IV of the Environment Act 1995.
- 5.7 The air quality performance indicator, NI 194: Air quality requires NO_x and primary PM₁₀ emissions through authority's estate and operations. This is also used as an indicator for this strategy.

Climate Change Gas Emissions

- 5.8 Both Herefordshire and Worcestershire include in their current Local Area Agreements a reduction in climate change gas emissions, however, there are no targets relating to air quality directly. In Worcestershire the target is to reduce Climate Change gas emissions across the County by a minimum of 10% from 2005 levels by 2011 and 20% by 2020. In Herefordshire, the Climate Change Strategy includes a target to reduce greenhouse gas emissions in line with the UK's Energy White Paper: a 60% reduction in CO₂ emissions from 1990 levels by 2050. These are also used as indicators for this strategy in the two counties.

Other strategy targets

Local Area Agreements

- 5.9 The Worcestershire Partnership delivers the Worcestershire's Local Area Agreement and Community Strategy. The Theme Groups within the partnership and are responsible for turning strategy into practice. One such theme group is WPEG (Worcestershire Partnership Environment Group). WPEG's aims are to advance the environmental threads of the Community Strategy, to act as Worcestershire's environmental voice in the county and the region, and to act as the primary advisor to the Worcestershire Partnership on natural and built environment matters. WPEG produces an annual 'State of the Environment' report to monitor a series of indicators. These indicators are drawn from each of the other task groups and specifically includes new indicators relating to air quality specified below:
- Reduce nitrogen dioxide concentrations within AQMAs within Worcestershire (below 40µg/m³)
 - Reduce the number of days when air pollution is classified as 'moderate' or 'higher'
- 5.10 These targets complement those set out in paragraph 5.4.

Area wide vehicle mileage

- 5.11 Area wide vehicle mileage is reported as LTP mandatory indicator LTP2. In Herefordshire the indicator is to restrain growth in area wide vehicle mileage to 1% per year. In Worcestershire the target is a 17% increase over the period of the LTP.

Cycling

- 5.12 Cycling trips are reported as LTP mandatory indicator LTP3. In Herefordshire the indicator is to increase cycling trips by 18% from a 2003/4 base to 2010/11. In Worcestershire the target is to keep cycling at the same level as 2003/4.

Public Transport Patronage

- 5.13 Public Transport Patronage is included in the LTP as a Best Value Performance Indicator (BVPI102). In Herefordshire the indicator is a 1% increase in passenger trips per year by 2010/11 when compared with a 2003/4 base case. In Worcestershire the indicator is an increase from 13.6 million public transport trips (2003/4) to 13.7 million public transport trips in 2010/11.

Emissions from Council fleet

- 5.14 NI 194 incorporates targets for the percentage reductions in NO_x and primary PM₁₀ emissions from a local authority's estate and operations. This Strategy supports the specific targets in each of the authorities in question relating to NI194.

6 Conclusions

- 6.1 The development of this Air Quality Strategy for Herefordshire and Worcestershire signifies a recognition that improving local air quality is the responsibility of a range of stakeholders and professions. Although Environmental Health professionals are tasked with monitoring and assessment of air quality, the actions and measures necessary to reduce pollutant concentrations will remain with a wider-range of professionals and bodies.
- 6.2 Although future improvements in local air quality are predicted as a result of technological advances in vehicle engines and improved fuels, there is still a need to reduce the increasing reliance on private motor vehicle use and to provide access to improved public transport services and alternatives to private motor vehicles. Traffic accounts for the main source of emissions across the County, and accounts for all the AQMAs declared. As such, the implementation of the Local Transport Plans is fundamental to the improvement of local air quality, or maintenance of good air quality, across the region.
- 6.3 Section 2 of this report includes a number of other policy areas which will be crucial to the improvement in air quality across Herefordshire and Worcestershire. The gradual integration of air quality into these other policy areas will ensure that air quality is considered at all levels of decision making. As other strategies and policy processes are gradually updated, it is hoped that this strategy will be used as a key document in the provision of information about air quality. As such, this strategy will need to be kept updated through regular reviews.

7 Glossary

AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
BC	Borough Council
BVPI	Best Value Performance Indicator
CC	City Council
CO ₂	Carbon dioxide
DC	District Council
NI	National Indicator
LDF	Local Development Framework
LTP	Local Transport Plan
NO _x	Nitrogen oxides
PCT	Primary Care Trust
PM ₁₀	Particulate Matter of less than 10 µm in diameter