

# WEST WILTSHIRE DISTRICT COUNCIL



## LAQM PROGRESS REPORT 2007

### Combined Air Quality Review and Assessment and Air Quality Action Plan Progress Report

In accordance with Part IV of the Environment Act 1995, Local Air Quality Management

Produced with assistance from the Air Quality Management Resource Centre,  
University of the West of England, Bristol.



## Document Confirmation & Control Sheet

<b>CLIENT(S)</b>	West Wiltshire District Council, Wiltshire		
<b>UWE CONTACT</b>	Dr Enda Hayes, Air Quality Management Resource Centre Faculty of Applied Sciences University of the West of England, Frenchay Campus Coldharbour Lane, Frenchay, Bristol, BS16 1QY  Tel: 0117 32 83825 Fax: 0117 32 82132 Web: <a href="http://www.uwe.ac.uk/aqm">www.uwe.ac.uk/aqm</a>		
<b>COLLABORATION CONTACT</b>	N/A		
<b>PROJECT TEAM</b>	Dr Enda Hayes (UWE) (Contact)		
<b>DOCUMENT STATUS</b>	<b>STATUS</b>	<b>DATE</b>	<b>DESCRIPTION</b>
	Draft report	August 2007	Circulated for comments
	Final report	August 2007	Provided as pdf and hardcopy

## Table of Contents

Document Confirmation & Control Sheet .....	i
Table of Contents .....	ii
List of Tables .....	iii
List of Figures .....	iii
1: Introduction to the Air Quality Progress Report .....	1
1.1: Overall aims of a combined R&A and AQAP Progress Report .....	2
1.2: Introduction to West Wiltshire .....	2
1.3: Status of LAQM in West Wiltshire District Council .....	2
2: Review and Assessment Progress Report .....	4
2.1: Review and Assessment Progress Report – Minimum Requirements .....	6
2.1.1: Monitoring in West Wiltshire District Council .....	6
2.1.2: Monitoring data summary – diffusion tubes .....	6
2.1.3: Monitoring data summary – automatic monitoring .....	7
2.2: New local developments .....	8
2.2.1: New development summary .....	9
2.3: Review and Assessment Progress Report - Recommended Additional Elements .....	9
2.3.1: Additional Monitoring Data .....	9
2.3.2: Air Quality Action Plans .....	9
2.3.3: Wiltshire Air Quality Strategy Framework .....	9
2.3.4: West Wiltshire Planning Policy .....	9
2.3.5: West Wiltshire Planning Applications .....	10
2.3.6: Wiltshire County Council Local Transport Plan .....	11
2.4: Review and Assessment Progress Report Conclusions .....	12
3: Air Quality Action Plan Progress Report .....	13
Appendix 1: Review and Assessment Appendices .....	29
A1.1: Estimation of the 2006 NO <sub>2</sub> diffusion tube bias adjustment factor .....	29
A1.2: Air Quality Management Areas and monitoring locations in West Wiltshire .....	31
A1.3: NO <sub>2</sub> diffusion tube concentrations (2006) .....	34
A1.4: Automatic Analyser Monitoring Data for West Wiltshire 2006 .....	35
A1.5: QA/QC for monitoring undertaken by West Wiltshire District Council .....	37
A1.5.1: WASP Analysis for nitrogen dioxide diffusion tubes .....	37
A1.6: Nitrogen dioxide trends (NO <sub>2</sub> ) .....	39

**List of Tables**

Table 1: Minimum reporting requirements.....4

Table 2: Recommended additional reporting requirements.....4

Table 3: New monitoring summary for West Wiltshire District Council (2006). ....7

Table 4: New local developments in West Wiltshire District Council. ....8

Table 5: Population exposure within West Wiltshire AQMAs (Chapter 8, Wiltshire LTP) ..... 11

Table 6: Summary of the recommended additional elements with respect to air quality progress reporting in West Wiltshire District Council..... 12

Table 7: Air Quality Action Plan Progress Report 2007 – specific to Bradford on Avon AQMA ..... 13

Table 8: Air Quality Action Plan Progress Report 2007 – specific to Westbury AQMA..... 15

Table 9: Air Quality Action Plan Progress Report 2007 – generic options for both AQMAs. ... 17

Table 10: NO<sub>2</sub> diffusion tube data for all locations in West Wiltshire (2006) .....34

Table 11: Nitrogen dioxide automatic analyser data 2006 for Westbury, West Wiltshire .....35

Table 12: Particulates (PM<sub>10</sub>) automatic analyser data 2006 for Westbury, West Wiltshire.....35

Table 13: Sulphur dioxide automatic analyser data 2006 for Westbury, West Wiltshire .....36

Table 14: Nitrogen dioxide automatic analyser data 2006 for Bradford on Avon, West Wiltshire .....36

Table 15: WASP analysis results for Bristol Scientific Services, 2006.....38

**List of Figures**

Figure 1: Map of West Wiltshire and surrounding regions. ....3

Figure 2: Precision and Accuracy results for the Bradford On Avon co-location study 2006...30

Figure 3: Bias adjustment factor as estimated from the Bias Adjustment Factors Spreadsheet (v03/07).....30

Figure 4: Map of Bradford On Avon Air Quality Management Area and current monitoring locations.....31

Figure 5: Map of Westbury Air Quality Management Area and current monitoring locations...32

Figure 6: Map of Trowbridge current monitoring locations.....33

Figure 7: Comparison of NO<sub>2</sub> annual mean concentrations for two automatic monitors in West Wiltshire.....39

## **1: Introduction to the Air Quality Progress Report**

This Air Quality Progress Report forms part of the Local Air Quality Management (LAQM) system introduced by the Environment Act 1995 ('The Act') and subsequent Regulations. It is a requirement as part of the Act, and follows on from West Wiltshire District Council's Updating and Screening Assessment (USA) published in 2006.

The overall aim of this document is to report upon the ongoing implementation of Local Air Quality Management in the West Wiltshire District Council's administrative area, and progress made in maintaining concentrations below the air quality objectives. Progress Reports have been introduced into the LAQM system following a detailed evaluation of the first round (Round 1) of the local authority Review and Assessment process. Progress Reports are to be prepared in years when West Wiltshire District Council is not undertaking an Updating and Screening Assessment or a Detailed Assessment. It is intended that this Progress Report should assist West Wiltshire District Council in the following ways:

- Maintaining a profile for LAQM within West Wiltshire District Council;
- Providing a means for communicating air quality information to Council Members and the public;
- Maximising the usefulness and interpretation of the monitoring effort being carried out by West Wiltshire District Council;
- Maximising the value of the investment in monitoring equipment;
- Making the next round of Review and Assessment easier, as there will be a readily available up-to-date source of information;
- Assisting West Wiltshire District Council to respond to requests for up-to-date information on air quality;
- Providing information to assist with other policy areas, such as transport and land-use planning;
- Providing a ready source of information on air quality for developers carrying out environmental assessments for new schemes;
- Demonstrating progress with implementation of any Air Quality Action Plans or a Local/Regional Air Quality Strategy, and
- Providing a timely indication of the need for further measures to improve air quality, rather than delaying until the next full round of Review and Assessment.

Copies of this Progress Report have been sent to the Secretary of State, Environment Agency, the Highways Agency and other local authority departments for information and copies of the report have been made available to the public and local stakeholders.

### **1.1: Overall aims of a combined R&A and AQAP Progress Report**

This Progress Report has two main aims, as follows:

- To report on progress being made with the implementation of Local Air Quality Management in West Wiltshire District Council; and
- To report on progress in achieving, or maintaining concentrations below the air quality objectives.

New monitoring data within West Wiltshire District Council and new developments that might affect local air quality are the focus of the Review and Assessment section of this report, and are the minimum requirements for Review and Assessment progress reporting purposes. Progress in implementing the actions outlined in West Wiltshire District Council's AQAP are the focus of the AQAP section of this report, and are the minimum requirements for AQAP progress reporting purposes. Each is considered in turn, using the Progress Report Checklist made available by government on their air quality Review and Assessment Website (<http://www.uwe.ac.uk/aqm/review/index.html>).

### **1.2: Introduction to West Wiltshire**

West Wiltshire is a mixed authority with both urban and rural aspects. West Wiltshire District Council is bordered by the authorities of North Wiltshire (to the north), Salisbury (to the south), Kennet (to the east), Mendip (to the west), and shares a small border with Bath and North East Somerset (to the west) (Figure 1). West Wiltshire has an estimated population of nearly 117,600 predominantly based in the five largest towns of Bradford on Avon, Melksham, Trowbridge, Warminster and Westbury. No motorways run through the authority but there are several substantial A-roads.

### **1.3: Status of LAQM in West Wiltshire District Council**

West Wiltshire District Council's 2006 Updating and Screening Assessment concluded that a Detailed Assessment would not be required for any pollutant. As a result of this, West Wiltshire District Council has submitted this Review and Assessment Progress Report for 2007. Additionally, an Air Quality Action Plan Progress Report (AQAP-PR) is included to provide an update of progress with actions in West Wiltshire District Council's Air Quality Action Plan (AQAP).

West Wiltshire District Council currently has two Air Quality Management Areas (AQMA), both declared in November 2001. The Bradford on Avon AQMA was declared for exceedences of the annual mean nitrogen dioxide objective of  $40\mu\text{g}/\text{m}^3$  and the 24-hour  $\text{PM}_{10}$  objective of  $50\mu\text{g}/\text{m}^3$  not to be exceeded more than 35 times per annum due to transport sources (Figure 4,

Appendix 1). The Westbury AQMA was declared for exceedences of the annual mean nitrogen dioxide objective of  $40\mu\text{g}/\text{m}^3$  due to transport sources (Figure 5, Appendix 1). The Council submitted a Further Assessment (Stage 4) to Defra in November 2003 which concluded that the AQMAs were justified as declared (more information on this Further Assessment can be found at: <http://www.westwiltshire.gov.uk/index/env/pollution/air-pollution/air-quality/air-quality-reports-summaries/airqual-review-assmt-stg4-03.htm>). In 2005, West Wiltshire District Council produced an AQAP for both the Bradford on Avon and Westbury Air Quality Management Areas (this Air Quality Action Plan can be found at: [http://www.westwiltshire.gov.uk/complete\\_doc\\_action\\_plan\\_revised\\_aug\\_05.pdf](http://www.westwiltshire.gov.uk/complete_doc_action_plan_revised_aug_05.pdf))

Figure 1: Map of West Wiltshire and surrounding regions.



## 2: Review and Assessment Progress Report

Table 1 provides an indication of what is expected of local authorities in their Review and Assessment Progress Reports.

**Table 1: Minimum reporting requirements.**

<b>Monitoring data</b>	The minimum requirement is to report monitoring data and trends over recent years. To maximise the value of air quality monitoring, careful attention should be paid to the type of equipment used and the locations where the monitors are placed, as well as the QA/QC and data verification procedures.
<b>New developments</b>	A consideration of new development with the potential to affect local air quality (mainly through the generation of traffic), such as residential developments, industrial processes, retail premises, roads and quarries.

In addition to the minimum requirements, the government recommends that local authorities report upon a number of additional elements in their Progress Reports. These additional elements are listed in Table 2.

**Table 2: Recommended additional reporting requirements.**

<b>Additional monitoring data</b>	Projecting the measured concentrations forward to the objective years is helpful in providing early indication of likely exceedences that may not have been previously identified. Local authorities may also find it helpful to report on their monitoring for pollutants not covered by the regulations, e.g. ozone, polycyclic aromatic hydrocarbons (PAH), as well as other air quality data, i.e. odour complaints, dust deposition, radiation monitoring.
<b>Local or Regional Air Quality Strategies</b>	Government guidance strongly recommends that all authorities, particularly those without AQMAs but who have areas close to the exceedence levels, should consider drawing up a local air quality strategy. Progress Reports provide the opportunity for local authorities to report on the development of local or regional strategies. Local authorities should report upon the extent to which the local authority has developed or implemented an air quality strategy, how to access the strategy and when the strategy is to next be reviewed (as appropriate).

<p><b>Planning policy</b></p>	<p>Any relevant updates on planning policies that relate specifically to air quality. Policies such as the Local Development Framework (formerly Local Plans) determine the local authority approach to the relationship between planning and air quality, with new developments judged against these policies. Reference to any supplementary planning guidance to address air quality matters should be referenced.</p>
<p><b>Planning applications</b></p>	<p>A list of planning applications that have the potential to affect local air quality should be provided. The land-use planning system is recognised as playing an integral part in improving air quality. This requires close co-operation between planners and environmental health officers. Some local authorities have developed procedures to help ensure that planning applications that might have impacts on air quality are forwarded to the Environmental Health department for comment. Updating and Screening Assessments and Detailed Assessments should take account of planning applications that have been approved only. Progress Reports, however, provide the opportunity to log planning applications for new developments to give a picture of areas where changes may take place and where combined impacts from several developments may become important. The information provided should therefore include a list of any major developments under consideration that might affect air quality. Such a list could be based on those applications for which an air quality assessment has been provided or for which an air quality assessment has been requested.</p>
<p><b>Local Transport Plans and Strategies</b></p>	<p>Progress on implementing those elements of the Local Transport Plan (LTP) that might affect air quality should be provided. Measures to improve air quality on a local scale are closely related to the LTP. Local authorities should reference those measures within the LTP that relate specifically to bringing about air quality improvements. Local authorities should also report on any other measures aimed at addressing transport-related air quality issues that have not been (or will not be) reported in the LTP Annual Progress Report.</p>

## **2.1: Review and Assessment Progress Report – Minimum Requirements**

This chapter in conjunction with the report appendices provides the necessary information to fulfil the minimum requirements of West Wiltshire District Council's Review and Assessment Progress Report.

### **2.1.1: Monitoring in West Wiltshire District Council**

This report provides a summary of all available monitoring data for 2006 in a format suitable for comparison with the relevant air quality objectives. West Wiltshire District Council currently manages:

- Three automatic monitoring stations (NO<sub>2</sub>, PM<sub>10</sub> and SO<sub>2</sub>) and six nitrogen dioxide diffusion sites in Westbury (Figure 5, Appendix 1);
- One automatic analyser (NO<sub>2</sub>) and seven nitrogen dioxide diffusion tubes (three co-located at the automatic analyser) in Bradford On Avon (Figure 4, Appendix 1); and
- Two nitrogen dioxide diffusion tube sites in Trowbridge (Figure 6, Appendix 1).

The nitrogen dioxide diffusion tubes are 20% TEA in water supplied and analysed by Bristol Scientific Services. A description of the diffusion tube and automatic analyser monitoring locations can be found in Appendix 1. The tubes at all 15 locations through out the West Wiltshire District Council area have a monthly exposure period. A bias adjustment factor of 0.93 was applied based on the co-location study at Bradford On Avon (Appendix 1). Additionally, a description of the QA/QC procedures can be found in Appendix 1.

The following information has been included:

- Summary tables of monitoring concentrations that allow a comparison with the air quality objectives (see Table 10 to Table 14 in Appendix 1)
- Maps illustrating the monitoring locations (Figure 4, Figure 5 and Figure 6, Appendix 1)
- Plots illustrating trends in monitored concentrations, e.g. comparative plot of annual mean nitrogen dioxide concentrations (see Figure 7, Appendix 1).

### **2.1.2: Monitoring data summary – diffusion tubes**

- West Wiltshire District Council currently manages 15 nitrogen dioxide diffusion tubes at 13 locations (one triplicate co-location study) in their administrative area.
- The bias adjusted monitoring data for 2006 indicates an exceedence of the annual mean nitrogen dioxide objective of 40µg/m<sup>3</sup> at:

- Westbury - 76 Warminster Road, 90 Warminster Road and Haynes Road. All of these diffusion tubes are located within the current AQMA. The AQMA as declared is still justified.
- Bradford On Avon – Mason’s Lane. This diffusion tube is located within the current AQMA. The AQMA as declared is still justified.
- There were no other exceedences of the nitrogen dioxide annual mean objective of  $40\mu\text{g}/\text{m}^3$  based on diffusion tube monitoring.

### 2.1.3: Monitoring data summary – automatic monitoring

- West Wiltshire District Council does not monitor for Carbon Monoxide, Benzene, 1,3-butadiene or Lead.
- Nitrogen Dioxide ( $\text{NO}_2$ ): The two automatic nitrogen dioxide analysers (located in Bradford On Avon and Westbury) do not indicate an exceedence of the annual mean objective of  $40\mu\text{g}/\text{m}^3$  or a breach of the 1-hour nitrogen dioxide objective (see Table 11 and Table 14, Appendix 1).
- Particulates ( $\text{PM}_{10}$ ): The automatic  $\text{PM}_{10}$  analyser (located in Westbury) does not indicate an exceedence of the annual mean objective of  $40\mu\text{g}/\text{m}^3$  or a breach of the 24-hour  $\text{PM}_{10}$  objective (see Table 12, Appendix 1).
- Sulphur Dioxide ( $\text{SO}_2$ ): The automatic nitrogen dioxide analyser (located in Westbury) does not indicate a breach of the 15-minute, 1-hour or 24-hour sulphur dioxide objective.

**Table 3: New monitoring summary for West Wiltshire District Council (2006).**

<b>Carbon monoxide (CO)</b>	West Wiltshire District Council does not carry out any Carbon Monoxide monitoring. Their 2006 Updating and Screening Assessment did not identify any issues for this pollutant.
<b>Benzene</b>	West Wiltshire District Council does not carry out any Benzene monitoring. Their 2006 Updating and Screening Assessment did not identify any issues for this pollutant.
<b>1,3-butadiene</b>	West Wiltshire District Council does not carry out any 1,3-butadiene monitoring. Their 2006 Updating and Screening Assessment did not identify any issues for this pollutant.
<b>Lead (Pb)</b>	West Wiltshire District Council does not carry out any Lead monitoring. Their 2006 Updating and Screening Assessment did not identify any issues for this pollutant.
<b>Nitrogen dioxide (<math>\text{NO}_2</math>)</b>	West Wiltshire District Council currently manages 15 $\text{NO}_2$ diffusion tubes and 2 automatic analysers. All exceedences identified were

	within existing AQMAs, therefore no Detailed Assessment will be required for NO <sub>2</sub> .
<b>Particulates (PM<sub>10</sub>)</b>	West Wiltshire District Council undertakes PM <sub>10</sub> monitoring at one location within the Westbury AQMA. There were no exceedences identified during 2006. A Detailed Assessment will not be required.
<b>Sulphur dioxide (SO<sub>2</sub>)</b>	West Wiltshire District Council undertakes SO <sub>2</sub> monitoring at one location within the Westbury AQMA. There were no exceedences identified during 2006. A Detailed Assessment will not be required.

## 2.2: New local developments

This section considers any new developments and changes that have taken place, or are proposed, that may affect air quality. Such developments are logged so that they can be considered more thoroughly during the next full round of Review and Assessment. Table 4 provides details of relevant new developments in West Wiltshire District Council.

**Table 4: New local developments in West Wiltshire District Council.**

<b>New Part A/A2</b>	No new Part A/A2 processes have been identified that will significantly influence local air quality.
<b>New Part B</b>	No new Part B processes have been identified that will significantly influence local air quality
<b>New retail development</b>	No new retail developments have been identified that will significantly change traffic flows in the area or influence local air quality
<b>New road scheme</b>	Westbury bypass: Planning approval has been given for a bypass in Westbury. Work is due to start in 2008/2009, however it has been called in for a public enquiry so this will have an effect on the timescale. It is thought that this bypass should improve air quality around Warminster Road and Haynes Road, in the Westbury AQMA.
<b>New mineral development</b>	No new mineral developments have been identified that will significantly change traffic flows in the area or influence local air quality
<b>New landfill development</b>	No new landfill developments have been identified that will significantly change traffic flows in the area or influence local air quality
<b>New mixed-use development</b>	Wincanton site, Bythesea Road (opposite the Shires shopping centre), Trowbridge: Planning permission has been granted for a mixed use development. (Ref 06/01711/OUT).

### **2.2.1: New development summary**

The Westbury Bypass is the main new development that could substantially improve local air quality in the Westbury AQMA area. No other new developments have been identified that will significantly change traffic flows in the authority or influence local air quality. West Wiltshire District Council will continue to keep a watching brief on any changes to existing developments and/or the introduction of new developments.

### **2.3: Review and Assessment Progress Report - Recommended Additional Elements**

This section of the Progress Report includes further information on the recommended additional elements such as progress made in respect of a local Air Quality Strategy Framework, Wiltshire Local Transport Plan and other elements.

#### **2.3.1: Additional Monitoring Data**

West Wiltshire District Council does not currently monitor for any unregulated pollutants such as Ozone or PAH's. Odours and fugitive dust complaints are not prevalent in the authority.

#### **2.3.2: Air Quality Action Plans**

Please see Section 3, for the Air Quality Action Plan Progress Report

#### **2.3.3: Wiltshire Air Quality Strategy Framework**

Wiltshire County Council, in collaboration with the four Wiltshire District local authorities of Salisbury, North Wiltshire, West Wiltshire and Kennet recently initiated the development of an Air Quality Strategy (AQS) Framework in response to the need for a coherent and unified way forward in the management of air quality across the County. The Framework is the first attempt to draw together the important issues to improve local air quality. A key recommendation resulting from the development of the Framework Strategy is for the development of a full Air Quality Strategy (AQS), which will enable planners, transport planners, environmental protection officers and local government officers of other disciplines to embrace the need to improve air quality. Most important to the success of an AQS is the integration of a whole range of policy areas, to embrace the need to consider air quality in all aspects of spatial, transport, community and economic planning.

#### **2.3.4: West Wiltshire Planning Policy**

The Local Development Plan included Local Development documents setting out local planning policies and proposals for West Wiltshire. The West Wiltshire LDF contains the following document:

- Wiltshire Structure Plan 2016 (saved plan).

- West Wiltshire District Plan 1<sup>st</sup> Alteration (saved plan).
- Residential Design Guide Supplementary Planning Document.
- Existing supplementary planning guidance.

Further information on West Wiltshire District Council's LDF can be found at: <http://www.westwiltshire.gov.uk/index/planning/planning-policy/local-develop-framework.htm>

Additionally, West Wiltshire currently has their Core Strategy out for consultation. This strategy sets out the spatial vision for the towns and villages within West Wiltshire for the next 20 years and how that vision is to be delivered through development and the use of land. The Core Strategy will be the primary document in West Wiltshire District Council's LDF. An update on West Wiltshire District Council's LDF and Core Strategy can be found in Table 9, Appendix 1. Additionally, further information on West Wiltshire District Council's Core Strategy can be found at: <http://www.westwiltshire.gov.uk/index/planning/planning-policy/local-develop-framework/corestrategy.htm>.

### 2.3.5: West Wiltshire Planning Applications

West Wiltshire District Council operates procedures to help ensure that planning applications that might have impacts on air quality are forwarded to the Environmental Health department for comment. Current developments recently considered include:

- **Kingston Mills, Bradford on Avon:** West Wiltshire District Council has received an application from Taylor Woodrow to transform the 5.5-acre former rubber works known as Kingston Mills, Bradford on Avon. The plans include two hotels, a restaurant, wine bar and bistro along with 37 houses, 125 apartments, retail units, offices and 194 extra parking spaces. The application is going to West Wiltshire District Council Committee in August 2007. An air quality assessment was submitted as part of the application
- **Proposed Aldi store, Warminster Rd, Westbury:** The store is being proposed on the current Oval Motors site (where the Westbury NO<sub>2</sub> automatic analyser is located). An Air Quality assessment has been requested as the proposed development is within the current Westbury AQMA. However, the site development is unlikely to be started until 2009 and the Westbury bypass may have commenced by then in which case it is considered that air quality is unlikely to be an issue.
- **Riverside development, Bythesea Road (opposite County Hall), Trowbridge:** Outline planning permission has been granted (subject to a S106 agreement) for an eight screen multiplex cinema, a 20 lane bowling and entertainment centre, a number of restaurants and bars, a new library, a 60 bed hotel, 240 apartments, office space and 340 car parking spaces. The developers aim to start work on the site in Spring

2008 with the leisure facilities ready for opening in 2010. The first phase of the apartments is due to be completed in the summer of 2009. Currently there are no air quality exceedences in Trowbridge. (Ref 05/02884/OUT)

### 2.3.6: Wiltshire County Council Local Transport Plan

Air quality is considered one of four shared strategic priorities for the second round of Local Transport Plans (the other priorities being congestion, accessibility and road safety). Currently two local authorities in Wiltshire County Councils LTP area have declared one or more transport related AQMAs; these are Salisbury District Council and West Wiltshire District Council. Chapter 8 of the Wiltshire LTP includes information on the number of residents within the West Wiltshire AQMAs (Table 5). Chapter 8 of the Wiltshire LTP also outlines the options, consultation and actions for the AQAP prepared for both the Bradford on Avon and Westbury AQMAs.

LTP guidance requires that for each AQMA a baseline (2004/5) and target (2010/11) should be set relating to concentrations of local pollutants. In accordance with DfT guidance intermediate progress is measured through proxy indicators. Chapter 15 of Wiltshire County Council LTP outlines the target and proxy indicators in detail. The target indicator is achieving the nitrogen dioxide annual mean objective in each of the AQMAs declared in Wiltshire County Council LTP administrative area. The proxy indicators are traffic data from each of the AQMAs (i.e. Bradford On Avon and Westbury in West Wiltshire District Council and Salisbury in Salisbury District Council).

**Table 5: Population exposure within West Wiltshire AQMAs (Chapter 8, Wiltshire LTP)**

Location	Approximate number of residents
<b>Bradford on Avon AQMA</b>	
Masons Lane	20
Market Street	32
Silver Street	30
St Margaret's Street	29
<b>Total</b>	<b>111</b>
<b>Westbury AQMA</b>	
Haynes Road	13
Warminster Road	46
<b>Total</b>	<b>59</b>

1: This table represents the approximate number of people based on figures compiled from the register of electors and so do not include vulnerable receptors such as children.

**Table 6: Summary of the recommended additional elements with respect to air quality progress reporting in West Wiltshire District Council.**

<b>Additional monitoring data</b>	West Wiltshire District Council does not monitor any unregulated pollutants
<b>Action Plans</b>	See Section 3
<b>Local or Regional Air Quality Strategies</b>	West Wiltshire District Council is currently working with the rest of the Wiltshire local authorities in the development of a county-wide Air Quality Strategy.
<b>Planning policy</b>	West Wiltshire's Local Development Framework was established in 2007. The Core Strategy, currently out for consultation, is one of the primary documents in the Framework. It outlines future plans for the development of West Wiltshire whilst considering all of the major policy areas such as air quality.
<b>Planning applications</b>	West Wiltshire District Council has some potentially substantial planning applications within their administrative area that may influence local air quality. West Wiltshire District Council will keep a watching brief on all new developments and planning applications that may influence local air quality.
<b>Local Transport Plan</b>	West Wiltshire District Councils Air Quality Action Plan has been subsumed into Wiltshire County Council's Local Transport Plan (LTP2). A suite of targets and indicators has been set for air quality within the region.

#### **2.4: Review and Assessment Progress Report Conclusions**

From the evidence provided in this report, there are exceedences of the nitrogen dioxide annual mean objective of  $40\mu\text{g}/\text{m}^3$  within the existing AQMAs. The AQMAs as declared are justified.

There are some substantial new developments within the Councils administrative area that may influence local air quality. West Wiltshire District Council will continue to monitor all new developments and planning applications closely for air quality issues.

No major issues were identified in this Progress Report, therefore West Wiltshire will proceed to an Air Quality Progress Report in 2008.

### 3: Air Quality Action Plan Progress Report

Policy Guidance (LAQM.PG(03)) states that local authorities have a duty to keep their action plans up to date. The Air Quality Action Plan Progress Report simply lists the measures generated within the action plan and includes proposed timescales by when they are/were due to be implemented and give an update on progress in terms of implementing them. Progress in implementing the air quality actions for both the Westbury and Bradford on Avon AQMAs are outline in Table 7, Table 8 and Table 9 below.

Note: WCC – Wiltshire County Council      WWDC – West Wiltshire District Council  
 LTP – Local Transport Plan              AQO – Air Quality Objective

**Table 7: Air Quality Action Plan Progress Report 2007 – specific to Bradford on Avon AQMA**

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
B1	Demand Management/Town Centre enhancement combined with soft options contained in G1-G29	Various from Dec 2005 – Dec 2010	<p>WCC has learned that funding the planned demand management option will be problematic. Funding is unlikely to be awarded via the Transport Innovation Fund (TIF) and would be too great a draw on LTP funds. Consequently, WCC considers the current demand management plan is not affordable.</p> <p>WCC and WWDC have been obliged to reconsider the AQAP and investigate alternative options that could resolve the air quality problems in Bradford on Avon.</p> <p>To this end, WCC have examined an alternative traffic management scheme on Masons Land, which has the potential to resolve the air quality problems and meet the 2010 AQO. However</p>	<p><b>Demand Management</b></p> <p>Rejected by Wiltshire County Council.</p>

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
			<p>whilst this scheme provided a theoretical solution to the air quality issues, it results in additional queues and delays being generated which are considered disproportionate to the problem being addressed.</p> <p>The preferred incremental AQAP consists of the following:</p> <p>Stage 1 – Household ventilation</p> <p>Stage 2 – Titanium dioxide material (pavement) (if proven to be successful at trial sites in the UK)</p> <p>Stage 3 – Shuttle working traffic management option</p>	<p><b>Household Ventilation</b> Reach a decision on whether it will be practical/effective by April 2008.</p> <p><b>Titanium dioxide pavement</b> Reach a decision about its effectiveness and practicalities by April 2008.</p> <p><b>Shuttle working</b> Reach a decision about its effectiveness and practicalities by April 2008.</p>
B2	Combination of softer measures (G1-G29) and signing of alternative routes.	-	The signing of alternative routes was intrinsically associated with the wider demand management proposal. Since the demand management option is not being taken forward, a review of the signing routes is deemed unnecessary by Wiltshire County Council.	No further work at this stage.

**Table 8: Air Quality Action Plan Progress Report 2007 – specific to Westbury AQMA**

<b>Measure Code</b>	<b>AQAP measure</b>	<b>Original Timescale</b>	<b>Progress With Measure / Outcome to date</b>	<b>Comment / Future actions</b>
W1	Building a bypass for Westbury	Long term	A revised planning application was submitted in February 2007 and this was considered by WCC's Regulatory Committee in May 2007. Subsequently, the Secretary of State has decided to hold a local inquiry.	Public local inquiry due in Spring of 2008
W2	Leave the town network as it is currently and continue with implementation of soft measures.	Long term	See Table 9	Ongoing
W3	Lobby for improvements for the A350 from the M4 to the Warminster bypass, lobby for completion of Westbury bypass, support improvements to A36 between Codford and Heytesbury	Medium term – ongoing through attending meetings as necessary.	See W1	Ongoing
W4	Support the West Wilts Industrial Estate Town Bus Link	Medium term	WCC continues to fund one journey in each direction to the Industrial Estate.	No current plans to change the service. No funding available to increase the frequency.

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
W5	Support the Westbury Cycle Liaison Panel	Short – Medium term	<p>First meeting of Westbury Cycle Liaison Panel meeting held on the 21<sup>st</sup> June 2006.</p> <p>Westbury Town Centre improvement measures exhibited at the Laverton on 28<sup>th</sup> /29<sup>th</sup> /30<sup>th</sup> June 2007. Proposals include potential improvements to the Westbury cycle network on Station Road, The Mead and Bitham Park as well as improved cycle parking facilities in the Market Place and Town Centre. Further public consultation will be undertaken as work on the Town Centre measures progress.</p>	<ul style="list-style-type: none"> <li>• Completion of schemes in current programme (Station Road and links to Matravers School)</li> <li>• Investigation of potential routes arising from the meeting and review of existing network</li> <li>• On-going liaison with work being undertaken on Westbury Town Centre Improvements.</li> <li>• Report feedback from public exhibition.</li> <li>• Proposed timescale Aug/Sept 2007</li> </ul>
W6	Implement the softer option G1-G29	-	See Table 9	Ongoing

**Table 9: Air Quality Action Plan Progress Report 2007 – generic options for both AQMAs.**

<b>Measure Code</b>	<b>AQAP measure</b>	<b>Original Timescale</b>	<b>Progress With Measure / Outcome to date</b>	<b>Comment / Future actions</b>
G1	Continue to monitor and lobby improvements to transport and infrastructure	Short term	Meetings ongoing.	
G2	Environmental Health Dept will work with Development Control to produce a Local Development Document to set out guiding policies on air quality.	Short term	Document not yet developed but hope to proceed very soon	Extending action date to end of 2007

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
G3, G4 and G5	<p>G3: West Wiltshire District Plan 1<sup>st</sup> Alteration Strategy; housing and employment allocations, recreation and open space policies, retail policy and improvements to the A350.</p> <p>G4: West Wiltshire District Plan 1<sup>st</sup> Alteration Environmental Aims; countryside and nature conservation policies, conservation area and listed building policies, and environmental enhancements.</p> <p>G5: West Wiltshire District Plan 1<sup>st</sup> Alteration Transport Aims; Rail, public transport, cycling and pedestrian policies.</p>	<p>Medium term</p> <p>Short – medium term.</p> <p>Short term</p>	<p>Secondly, there is no change in terms of the three policy areas identified within the Action Plan. The factual position is this: although we have a new Local Development Framework (LDF) process, which replaces the old development plan process, District Plan 1st Alteration policies remain (technically) saved until they are fully replaced by comparable LDF policies.</p> <p>We are currently working on the Core Strategy Development Plan Document (DPD), which will provide the broad strategic vision for the whole of the District. This document will seek to identify very broad areas for growth - in terms of population (housing), places to work, community facilities, retailing and other infrastructure. So, it will (over time) replace some of the elements identified under the Planning Policy section of the Action Plan - notably those seeking to development sustainable communities.</p>	
G6	Town centre shopping: Traffic management and pedestrian priority policy.	Medium term	Actions still covered by District Plan as in G3, 4 and 5.	

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
G7	Review of car parking charges	Medium term	There is no consensus on increasing parking charges. The review is about ensuring the right provision in the right place at the right time. There is no agreement or support for increasing parking charges.	Ongoing
G8	Review and implementation of decriminalisation of parking enforcement.	Medium term	Decriminalised Parking Enforcement (DPE) went live throughout the districts of Kennet and North Wiltshire on 4 <sup>th</sup> September 2006. Salisbury District Council became decriminalised in 2001. The assumption that decriminalised parking will significantly alter traffic numbers seems a big one. The project is about effective enforcement and not reduction of traffic. Reducing illegal parking should aid traffic flow and therefore journey times should be marginally shorter and therefore emissions may be reduced slightly.	WCC is working closely with WWDC to bring DPE to the district. Expected 2007/2008.
G9	Promotion of School Travel Planning.	Medium term	<b>Schools in the Bradford on Avon Community Area</b> 1. School: Bradford-on-Avon Christ Church Church of England Controlled Primary. TP Status: Approved. Comment: Update required 2. School; Fitzmaurice Primary School. TP Status: Approved. Comment: Being implemented 3. School: Holt Voluntary Controlled Primary School. TP Status: Approved. Comment: Update required	All schools should have a School Travel Plan by 2010 – the County Council's Travelwise team will work with schools to assist them towards this aim.

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
			<p>4. School: St Laurence School. TP Status: No Plan. Comment: Potentially developed by March 2008</p> <p>5. School: Westwood-with-Iford School. TP Status: No Plan</p> <p>6. School: Winsley Church of England Voluntary Controlled Primary School. TP Status: Approved. Comment: Update required</p> <p><b>Schools in the Westbury Community Area</b></p> <p>1. School: Bitham Brook Primary School. TP Status: No Plan.</p> <p>2. School: Bratton Primary School. TP Status: Under development.</p> <p>3. School: Dilton Marsh Church of England Primary. TP Status: Approved. Comment: Being implemented.</p> <p>4. School: Matravers School. TP status: Approved. Comment: Update required.</p> <p>5. School: Westbury Church of England Junior School. TP Status: No Plan.</p> <p>6. School: Westbury Infants School. TP Status: Approved. Comment: Update required.</p> <p>7. School: Westbury Leigh Church of England Primary School. TP Status: Approved. Comment: Being implemented.</p>	

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
G10	Encouraging car sharing and promote car share	Short – medium term	Currently a total of 48 of the 966 registered members on <a href="http://www.carsharewiltshire.com">www.carsharewiltshire.com</a> are from the BA13 postcode area that covers Westbury and 30 are from BA15 that covers Bradford-on-Avon. The road side boards promoting the scheme remain on one site in Bradford-on-Avon and two new sites are on either side of the A350 approach to Westbury.	Ongoing countywide promotions will continue.

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
G11	<p>A: Encourage remote working</p> <p>B: Encourage compressed hours when practical</p> <p>C: Encourage greater use of public transport.</p> <p>D: Encourage staff to walk and cycle more often. Achieve more than 40% of staff using an alternative to car travel for getting to and from work at least once a week.</p>	Short – medium term	<p><b>A: Encourage remote working (ongoing):</b> A comprehensive home working policy was developed and launched in September 2005. This policy was designed to provide clear guidelines and a framework for staff and managers so that this method of working could be accessed more easily. Following the launch of the policy a number of officers in different services of the Council have applied for and been supported in working remotely from home. At the present time we have officers in Revenues and Benefits, Housing and Sustainable Communities working from home. The home working policy has been widely publicised and any officer can make a request to work from home through our flexible working policies. Further to staff trying out home working we have no evidence regarding a reduction in business mileage as a number of staff have found that they actually prefer coming into the offices some time during the week to avoid feeling isolated from colleagues.</p> <p><b>B: Encourage compressed hours (ongoing):</b> Our work life balance policies that we have in place have the capacity to facilitate any requests from staff regarding this working pattern.</p> <p><b>C: Encourage greater use of public transport (ongoing):</b> We have set up an arrangement with Virgin Mobile to enable our staff to use their staff bus which will pick up staff in the town centre and drop them by the Bradley Road offices.</p> <p><b>D: Encourage staff to walk and cycle more often. Achieve more than 40% if staff using an alternative to car travel for getting to and from work at least once a week (ongoing):</b> The Council has promoted bike to work week for the last 5 years. We have installed shower facilities for staff to use on site so that should they choose to walk / cycle to work they have appropriate facilities to support this. We also have staff bicycles for staff so that they can use these to travel to meetings locally. We also have dedicated car sharing bays in the car parking to encourage staff to car share. A target of a 40% reduction regarding alternative travel was probably an unrealistic target to set as this could only be envisaged as achievable if further incentives were given to staff for doing so, if car parking space was reduced / penalties were imposed on staff for</p>	

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
G12	Encourage and promote Walk to School Schemes	Medium term	From April 2007, the Walk on Wednesday promotion was replaced with 'Walk around the World'. This promotion focuses on all modes of sustainable transport and is run as an inter-class challenge. During term 5, all Wiltshire schools were invited to take part; we currently do not have accurate records of the number of schools taking part.	Ongoing Walk around the World campaigns by Travelwise. As School Travel Plans are developed this should increase participation levels.
G13	Taking Action on School Journeys Challenge	Medium term	Bradford On Avon Christ Church Primary was the only school to apply for funding under the 2007/08 round of 'Taking Action on School Journeys', although they were not successful.	Annual bidding process that closes every November 30 <sup>th</sup> – all schools are invited to apply, providing they have a School Travel Plan
G14	Encourage Walking Bus Schemes	Ongoing	Westbury Leigh, Westbury Junior, Fitzmaurice Primary School, Bradford-on-Avon Christ Church and Winsley have all received the resource pack. Although Christ Church is the only one actually established, Fitzmaurice are ready to launch theirs.	Encourage other schools through their School Travel Plans (as and when developed) to consider Walking Buses as a key option to encourage less driving to school. Proposed timescale of 2010.

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
G15	Undertake the Great Wilts Travel Tally	Short term	Tally surveys undertaken in Bradford-on-Avon and Westbury schools in March 2003, March 2004, January 2005 and September 2005. The Sept 2006 Tally had to be abandoned due to mode of travel data being collected as part of the January 2007 School Census	Mode of travel data is collected annually as part of the January School Census. Ongoing action.
G16	Wiltshire Cycleway Promotion and develop cycle networks Adoption of supplementary guidance for travel planning and cycle routes Provide Healthy Cycle Packs	Ongoing	Wiltshire Cycleway – improved signing continues to be developed.  The development and launch of the Healthy Cycle Packs has been delayed until 2011/12.	Westbury will receive a new route guide as part of the Westbury Bypass proposal and in association with the new Westbury Cycle Liaison Panel. 2007/2011
G17	Encourage Walking for Health	Medium term	Following the withdrawal of the District Council, the administration of the West Wilts Walking for Health Group, as well as financial support, now rests with the County Council's Travelwise team. Programmes are printed quarterly and distributed across the area. The West Wilts Walking for Health Group currently has 80 members, all over 50 years old.	Continued support with programme reprints and publicity. Proposed timescale 2009.
G18	Travelwise Promotions	Short-medium term.	WCC Travelwise promotions, including car sharing, and walking and cycling to school, have been carried out throughout the year.	Ongoing on a cyclical basis.

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
G19	Business Travel Plans	Short-medium term. Ongoing	Whilst only one planning application is currently pending with a Travel Plan, several potential applicants in the town have been advised that a Travel Plan will be required should they wish to proceed with their project.	WCC staff resource issues will mean that Business Travel Plans will not be a priority for future actions.
G20	Set up Travel Plan Network Groups	Short term	Difficulties in engaging the site owners plus WCC staff resource issues has meant that the Travel Plan Network Group for the West Wilts Industrial Estate Group has unfortunately not been set-up.	If resources allow, this may become a possible future action. Proposed timescale 2011
G21	Support local sustainable travel groups	Medium term. Ongoing	WCC's Travelwise team has continued to support local groups that promote sustainable travel including the Sustrans NCN4 Cycle Rangers group, West Wilts Walking for Health Group, and Wiltshire Wildlife Trust.	Individual requests for support and advice will be considered. Proposed timescale 2011
G22	Support Royal United Hospital Hopper	Medium term. Ongoing	The Hopper continues to operate despite the ending of Government funding and the withdrawal of funding by the Primary Care Trust – now 100% funded by WCC. WCC has agreed a budget strategy to allow the service to continue – is currently being re-tendered and will be relaunched under the new 'Connect 2 Wiltshire' brand, with new vehicles, in August 2007.	Continue to monitor service performance and seek to increase cost effectiveness where possible. Ongoing

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
G23	Provide Real-time Intelligent Public Transport Information System	Medium term. Ongoing	Real time information installed on service X4/X5 (Bath – Trowbridge – Warminster – Salisbury).	Due to high cost and competing investment priorities is unlikely to be further expansion of system during LTP2 period (up to 2010/11)
G24	Provide Public Transport Subsidy	Medium term. Ongoing	WCC provides over £3million per annum to fund non-commercial bus services, and has increased funding by over 100% since 1999 to allow services to be maintained in the face of rising transport operating costs (WWDC withdrew its funding contribution in April 2005).	Budget strategy agreed which if successful should allow service levels to be maintained. Ongoing
G25	Provide Cycle Improvements	Medium term. Ongoing	WCC is planning the development of a cycle network for Bradford on Avon. The implementation of the cycle networks in Melksham, Trowbridge, Warminster and Westbury is ongoing. A cycleway has been implemented along Fairfield Road, Warminster and WCC is developing schemes to link this into Imber Road and Station Road. Schemes have been developed in Station Road, Westbury, Nightingale Road, Trowbridge, and Redland Lane/Indigo Gardens, Westbury, which will hopefully be implemented in 2008/09. Cycle parking has been provided at Trowbridge Rail Station and numerous other locations in WWDC.	Develop and consult on cycle network (2007/8 to 2008/9) Delivery of cycle networks Implementation – long term

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
G26	Rural Transport Partnership	Medium term. Ongoing	The Rural Transport Partnership has been re-launched as the Wiltshire & Swindon Delivering Accessibility and Rural Transport (DART) Partnership, and is continuing its work to support and develop community and voluntary transport, including the development of community transport 'hubs' (e.g. in Melksham) and the recently launched countywide 'Wheels to Work' scheme	Support is sought from the District Councils and other partners to continue and expand the work of the Partnership, which has been re-shaped to align with emerging rural funding frameworks and the LTP Accessibility Planning process.  Proposed timescale April 2008.
G27	Implement decriminalised of parking	Medium term.	See measure G8	
G28	Develop footpath and pedestrian facility improvements	Medium term. Ongoing	During 2006/07 the County Council undertook a street scene improvement along Castle Street in Trowbridge. Further work is planned in Castle Street during 2007/08. Traffic management and accessibility improvement schemes were developed in Warminster and Melksham Town Centres during 2006/07. The Warminster scheme will be delivered and the Melksham scheme further developed in 2007/08. Also in 2006/07, a pedestrian refuge was	New pedestrian schemes will be developed and designed during 2007/08 for delivery in future years.  Short – Long term

Measure Code	AQAP measure	Original Timescale	Progress With Measure / Outcome to date	Comment / Future actions
			installed on Bradford Road, Trowbridge and enhanced crossing points were implemented in Wynsome Street, Southwick and Horse Road, Hilperton.	
G29	Consider bidding to the Transport Innovation Fund (TIF)	Medium term.	See measure B1	

## **Appendix 1: Review and Assessment Appendices**

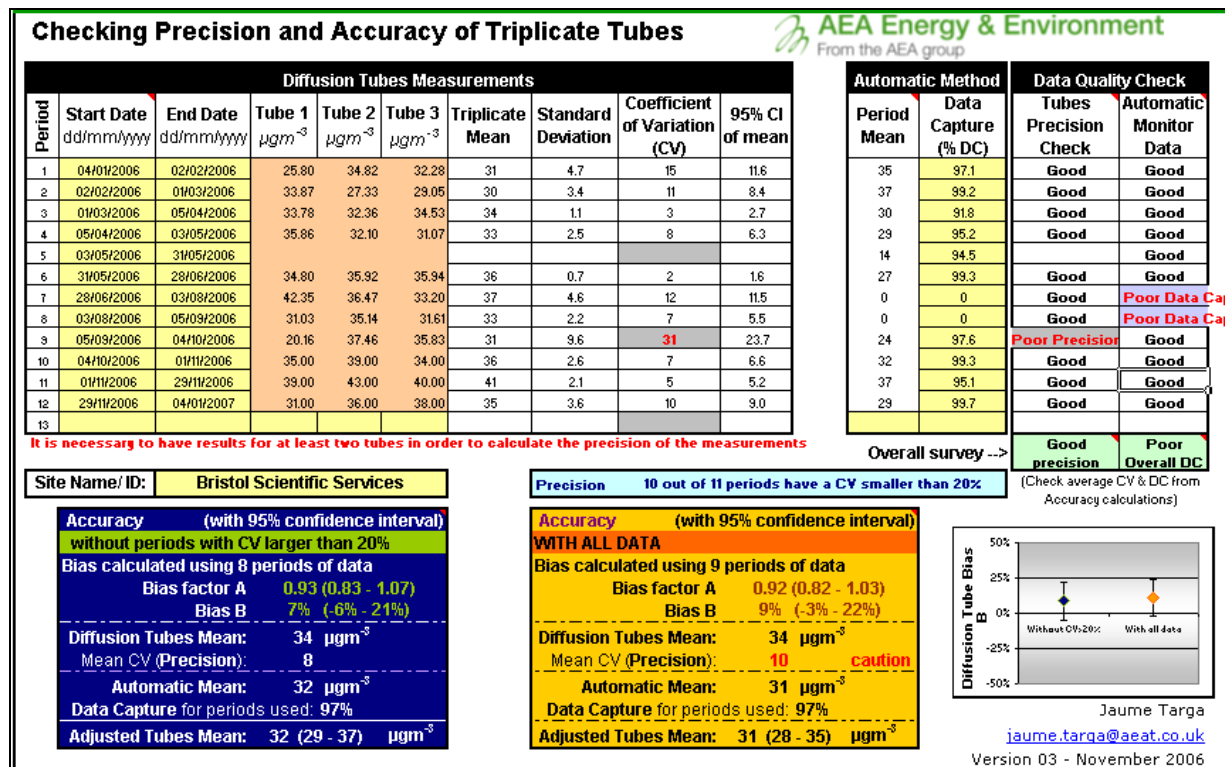
### **A1.1: Estimation of the 2006 NO<sub>2</sub> diffusion tube bias adjustment factor**

West Wiltshire District Council undertakes a triplicate diffusion tube co-location study at the Bradford on Avon automatic analyser site. The 2006 data for the automatic analyser and the co-located diffusion tubes was checked using the Precision and Accuracy Spreadsheet tool and a 'local' bias adjustment factor of 0.93 was calculated (Figure 2) (Precision and Accuracy tool is available to download via the Air Quality Archive Website at: [http://www.airquality.co.uk/archive/laqm/tools/AEA\\_DifTPAB\\_v03.xls](http://www.airquality.co.uk/archive/laqm/tools/AEA_DifTPAB_v03.xls)).

Additionally, a 'national' bias adjustment factor can be estimated based on a number of national studies. Figure 3 illustrates the bias adjustment factor of 0.9 based on 5 studies estimated using the Bias Adjustment Factors Spreadsheet (version 03/07) (<http://www.uwe.ac.uk/aqm/review/diffusiontube300307.xls>)

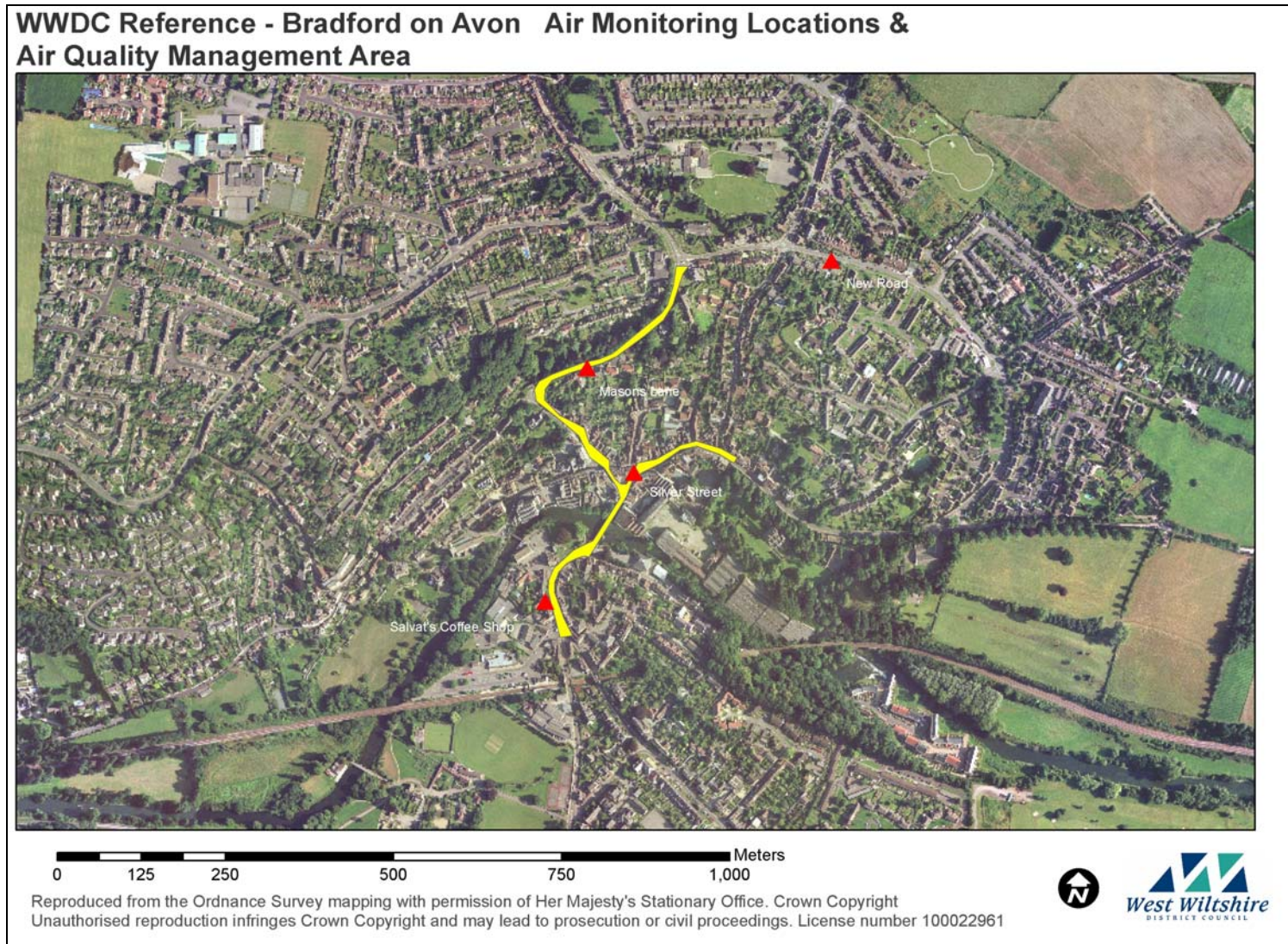
The co-location study results have been checked to confirm the precision of the diffusion tube results, and the accuracy of the automatic monitoring results in relation to data capture. Once data capture and coefficient of variation of the triplicate diffusion tubes was taken into account only 8 months worth of results could be utilised and a Bias Adjustment factor of 0.93 was determined. This collates well with the bias adjustment factor for 2006 estimated using the published Bias Adjustment Factors Spreadsheet (v02/07). A factor of 0.90 was estimated from five studies. Although in many cases, using an overall correction factor derived from as many co-location studies as possible will provide the 'best estimate' of the 'true' annual mean concentration, it is important to recognise that uncertainty associated with this bias adjusted annual mean remains. One analysis has shown that the uncertainty for tubes bias adjusted in this way is  $\pm 20\%$  (at 95% confidence level). This compares with a typical value of  $\pm 10\%$  for chemiluminescence monitors subject to appropriate QA/QC procedures. Having studied both scenarios regarding which factor to use it has been decided to pursue a precautionary principle and use the 'local' co-location adjustment factor of 0.93.

**Figure 2: Precision and Accuracy results for the Bradford On Avon co-location study 2006.**



### A1.2: Air Quality Management Areas and monitoring locations in West Wiltshire

Figure 4: Map of Bradford On Avon Air Quality Management Area and current monitoring locations.



**Figure 5: Map of Westbury Air Quality Management Area and current monitoring locations.**



**Figure 6: Map of Trowbridge current monitoring locations.**



### A1.3: NO<sub>2</sub> diffusion tube concentrations (2006)

Table 10 presents the NO<sub>2</sub> diffusion tube data for West Wiltshire District Council. The 2006 annual mean has been bias adjusted and projected forward to 2010 in accordance with TG(03) Box 6.6. Any locations and annual mean figures shaded red indicate an exceedence of the 40µg/m<sup>3</sup> annual mean NO<sub>2</sub> objective.

**Table 10: NO<sub>2</sub> diffusion tube data for all locations in West Wiltshire (2006)**

Site No	Tube Name	Jan*	Feb*	Mar*	Apr*	May*	Jun*	Jul*	Aug*	Sept*	Oct*	Nov*	Dec*	2006 <sup>#</sup> Mean	2010 <sup>#</sup> Mean
		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
<b>WESTBURY</b>															
W1	76 Warminster	45	42	45	46	45	51	50	42	45	50	47	39	42.5	36.8
W2	90 Warminster	48	56	56	44	66	68	74	52	62	64	65	56	55.1	47.7
W3	17 Danvers Way	21	22	13	12	-	13	14	10	11	13	20	19	14.2	12.8
W4	52 Oldfield Park	25	22	19	13	11	12	10	-	13	15	20	18	15.0	13.4
W5	Haynes Road	45	55	40	21	46	65	-	35	44	49	46	35	40.7	35.3
W6	Oldfield Road	27	24	22	-	18	19	27	20	19	-	27	25	21.2	18.3
<b>BRADFORD ON AVON</b>															
BOA1	Masons Lane	60	52	78	71	80	86	91	76	73	70	73	69	68.0	58.9
BOA2	St Margaret. C/L	26	34	34	36	-	35	42	31	20	35	39	31	30.7	26.5
BOA3	St Margaret. C/L	35	27	32	32	-	36	36	35	37	39	43	36	32.9	28.5
BOA4	St Margaret. C/L	32	29	35	31	-	36	33	32	36	34	40	38	31.7	27.5
BOA5	Silver Street	35	39	-	38	37	46	48	37	34	41	47	42	37.5	32.5
BOA6	New Road	27	28	26	23	36	24	28	23	20	28	30	24	24.6	21.3
BOA7	9 Masons Lane	-	-	-	-	-	-	-	-	-	-	23	22	20.9	18.7
<b>TROWBRIDGE</b>															
T1	County Way 56	32	38	39	34	25	37	36	21	32	42	51	45	33.4	28.9
T2	Hill Street	28	34	35	33	39	38	-	34	37	43	48	47	35.1	30.4

\* Data in these columns are not bias adjusted # Data in these columns are bias adjusted

#### A1.4: Automatic Analyser Monitoring Data for West Wiltshire 2006

**Table 11: Nitrogen dioxide automatic analyser data 2006 for Westbury, West Wiltshire**

Data Capture >90%	Monthly Mean Concentration	Exceedences of 1-hr objective
	( $\mu\text{g}/\text{m}^3$ )	(18 exceed – $200\mu\text{g}/\text{m}^3$ )
January 2006	40	0
February 2006	44	0
March 2006	33	0
April 2006	36	0
May 2006	34	0
June 2006	37	0
July 2006	29	0
August 2006	26	0
September 2006	34	0
October 2006	33	0
November 2006	40	0
December 2006	36	0
	<b>Mean = 35</b>	<b>Total = 0</b>

**Table 12: Particulates (PM<sub>10</sub>) automatic analyser data 2006 for Westbury, West Wiltshire**

Data Capture >90%	Monthly Mean Concentration	Exceedences of 24-hr objective
	( $\mu\text{g}/\text{m}^3$ )	(35 exceed – $50\mu\text{g}/\text{m}^3$ )
January 2006	37	7
February 2006	-	-
March 2006	-	-
April 2006	29	1
May 2006	20	0
June 2006	20	0
July 2006	18	0
August 2006	9	0
September 2006	13	0
October 2006	17	1
November 2006	24	0
December 2006	22	0
	<b>Mean = 21</b>	<b>Total = 9</b>

**Table 13: Sulphur dioxide automatic analyser data 2006 for Westbury, West Wiltshire**

Data Capture >90%	Monthly	Monthly	Monthly	Exceedences of		
	Min	Max	Mean	objective		
	( $\mu\text{g}/\text{m}^3$ )	( $\mu\text{g}/\text{m}^3$ )	( $\mu\text{g}/\text{m}^3$ )	15-min	1-hr	24-hr
Jan 2006	0	7.0	1.3	0	0	0
Feb 2006	0	5.9	1.1	0	0	0
March 2006	0	15.4	1.3	0	0	0
April 2006	0	6.6	0.8	0	0	0
May 2006	0	7.2	0.7	0	0	0
June 2006	0	20.3	1.2	0	0	0
July 2006	0	19.2	1.3	0	0	0
Aug 2006	0	9.1	0.5	0	0	0
Sept 2006	0	6.5	0.7	0	0	0
Oct 2006	0	6.6	1.2	0	0	0
Nov 2006	0	5.9	1.2	0	0	0
Dec 2006	0	4.3	1.2	0	0	0
<b>Mean</b>	<b>0</b>	<b>10.0</b>	<b>1.0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table 14: Nitrogen dioxide automatic analyser data 2006 for Bradford on Avon, West Wiltshire**

Data Capture > 90%	Monthly Mean	Exceedence of 1-hour
	Concentration	objective
	( $\mu\text{g}/\text{m}^3$ )	(18 exceed – $200\mu\text{g}/\text{m}^3$ )
January 2006	35	0
February 2006	37	0
March 2006	30	0
April 2006	29	0
May 2006	14	0
June 2006	27	0
July 2006	-	-
August 2006	-	-
September 2006	24	1
October 2006	32	0
November 2006	37	0
December 2006	29	0
	<b>Mean = 29</b>	<b>Total = 1</b>

### **A1.5: QA/QC for monitoring undertaken by West Wiltshire District Council**

The following automatic analysers are used:

- NO<sub>2</sub> at Bradford on Avon and Westbury: API M2000 Automatic Analysers
- PM<sub>10</sub> at Westbury: BAM 1020 analyser
- SO<sub>2</sub> at Westbury: API M100A Automatic Analyser

All of the QA/QC procedures are documented in all previous air quality reports and can be viewed on West Wiltshire Council's website at: <http://www.westwiltshire.gov.uk/index/env/pollution/air-pollution/air-quality/air-quality-reports-summaries.htm>. All data presented in this report has been ratified and adjusted as appropriate according to current guidance.

#### **A1.5.1: WASP Analysis for nitrogen dioxide diffusion tubes**

The WASP Scheme is an independent proficiency testing scheme operated by the Health and Safety Laboratory (HSL). Each month a diffusion tube doped with nitrite is distributed to each participating laboratory; participants then analyse the tube and report the results to HSL. The nominal mass of nitrite on the doped tubes is different each month, and is intended to reflect the range encountered in actual monitoring. For the purpose of diffusion tube QA/QC in the context of Local air Quality Management, AEA Energy & Environment carry out an assessment of laboratory performance for each full calendar year. This was based on the following criteria, which were agreed with Defra and HSL:

- Participating laboratories must complete at least 10 of the 12 monthly WASP rounds.
- The year's single worst result is ignored: this makes some limited allowance for one-off problems with analytical equipment etc.
- Each laboratory's monthly standardised results are then combined to give a standard uncertainty for the full year, expressed as a relative standard deviation (%RSD).
- The RSD must be within 15%.

Mean Standardised result (actual result / nominal value): 0.98. Mean percentage under/over-estimation of analysis: -1.5%. Comparison with AEA performance criteria for Local Authority Support: RSD of Standardised Results, ignoring worst value: 4.0 % - this is within the performance target of 15%.

Comments: This laboratory's WASP results met AEA Energy & Environment's performance criteria in 2006.

**Table 15: WASP analysis results for Bristol Scientific Services, 2006.**

Month	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Mean
WASP Round	81	82	83	84	85	86	87	88	89	90	91	92	
Nominal Value ug nitrite	2.15	1.54	1.32	0.99	2.34	1.21	1.29	0.74	2.60	1.86	1.47	0.86	
Lab result ug nitrite	2.01	1.44	1.30	1.00	2.30	1.16	1.38	0.78	2.42	1.86	1.41	0.87	
Standardised Result	0.93	0.94	0.98	1.01	0.98	0.96	1.07	1.05	0.93	1.00	0.96	1.01	0.98

**A1.6: Nitrogen dioxide trends (NO<sub>2</sub>)**

Trends in nitrogen dioxide were investigated for the automatic monitoring sites in Bradford On Avon and Westbury. These monitoring sites came into operation in 2003. Nitrogen dioxide concentrations have remained relatively constant since monitoring began. In 2005 there were difficulties with the automatic monitor in Westbury resulting in high concentrations that may not have been representative of the local situation. West Wiltshire will continue monitoring at these locations and report further trends in their 2008 Progress Report. Given the low concentrations of Sulphur Dioxide monitored in Westbury it was not considered beneficial to analyse trends. Additionally, the PM<sub>10</sub> monitor in Westbury experienced major technical problems in 2005 so useful annual trend concentration graphs could not be generated.

**Figure 7: Comparison of NO<sub>2</sub> annual mean concentrations for two automatic monitors in West Wiltshire.**

