



2011 Air Quality Progress Report for

Wychavon District Council

In fulfillment of Part IV of the Environment Act 1995
Local Air Quality Management

Date April 2011

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Executive Summary

A detailed Assessment for Whittington and Wychbold has been completed and submitted to DEFRA. During 2010 no changes or developments have taken place that would lead to additional exceedances of the objectives.

The conclusions of the detailed assessment were that the annual mean nitrogen dioxide objective was not been exceeded in wither area therefore the declaration of Air Quality Management Areas was not required.

Table of contents

1	Introduction	6
1.1	Description of Local Authority Area	6
1.2	Purpose of Progress Report	6
1.3	Air Quality Objectives	6
1.4	Summary of Previous Review and Assessments	8
2	New Monitoring Data	10
2.1	Summary of Monitoring Undertaken	10
3	New Local Developments	18
3.1	Road Traffic Sources	18
3.2	Other Transport Sources	18
3.3	Industrial Sources	18
3.4	Commercial and Domestic Sources	18
3.5	New Developments with Fugitive or Uncontrolled Sources	19
4	Local / Regional Air Quality Strategy	20
5	Planning Applications	21
6	Air Quality Planning Policies	22
7	Local Transport Plans and Strategies	23
8	Climate Change Strategies	24
9	Implementation of Action Plans	25
10	Conclusions and Proposed Actions	26

List of Tables

Table 2.1 Details of non-automatic monitoring sites

Table 2.2 Results of Nitrogen Dioxide Diffusion Tube Monitoring Droitwich and Pershore

Table 2.3 Results of Nitrogen Dioxide Diffusion Tube Monitoring Evesham

Table 2.4 Results of Nitrogen Dioxide Diffusion Tube Monitoring Pershore

1 Introduction

1.1 Description of Local Authority Area

Wychavon District Council is the largest District Council lies on the river plain of the Avon between the Cotswold Hills to the south and Birmingham plateau to the north. The District covers 260 square miles with a population of 116900 living in the towns of Droitwich, Evesham, Pershore and nearly 100 villages and hamlets. The district is relatively flat having isolated hills most notably Bredon Hill, 6km south of Pershore.

Wychavon has boundaries with Worcester City, Redditch Borough, Tewkesbury, Wyre Forest, Bromsgrove, Stratford on Avon, Cotswold and Malvern Hills District Councils.

The M5 motorway runs north/south on the western side of the district, generally through rural areas away from residential properties, with the exception for a section adjacent Droitwich and Wychbold.

In the District there are four A2 permitted installations 2 brickworks and 2 printers and 61 Part B installations. None give rise to exceedences of any of the objectives.

1.2 Purpose of Progress Report

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the Local Air Quality Management process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

1.3 Air Quality Objectives

The air quality objectives applicable to Local Air Quality Management (LAQM) **in England** are set out in the Air Quality (England) Regulations 2000 (SI 928), and the Air Quality (England) (Amendment) Regulations 2002 (SI 3043). They are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (for carbon monoxide the units used are milligrammes per cubic metre, mg/m^3). Table 1.1. includes the number of permitted exceedences in any given year (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

Pollutant	Concentration	Measured as	Date to be achieved by
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Maximum daily running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
Particles (PM₁₀) (gravimetric)	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Wychavon District Council's first round of review and assessment was published in December 2000 and concluded that it was unlikely there would be any exceedences of any of the objectives.

In February 2003 the Updating and Screening Assessment (USA) for identifying those aspects that have changed since the first round of reviews and assessment concluded was that the objectives were unlikely to be exceeded, therefore there was no need to proceed to a detailed assessment.

The Updating and Screening Assessment (USA) completed in April 2006, concluded was that it was necessary to proceed to a Detailed Assessment of nitrogen dioxide (NO₂) in the following locations:

- Swan Lane, Evesham
- Port Street, Evesham

and for particulate matter (PM₁₀) at:

- Walton Lane, Hartlebury

The conclusions of the Detailed Assessment were:

- The annual mean objective for the nitrogen dioxide concentration not to exceed 40 µg/m³ by the 31 December 2005 is not currently exceeded in Swan Lane, but any future changes in road layout and traffic flows in the area will need to be assessed against the effect on air quality. Nitrogen dioxide monitoring will continue.
- the annual mean objective for the nitrogen dioxide concentration not to exceed 40 µg/m³ by the 31 December 2005 is exceeded in part of Port Street Evesham.
- The 24 hourly mean of PM₁₀ must not exceed 50 µg/m³ more than 35 times per year to be achieved by 31st December 2004 is not currently being exceeded in Hartlebury.
- The annual mean of PM₁₀ must not exceed 40 µg/m³ to be achieved by 31st December 2004 is not currently being exceeded in Hartlebury.

As a result of the above and in accordance with the Council's statutory obligations under Local Air Quality Management (LAQM) an Air Quality Management Area was declared in Port Street Evesham (See Appendix B Figure 1).

A stage 4 further assessment has been carried out and a Draft Action Plan has been prepared, DEFRA have accepted it, but made recommendations that will be further considered before the Final Action Plan is submitted.

No developments were identified by the Progress Report 2007 that would change previous conclusions that the objectives for Benzene, 1-3 Butadiene, Carbon

Monoxide, Lead, Particulates (PM₁₀) and Sulphur Dioxide were unlikely to be exceeded.

The hot spots in Whittington and Wychbold continue to be monitored because of concern that the annual mean for nitrogen dioxide may be exceeded due to emissions from motor vehicles.

The USA in 2008 identified no changes, but it was decided to carry out detailed assessments for the hot spots at Whittington and Wychbold.

At Whittington diffusion tubes have been sited on the facades of three properties and whilst to date we have limited data the estimated annual means for monitoring sites EPS 52, EPS53 and EPS 54 (see Appendix B Figure 2) show concentrations below the objective.

At Wychbold diffusion tube EPS55 on the façade of a residential property in Sheldon Close (see Appendix B Figure 3) is also showing estimated results below the objective.

Monitoring is continuing at both locations, before a determination is made on whether there are exceedences of the nitrogen dioxide annual mean at the sensitive receptors.

A Progress Report was submitted in 2010.

A detailed Assessment for Whittington and Wychbold as identified in the Progress Report 2010 has been submitted and no exceedence was found.

All the reports can be viewed

<http://www.wychavon.gov.uk/cms/business/pollution/air-quality.aspx>

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

There are no automatic monitoring sites in Wychavon District Council

2.1.2 Non-Automatic Monitoring Sites

In Wychavon the only monitoring is by diffusion tubes for nitrogen dioxide. The sites are report in 2010.

Table 2.1 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA ?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location?
Church Lane Norton	kerbside	387433 251583	NO ₂	N	Y (10m) 69m M5	0.5m	Y
Nr Swan Whittington	roadside	387602 252494	NO ₂	N	Y (11m)	2.0m	Y
Nr Swan Whittington	roadside	387602 252494	NO ₂	N	Y (11m)	2.0m	Y
Nr Swan Whittington	roadside	387602 252494	NO ₂	N	Y (11m)	2.0m	Y
The Bungalow Whittington	On receptor	387598 252511	NO ₂	N	Y	12m	Y
Hillview Cottage Whittington	On receptor	387595 252533	NO ₂	N	Y	22m	Y
Green Rise Whittington	On receptor	387591 252541	NO ₂	N	Y	24m	Y
Homeleigh Swinesherd	On receptor	388373 253964	NO ₂	N	Y (0m)	62m	Y
Civic Centre Pershore	Urban background	394703 246308	NO ₂	N	N	2m	N
High Str Pershore	roadside	394850 246065	NO ₂	N	N	2m	Y
40 High Str Pershore	roadside	395048 245527	NO ₂	N	Y (2m)	0.5m	Y
St Andrews Rd Pershore	Urban background	394571 245377	NO ₂	N	Y(m)	1.5m	N
Broad Str Pershore	roadside	394981 245735	NO ₂	N	N	3m	Y
Ombersley Str Droitwich	roadside	389739 263219	NO ₂	N	N	2m	Y
St Andrews Str Droitwich	roadside	389970 263149	NO ₂	N	N	2m	Y
Hanbury Road Droitwich	kerbside	390854 263188	NO ₂	N	Y (7m) 40m M5	0.5m	Y
Mayflower Rd Droitwich	roadside	390715 262846	NO ₂	N	Y (14m) 36m M5	1m	Y
Mayflower Rd Droitwich	roadside	390715 262846	NO ₂	N	Y (14m) 36m M5	1m	Y
Mayflower Rd Droitwich	roadside	390715 262846	NO ₂	N	Y (14m) 36m M5	1m	Y
Tagwell Cl Droitwich	roadside	390853 261909	NO ₂	N	Y (15m) 36m M5	1m	Y
Tagwell Cl Droitwich	roadside	390853 261909	NO ₂	N	Y (15m) 37m M5	1m	Y

Tagwell Cl Droitwich	roadside	390853 261909	NO ₂	N	Y (15m) 37m M5	1m	Y
Westlands Droitwich	roadside	389125 264101	NO ₂	N	N	2m	Y
A38 Worcester Rd Wychbold	roadside	391940 265605	NO ₂	N	N	2.5m	Y
Worcester Rd Wychbold	roadside	392031 265624	NO ₂	N	Y (15.5m) 140m M5	2.5m	Y
Worcester Rd Wychbold	roadside	392031 265624	NO ₂	N	Y (15.5m) 140m M5	2.5m	Y
Worcester Rd Wychbold	roadside	392031 265624	NO ₂	N	Y (15.5m) 140m M5	2.5m	Y
6 Sheldon Close Wychbold	On receptor	392017 265665	NO ₂	N	Y	17m 145m M5	Y
Merryfields House Norton	On receptor	388924 251173	NO ₂	N	Y (0M)	76m	Y
Sangia Norton	On receptor	389171 251380	NO ₂	N	Y (0m)	13m	Y
Swan Lane Evesham	kerbside	403796 244013	NO ₂	N	N (1m)	0.2m	Y
Swan Lane Evesham	kerbside	403796 244013	NO ₂	N	N (1m)	0.3m	Y
Swan Lane Evesham	kerbside	403796 244013	NO ₂	N	N (1m)	0.3m	Y
High Street Evesham	kerbside	403761 244002	NO ₂	N	N	1.0m	Y
High Street Evesham	kerbside	403747 243925	NO ₂	N	N	1.5m	Y
Avon Street Evesham	kerbside	403725 244023	NO ₂	N	Y (1M)	0.5m	Y
High Street Evesham	roadside	403753 244068	NO ₂	N	Y (2m)	1m	Y
High Street Evesham	roadside	403751 244020	NO ₂	N	N	2m	Y
Swan Lane Evesham	roadside	403822 244001	NO ₂	N	N	1.5m	Y
Swan Lane Evesham	roadside	403858 244001	NO ₂	N	N	1.5m	Y
Cowl St Evesham	roadside	403892 243996	NO ₂	N	N (3m)	1.5m	Y
Swan Lane Evesham	roadside	403032 243980	NO ₂	N	N (4m)	1.5m	Y
Chapel Str Evesham	roadside	403923 243894	NO ₂	N	N	1.5m	Y
Mill Str Evesham	roadside	403976 243811	NO ₂	N	Y (3.0m)	2.0m	Y
Port Str Evesham	roadside	404237 243593	NO ₂	Y	Y(0m)	1.5m	Y
Port Str Evesham	kerbside	404128 243630	NO ₂	N	N(1.7M)	0.3m	Y
Port Str Evesham	kerbside	404128 243630	NO ₂	Y	N(1.7M)	0.3m	Y
Port Str Evesham	kerbside	404128 243630	NO ₂	Y	N(1.7M)	0.3m	Y
Port Str Evesham	roadside	404431 243550	NO ₂	Y	Y(2.7m)	1.5m	Y

Date April 2011

Council Name -Wychavon

Port Str Evesham	roadside	404327 243569	NO2	y	Y(3m)	2.0m	Y
Port Str Evesham	roadside	404222 243598	NO2	Y	Y(0m)	1.5m	Y
Port Str Evesham	roadside	404183 243611	NO2	Y	Y(2.6m)	1.5m	Y
Castle Str Evesham	roadside	404108 243648	NO2	N	Y(6.5m)	1.5m	Y
Castle Str Evesham	roadside	404061 243647	NO2	N	Y(3m)	1.5m	Y
Waterside Evesham	roadside	404021 243670	NO2	N	Y(11m)	0.5m	Y
Bridge Street Evesham	roadside	404229 243670	NO2	N	N	1.5m	Y
Burford Rd Evesham	roadside	404232 243621	NO2	N	Y(0m)	1.5m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 The only exceedences of any of the objectives at the receptor were the annual mean for nitrogen dioxide in the Port Street Evesham AQMA.

Nitrogen Dioxide

Table 2.2 Results of Nitrogen Dioxide Diffusion Tubes

Site ID	Location	Within AQMA?	Data Capture for monitoring period ^a %	Data Capture for full calendar year 2010 ^b %	Annual mean concentrations Adjusted for bias ($\mu\text{g}/\text{m}^3$)		
					2008 *	2009	2010
EPS1	Church Lane Norton	N	50		31.69	26.49	34.28
EPS2*	Nr Swan Whittington	N	92		52.23	47.98	51.36
EPS3*	Nr Swan Whittington	N	75		55.70	45.94	58.21
EPS4*	Nr Swan Whittington	N	92		54.72	51.90	46.81
EPS52	The Bungalow Whittington	N	92			34.34	23.42
EPS53	Hillview Whittington	N	92			25.40	30.11
EPS54	Green Rise Whittington	N	92			30.75	30.98
EPS5	Homeleigh Swinesherd	N	0		30.54	27.98	19.71
EPS6	Civic Centre Pershore	N	92		22.48	19.70	23.42
EPS7	High Street Pershore	N	84		28.52	27.81	30.11
EPS8	40 high Street Pershore	N	84		31.36	23.21	30.98
EPS9	St Andrews Road Pershore	N	92		16.91	17.04	36.10
EPS10	Broad Street Pershore	N	75		30.34	27.72	19.71
EPS16	Ombersley Street Droitwich	N	66		31.13	28.91	31.08
EPS17	St Andrews Road Droitwich	N	75		30.45	27.79	28.96
EPS18	Hanbury Road Droitwich	N	92		30.11	28.68	36.10
EPS19	Mayflower Road Droitwich	N	92		40.24	37.71	36.10
EPS20	Mayflower Road Droitwich	N	92		39.43	35.38	40.38
EPS21	Mayflower Road Droitwich	N	92		37.15	36.34	41.93
EPS22	Tagwell Close Droitwich	N	92		31.51	34.91	36.17
EPS23	Tagwell Close Droitwich	N	92		33.12	34.74	36.27
EPS24	Tagwell Close Droitwich	N	92		33.85	34.16	34.69
EPS25	Westlands Droitwich	N	0		48.58		
EPS26	A38 Wychbold	N	50		55.51	49.39	59.31
EPS27**	Worcester Road Wychbold	N	92		56.22	47.91	51.65
EPS28**	Worcester Road Wychbold	N	92		51.57	46.79	49.31
EPS29**	Worcester Road Wychbold	N	92		49.74	44.13	44.58
EPS55	6 Sheldon Close Wychbold	N	92			29.33	33.41
EPS50	Merryfields Norton	N	92		19.20	19.41	22.91
EPS51	Sangra Norton	N	92		21.84	18.41	26.91

* Average of triple diffusion tubes 2008 $54.20\mu\text{g}/\text{m}^3$ 2009 $48.60\mu\text{g}/\text{m}^3$ 2010 $52.12\mu\text{g}/\text{m}^3$

** Average of triple diffusion tubes 2008 $54.46\mu\text{g}/\text{m}^3$ 2009 $46.28\mu\text{g}/\text{m}^3$ 2010 $48.51\mu\text{g}/\text{m}^3$

Table 2.3 Results of Nitrogen Dioxide Diffusion Tubes Swan Lane Evesham

Site ID	Location	Within AQMA?	Data Capture for monitoring period ^a %	Data Capture for full calendar year 2009 ^b %	Annual mean concentrations ($\mu\text{g}/\text{m}^3$)		
					2008 *	2009	2010
EPS13***	Swan Lane Evesham	N	84		33.22	32.04	32.04
EPS13a***	Swan Lane Evesham	N	84		37.51	33.77	33.77
EPS13b***	Swan Lane Evesham	N	67		30.53	30.51	30.51
EPS15	High Street Evesham	N	50		26.92	24.56	24.56
EPS31	High Street Evesham	N	50		23.67	22.81	22.81
EPS32	Avon Street Evesham	N	50		24.88	24.57	24.57
EPS33	High Street Evesham	N	93		22.67	21.63	21.63
EPS34	High Street Evesham	N	84		37.51	33.77	33.77
EPS35	Swan Lane Evesham	N	84		30.53	30.51	30.51
EPS36	Swan Lane Evesham	N	67		26.92	24.56	24.56
EPS37	Cowl Street Evesham	N	84		23.67	22.81	22.81
EPS38	Swan Lane Evesham	N	84		24.88	24.57	24.57
EPS39	Chapel Street Evesham	N	84		22.67	21.63	21.63
EPS40	Mill Street Evesham	N	75		26.93	23.65	23.65

*** Average of triple diffusion tubes 2008 $33.77\mu\text{g}/\text{m}^3$ 2009 $32.11\mu\text{g}/\text{m}^3$ 2010 $32.11\mu\text{g}/\text{m}^3$

Table 2.4 Results of Nitrogen Dioxide Diffusion Tubes Port Street Evesham

Site ID	Location	Within AQMA ?	Data Capture for monitoring period ^a %	Data Capture for full calendar year 2009 ^b %	Annual mean concentrations ($\mu\text{g}/\text{m}^3$)		
					2008 c d	2009 d	2010 d
EPS11	Port Street Evesham	Y	50		38.11	34.28	46.85
EPS14a****	Port Street Evesham	Y	92		41.14	39.10	40.96
EPS14b****	Port Street Evesham	Y	92		42.14	40.94	41.82
EPS14c****	Port Street Evesham	Y	92		42.07	44.31	44.26
EPS41	Port Street Evesham	Y	92		36.05	30.67	38.38
EPS42	Port Street Evesham	N	50		38.15	27.75	32.48
EPS43	Port Street Evesham	Y	92		36.75	34.87	42.41
EPS44	Port Street Evesham	Y	92		36.69	34.11	38.02
EPS45	Castle Street Evesham	N	92		27.27	25.69	28.81
EPS46	Castle Street Evesham	N	92		28.59	28.37	30.79
EPS47	Waterside Evesham	N	84		30.00	30.04	38.12
EPS48	Bridge Street Evesham	N	9		23.60	20.56	31.48
EPS49	Burford Road Evesham	N	92		21.75	29.32	33.62

**** Average of triple diffusion tubes 2008 $41.78\mu\text{g}/\text{m}^3$

**** Average of triple diffusion tubes 2009 $41.45\mu\text{g}/\text{m}^3$

**** Average of triple diffusion tubes 2010 $42.35\mu\text{g}/\text{m}^3$

Automatic Monitoring Data

No automatic monitoring is carried out.

2.2.2 PM₁₀

No monitoring carried out

2.2.3 Sulphur Dioxide

No monitoring carried out.

2.2.4 Benzene

No monitoring carried out

2.2.5 Other pollutants monitored

No other pollutant monitored.

2.2.6 Summary of Compliance with AQS Objectives

Wychavon District Council has examined the results from monitoring in the district. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

3 New Local Developments

Planning consent has been given for a housing development in Offenham Road Evesham this will result in potentially more traffic in the Port Street AQMA but an air quality assessment at the planning stage did not indicate a significant increase in pollution.

A residential development in Badsey Road Evesham has commenced this will result in potentially more traffic in the Port Street AQMA but an air quality assessment at the planning stage did not indicate a significant increase in pollution.

The impact will be kept under review and the Action Plan reviewed accordingly.

3.1 Road Traffic Sources

There is a proposal to close and rebuild the New Bridge Abbey Road Evesham. This is one of the crossings over the River Avon and takes traffic in and out of town. There are concerns about what impact this will have on the Port Street Evesham AQMA because more traffic may be using the Workman Bridge which feeds traffic into Port Street. This matter is being kept under review.

A road enhancement scheme has been carried out in High street Evesham with a view to improving traffic flow and the environmental. Monitoring of Nitrogen dioxide is continuing to see the impact of the improvements.

3.2 Other Transport Sources

No new transport sources have arisen since the last report.

3.3 Industrial Sources

Three new small waste oil burners have permitted since the last report..

An Energy from Waste Plan has recently been approved on the Hartlebury Trading Estate. It is not considered that it will lead to exceedences of the objectives.

3.4 Commercial and Domestic Sources

No changes have occurred since last report.

3.5 New Developments with Fugitive or Uncontrolled Sources

No new developments have taken place since the last report.

Wychavon District Council confirms that there are no new or newly identified local developments which may have an impact on air quality within the Local Authority area.

Wychavon District Councils confirms that all the following have been considered –

- **Road traffic sources**
- **Other transport sources**
- **Industrial sources**
- **Commercial and domestic sources**
- **New developments with fugitive or uncontrolled sources.**

4 Local / Regional Air Quality Strategy

No changes have taken place in Local or Regional Air Quality Strategies

5 Planning Applications

New planning applications are considered for air quality impacts but none has been identified that will lead to exceedances of the objectives.

6 Air Quality Planning Policies

No changes

7 Local Transport Plans and Strategies

No changes

8 Climate Change Strategies

No changes.

9 Implementation of Action Plans

There has been no progress on the implementation of the action plan.

10 Conclusions and Proposed Actions

The existing diffusion tube monitoring will continue, but there may be a review of the number of tubes, as passed records show no exceedences,