WEST OXFORDSHIRE DISTRICT COUNCIL

WEST OXFORDSHIRE
DISTRICT COUNCIL

2016 Air Quality Annual Status Report (ASR) for WEST OXFORDSHIRE DISTRICT COUNCIL

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

August 2016

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Executive Summary: Air Quality in Our Area

The monitoring reported within the 2016 Annual Status Report for West Oxfordshire District Council does not indicate any additional areas of general concern with regard to air quality.
Within the District there are no industrial developments with air pollution implications and any development proposals have been considered with regard to their potential to increase traffic pollution in the AQMAs and other areas.

Chipping Norton AQMA
The Chipping Norton Air Quality Action Plan, as accepted by Defra, proposed the introduction of a Weight Limit for HGVs and re-routing of HGV traffic (primarily targeting the Vale of Evesham / SE England two way flow).

The proposal has the objective of reducing HGV traffic density on the A44 through Chipping Norton by routing traffic further to the West on the A40 to access the Vale of Evesham from the South. This measure would involve 'de-priming' the A44 (currently a Primary Route for HGVs) and associated modification to signage.

Oxfordshire County Council (OCC) commissioned a feasibility study for the implementation of the lorry management measures. Currently, further consultation with neighbouring Counties is necessary and financial constraints within OCC budgets have delayed plans to implement this Action Plan.

The above intent remains, re-stated, within the OCC LTP4 (2011 – 2030) (Vol 1, Page 77, Para 195). A schedule for implementation is still awaited. (Reference A).

However, the WODC Low Carbon and Environment Plan (2013), addresses some of the additional air quality mitigation measures within the Air Quality Action Plan.

Witney AQMA
The Draft Action Plan for the Witney AQMA, having been deferred for a significant period pending the outcome of the Cogges Link Road (CLR) Planning Application by OCC, was approved by WODC Cabinet in December 2010. A period of public consultation was conducted throughout February 2011.

The Draft Action Plan for the Witney AQMA was written with the assumption that the CLR would proceed as per the Planning Consent. There were further procedural stages to be concluded after which the Draft Action Plan and the results of the public consultation would be reviewed to produce an Action Plan (and which would include the latest dispersion modelling) for consideration and approval by WODC Cabinet and OCC and in due course submitted to Defra.

This latter expectation failed to materialise as, in June 2012, the Department for Transport refused a compulsory purchase order for the land Oxfordshire County Council needed to build the Cogges Link Road

Accordingly, there is currently no Draft Action Plan for the Witney AQMA pending the revision of options which might address traffic flow within and around Witney.
OCC LTP4, (Vol 2, Sect ii, Pages 77 - 85) details the proposals.(Reference B)

Air Quality in WEST OXFORDSHIRE

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas[1,2].

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3].

The main air quality issues in the local area are related to vehicular density within relatively congested urban areas thus Nitrogen Dioxide is the main pollutant of concern. The latest monitoring points towards a continuing decrease in pollutant levels. Current AQMAs are located within the two largest towns within the District – Witney (Bridge Street and area) and Chipping Norton (Horsefair and area) :

Bridge Street, Witney (Air Quality action plan pending)

http://www.westoxon.gov.uk/media/744184/Chipping-Norton-Air-Quality-Action-Plan.pdf

The local authority (LA) manages the local air quality monitoring, only employing outside contractors to service and maintain equipment on a daily basis. At year end, data ratification is completed externally. Otherwise a LA officer conducts station calibration, distributes non-automatic pollution level indicators (Diffusion Tubes) and does routine data capture and gathering duties.

There is an active liaison with 3 neighbouring Districts and Oxford City and this grouping has produced a useful additional resource:

https://oxfordshire.air-quality.info/

County Council participation has been somewhat limited by financial constraints since their initial involvement in approving an Action Plan for Chipping Norton and this has been reflected in subsequent Local Transport Plans (LTP).

[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010
[2] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
[3] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

Actions to Improve Air Quality

Activity within West Oxfordshire has been limited to monitoring and data collection however cooperation between adjacent Local Authority officers as 'Oxford Air Quality' gave rise to a local Air Quality information resource which was the eventual outcome of a Defra grant funded project initiated by South Oxfordshire District Council.

A positive benefit for the rural areas surrounding the City of Oxford is the outstanding work done to reduce emissions from public tranport within the city as those same buses then travel to the outskirts and beyond.

Local Priorities and Challenges

'Oxford Air Quality' from West Oxfordshire's perspective is essentially an Eastward focused group however towards the West, the recent and ongoing interconnectivity between the District Councils of Forest of Dean, Cotswold and West Oxfordshire may afford the opportunity for a different (regional) approach. The three, essentially rural, districts share the same common source of actual and potential pollution arising from vehicular density within congested or high traffic density areas. In Chipping Norton for example, in additional to any financial consideration, a further constraint upon the progress of any Action Plan has been the political implication (and potential impass) which might arise as traffic is diverted from one sensitive area towards another area of similar concern within a neighbouring District.

In Witney, the priority for the Local Authority in addressing air quality for the coming year will be to formulate an Action Plan – still outstanding since the demise of the previous Draft Action Plan based upon a road scheme which is no longer viable. However a road traffic development, as currently proposed, should eventually provide the basis of an Action Plan which County Council should be able to endorse.

How to Get Involved

As the solution to traffic related pollution lies essentially in road traffic management local authorities do not hold the purse strings sufficient to bring about major project change. Local interest groups can however lobby County Councils directly to influence the content of Local Transport Plans (LTP).

Burford, for example, is one such community striving to control the passage of HGVs through the town as it has an 'A road' north / south crossing of the River Windrush.

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1 Local Air Quality Management

This report provides an overview of air quality in West Oxfordshire during 2015. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by West Oxfordshire to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.2 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of the objectives.

A summary of AQMAs declared by West Oxfordshire can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at

https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=309

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	One Line Description	Action Plan
WITNEY Bridge Street / High Street	NO_2 annual mean	Witney	An area encompassing a number of residential and commercial properties	Air Quality Action Plan pending
CHIPPING NORTON Horsefair / High Street	NO_2 annual mean	Chipping Norton	An area encompassing a number of residential and commercial properties	http://www.westoxon.gov.uk/media/744184/Chipping-Norton-Air-Quality-Action-Plan.pdf

2.2 Progress and Impact of Measures to address Air Quality in West Oxfordshire

West Oxfordshire has taken forward a number of measures during the current reporting year of 2015 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. More detail on these measures can be found in their respective Action Plans.

Key completed measures are:

- 'Oxford Air Quality' (OAQ) group established with Defra grant aid to consider local air pollution and related health concerns
- Real time web site established as a public information source. This is at: https://oxfordshire.air-quality.info/

Progress on the following measures has been slower than expected due to:

- 'Live' link to OAQ hampered by an incompatability regarding WODC data transfer. Subject to ongoing investigation.
- Progress with Chipping Norton Action Plan stalled due to financial and potential District / County Council 'cross border' complications. The latter may be resolved following recent 'unification' of regional environmental working.(See Reference A)

West Oxfordshire expects the following measures to be completed over the course of the next reporting year:

- Subject to Oxfordshire County Council progress with a traffic relief scheme in the Witney area (Shores Green and Downs Road / A40 junctions) a Draft Action Plan could be initiated. (See Reference B)

West Oxfordshire's priorities for the coming year are:

- Transition to 'unified' working with three District Councils with associated rearranged financial and manning levels.

- Working towards progression of AQ matters in the Chipping Norton area.
- Establishing the basis of a (revised) Action Plan in the Witney area.
- Maintaining links to the East through the OAQ group.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Witney AQMA Action Plan	Freight and Delivery Management	Route Management Plans/ Strategic routing strategy for HGV's	OCC	LTP4	Awaited	Reduced NO2 levels recorded	Reduced traffic density	Awaited	Not known	See Reference B
2	Local AQ assoc	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	OAQ	N/A	N/A	Air quality data information Public awareness Increasing awareness within health monitoring policy		In service	Complete	View at: https://oxfordshire.air-quality.info/
3	Chipping Norton AQMA Action Plan	Traffic Management	Congestion management, traffic reduction	OCC	Basic survey completed	Unknown – financial prioritisation	Reduced NO2 levels recorded	Reduced traffic density	Static	Unknown	See Reference A

2.3 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that $PM_{2.5}$ has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

West Oxfordshire is taking the following measures to address $PM_{2.5}$:

Other than the potential source from vehicular traffic there is no other source of such particulate matter which has been identified within the District and the control of which would be sought (in that event) in the context of an Air Quality Action Plan established to achieve a reduction in Nitrogen dioxide levels.

Partnership working by the OAQ group has involve liaison with local County transport and health committees to raise the value of the Air Quality contribution to the general discussion.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

West Oxfordshire undertook automatic (continuous) monitoring at 2 sites during 2015. Table A.5 in Appendix A shows the details of the sites. Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

West Oxfordshire undertook non-automatic (passive) monitoring of NO_2 at 39 sites during 2015. Table A.6 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for “annualisation” and bias. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.7 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3.

For diffusion tubes, the full 2015 dataset of monthly mean values is provided in Appendix B. There were no exceedances of the air quality objectives **(**considering Non-Automatic Monitoring Sites**)** where annual means greater than 60µg/m^3were recorded possibly indicating a likely exceedance of the 1-hour mean objective.

Table A.8 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year. In 2015 there were no such exceedances.

Appendix A: Monitoring Results

Table A.5 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
CM1	WITNEY	Roadside	435768	210177	NO_2	Y	Chemiluminescent	0.5	2.0	2.0
CM2	CHIPPING NORTON	Roadside	431404	227206	NO_2	Y	Chemiluminescent	2.0	0.5	2.0

Table A.6 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X / Y OS Grid Ref		Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
1	Bridge St, Witney	R	435816 210239		All NO2	Y	0.5	2		All at 2.5 – 3.0.
2	Mill Street, Witney	R	435671 210198			Y	0.5	1		
3	Early Rd., Witney	B	436339 210806					2		
4	25 Bridge St Witney	R	435853 210302			Y	0	1		
5	High St, (N) Burford	R	425187 212431				0.5	2		
6	93 High Street, (S) Burford	R	425156 212197				2	0.5		
7	Frethern Cl, Burford	B	425406 211678					1		
8	Orchard Rise, Burford	B	425447 211949					1		

Site ID	Site Name	Site Type	X / Y OS Grid Ref		Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
9	Brize Norton Rd, Carterton	R	428329 206946				**15**	**1**		
10	Upavon Way, Carterton	R	428467 207442				**N/A**	**2**		
11	Garner Close, Carterton	B	427415 208234					**1**		
12	Oakfield Road, Carterton	B	427687 206254					**1**		
13	Dyers Hill, Charlbury	R	435585 219620				**1**	**1**		
14	Nineacres Lane, Charlbury	R	435654 219763				**10**	**1**		
15	Tanners Close, Charlbury	B	435945 219324					**1**		
16	The Green, Charlbury	B	436138 219973					**1**		

Site ID	Site Name	Site Type	X / Y OS Grid Ref		Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
17	Horsefair, Chipping Norton	R	431425 227275			Y	0.5	0.5		
33	17, Horsefair Chipping Norton	R	431450 227315			Y	2	0.5		
36 37 38	Co-location, Chipping Norton (Triplicate Mean)	R	431404 227206			Y	2	0.5	YES	(2.0)
34	5 Horsefair, Chipping Norton	R	431439 227268			Y	0	5		
35	7 Horsefair, Chipping Norton	R	431443 227282			Y	0	4		
18	West Street, Chipping Norton	R	431300 226959			Y	0.5	2		

Site ID	Site Name	Site Type	X / Y OS Grid Ref		Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
19	Coopers Close, Chipping Norton	B	431694 227156					1		
20	Withers Way Chipping Norton	B	431207 226877					1		
21	Acre End Street, Eynsham	R	442950 209301				2	1		
22	Mill Street, Eynsham	R	443309 209573				1	1		
23	Orchard Close, Eynsham	B	443632 209356					0.5		
24	Shakespeare Rd, Eynsham	B	442856 209781					1		
25	Oxford Street, (E) Woodstock	R	444592 216763				2	1		

Site ID	Site Name	Site Type	X / Y OS Grid Ref		Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
26	Oxford Street, (W) Woodstock	R	444536 216846				**8**	**0.5**		
27	The Ley, Woodstock	B	445131 216615					**1**		
28	Westland Way, Woodstock	B	444212 217270					**1**		
29	Grove Road, (S) Bladon	R	444871 214983				**8**	**1**		
30	Grove Road, (N) Bladon	R	445190 215353				**11**	**1**		
31	Heath Lane, Bladon	B	445227 214402					**1**		
32	Park Close, Bladon	B	444851 215094					**1**		
39	Park Street, Bladon	R	444791 214681				**0.5**	**1**		

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

Table A.7 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2015 (%) (2)	NO_2 Annual Mean Concentration (µg/m^3) (3)				
					2011	2012	2013	2014	2015
CM1	Roadside	Automatic		98.2%	27.9	28.2	29.6	26.2	23.1
CM2	Roadside	Automatic		97%	38.3	36.6	38.0	36.4	32.7
DT1	Bridge Street	R		100%	**54.0**	**49.3**	**51.3**	**47.2**	**43.7**
2	Mill Street	R		100%	**45.4**	**41.5**	37.9	37.3	36.3
3	Early Rd.	B		100%	15.4	14.0	14.4	12.6	12.1
4	25 Bridge Street	R		100%					**53.2**
5	High St	R		100%	37.7	33.6	34.1	33.0	34.1
6	93 High Street	R		100%	37.5	30.9	36.5	35.0	30.6
7	Frethern Cl	B		92%	12.0	12.6	10.9	11.1	9.8
8	Orchard Rise	B		100%	10.5	10.3	10.3	9.3	9.3
9	Brize Norton Rd	R		100%	20.9	21.8[a]	26.1	26.0	21.0
10	Upavon Way	R		100%	21.8	20.0	19.9	17.5	16.9
11	Garner Close	B		100%	11.6	11.5		10.1	9.8

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2015 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
					2011	2012	2013	2014	2015
							12.1		
12	Oakfield Road	B		100%	13.6	13.2	14.1	11.9	10.9
13	Dyers Hill	R		100%	18.5	17.9	17.0	15.4	15.2
14	Nineacres Lane	R		100%	16.9	15.7	15.5	14.3	14.4
15	Tanners Close	B		92%	11.2	10.2	10.3	8.9	8.9
16	The Green	B		75%	10.8	10.6	11.1	9.4	9.6
17	Horsefair	R		100%	60.0	**61.6**	**56.1**	**57.7**	**54.9**
33	17 Horsefair	R		100%		31.9	31.4	30.5	29.1
36	CN Co location	R		100%					
37	CN Co location	R		92%					
38	CN Co location	R		92%					
	TRIP.MEAN				41.5	38.4	39.6	39.1	35.5
34	5 Horsefair	R		92%	26.8	24.2	23.3	23.7	21.7
35	7 Horsefair	R		92%	26.7	24.7	24.8	24.0	22.5
18	West Street	R		100%	31.5	29.6	27.3	27.0	25.9
19	Coopers Close	B		100%	12.6	11.5	12.6	10.4	9.9
20	Withers Way	B		100%	11.2	11.5	12.1	10.2	9.1

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2015 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
					2011	2012	2013	2014	2015
21	Acre End Street	R		92%	16.4	16.2	16.6	13.3	13.5
22	Mill Street	R		100%	16.9	15.3	15.9	14.3	13.1
23	Orchard Close	B		100%	12.4	12.3	12.4	10.2	10.4
24	Shakespeare Rd	B		100%	14.6	14.0	14.9	12.6	11.9
25	Oxford Street	R		100%	33.9	32.5	33.9	30.2	27.5
26	Oxford Street(2)	R		83%	35.4	33.9	33.6	29.6	26.0
27	The Ley	B		100%	11.7	11.5	12.5	10.1	10.5
28	Westland Way	B		100%	11.3	12.2	12.6	11.2	10.9
29	Grove Road	R		100%	21.1	20.8	21.3	20.7	20.3
30	Grove Road(2)	R		100%	27.8	26.1	25.8	21.9	24.6
31	Heath Lane	B		100%	12.6	12.6	12.0	10.4	10.1
32	Park Close	B		100%	11.7	10.8	10.9	9.8	8.9
39	Park Street	R		100%	34.3	33.5	31.1	31.8	31.1

Notes: Exceedances of the NO_2 annual mean objective of $40\mu g/m^3$ are shown in **bold**.

NO_2 annual means exceeding $60\mu g/m^3$, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per Technical Guidance LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.8 – 1-Hour Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2015 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
					2011	2012	2013	2014	2015
CM1	Roadside	Automatic		98.2	0 (100.2)	0 (87.5)	0 (90.9)	0 (86.4)	0 (78.9)
CM2	Roadside	Automatic		97	5 (182.9)	1 (157.9)	3 (155.9)	0 (139.3)	0 (137.8)

Notes: Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold.**

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 90%, the 99.8th percentile of 1-hour means is provided in brackets.[99.8th percentile provided, notwithstanding Note]

Appendix B: Full Monthly Diffusion Tube Results for 2015

Table B.2 – NO_2 Monthly Diffusion Tube Results - 2015

Site ID		NO_2 Mean Concentrations ($\mu g/m^3$)													
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
														Raw Data	Bias Adjusted (1)
1	Bridge Street	61.1	53.5	61.3	61.4	46.2	38.6	43.0	50.4	59.1	58.3	56.3	58.1	53.9	**43.7**
2	Mill Street	41.6	52.0	49.9	47.9	32.2	35.7	39.9	43.3	45.9	48.9	50.3	50.9	44.9	36.3
3	Early Rd.	26.4	21.5	18.2	11.5	8.8	7.1	10.0	10.8	14.9	15.5	17.5	17.4	15.0	12.1
4	25 Bridge Street	82.1	78.4	75.8	65.8	59.1	56.4	55.9	55.5	70.6	78.3	61.4	49.1	65.7	**53.2**
5	High St	42.1	52.7	49.5	38.4	36.0	39.0	42.1	42.1	42.1	42.0	41.2	37.4	42.1	34.1
6	93 High Street	32.7	44.2	44.0	39.2	30.8	29.3	32.3	39.1	41.4	48.6	31.9	39.8	37.8	30.6
7	Frethern Cl	16.1	12.7	14.8	12.5	7.7	ND	8.8	9.2	13.0	16.1	11.2	11.1	12.1	9.8
8	Orchard Rise	17.7	15.3	14.4	10.9	6.7	6.8	7.4	8.7	9.1	19.3	11.6	10.3	11.5	9.3
9	Brize Norton Rd	36.2	28.7	26.9	22.9	21.5	19.7	20.0	19.0	29.8	31.8	28.2	26.3	25.9	21.0
10	Upavon Way	25.0	26.0	24.9	21.0	17.3	13.0	13.6	16.5	21.3	27.0	21.8	23.0	20.9	16.9
11	Garner Close	16.9	15.4	16.6	12.1	8.5	6.7	7.8	8.7	10.4	16.4	13.1	12.8	12.1	9.8
12	Oakfield Road	20.5	19.2	18.0	13.8	8.7	5.3	8.6	9.1	13.3	17.6	15.9	12.2	13.5	10.9
13	Dyers Hill	22.8	23.0	22.7	21.1	16.0	15.9	14.4	17.0	18.9	23.9	17.4	12.6	18.8	15.2
14	Nineacres Lane	23.8	21.9	18.1	19.2	14.1	10.6	12.2	14.8	18.6	23.0	19.7	16.7	17.7	14.4
15	Tanners Close	12.6	16.1	14.3	13.3	ND	6.1	5.4	7.9	9.9	14.3	10.5	9.9	10.9	8.9
16	The Green	16.1	16.0	13.0	13.1	ND	5.7	6.8	8.1	ND	14.6	ND	13.0	11.8	9.6
17	Horsefair	87.7	68.4	79.0	70.7	65.0	54.7	64.7	67.3	60.5	74.6	64.0	56.9	67.8	**54.9**
33	17 Horsefair	38.1	44.1	38.7	39.7	30.4	28.3	27.8	33.8	38.3	41.5	36.1	34.0	35.9	29.1
36	CN Co location	35.7	56.3	56.5	51.5	37.9	34.6	40.6	45.8	51.2	66.5	39.3	37.8	46.1	
37	CN Co location	33.1	51.6	47.1	52.8	38.1	36.6	33.7	42.3	49.0	60.5	~~9.3~~	39.4	44.0	

Site ID	NO_2 Mean Concentrations (µg/m^3)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (1)
38 CN Co location	36.2	~~36.5~~	45.9	53.3	35.1	31.9	37.2	42.2	48.8	56.0	32.9	34.5	41.3	
TRIP.MEAN	35.0	54.0	49.8	52.5	37.0	34.4	37.2	43.4	49.7	61.0	36.1	37.2	43.9	35.5
34 5 Horsefair	25.2	25.5	30.1	29.4	22.5	22.8	24.1	ND	29.8	35.0	24.1	26.4	26.8	21.7
35 7 Horsefair	31.4	29.2	ND	36.1	25.4	21.6	22.4	25.7	34.4	37.6	24.9	16.8	27.8	22.5
18 West Street	39.8	45.8	32.0	35.0	25.0	23.5	28.2	29.1	38.1	41.9	24.0	21.1	32.0	25.9
19 Coopers Close	16.8	14.1	15.3	12.6	9.7	7.2	9.6	9.9	11.6	15.6	13.4	11.3	12.3	9.9
20 Withers Way	15.2	18.5	12.5	14.6	7.6	6.5	7.3	8.4	12.6	17.8	2.1	11.7	11.2	9.1
21 Acre End Street	25.7	21.6	16.5	20.9	9.0	9.8	12.5	13.7	18.8	20.9	ND	13.7	16.6	13.5
22 Mill Street	23.3	19.2	19.2	19.7	10.6	10.4	10.1	12.7	18.6	23.7	12.3	14.6	16.2	13.1
23 Orchard Close	20.0	17.3	14.6	14.3	7.6	7.8	7.4	10.2	13.8	18.4	12.1	10.5	12.8	10.4
24 Shakespeare Rd	21.2	17.1	17.9	18.8	9.9	9.2	9.2	9.2	15.7	22.3	14.5	11.4	14.7	11.9
25 Oxford Street	37.4	37.4	42.5	40.2	20.7	27.4	24.2	29.1	41.1	48.1	29.3	29.6	33.9	27.5
26 Oxford Street(2)	32.3	37.7	ND	32.4	27.3	28.1	27.3	32.6	38.6	35.9	ND	28.8	32.1	26.0
27 The Ley	18.3	17.1	15.6	12.7	7.8	8.0	8.5	10.9	12.6	15.5	15.0	14.1	13.0	10.5
28 Westland Way	19.8	18.9	15.9	14.3	8.0	7.3	7.6	10.0	14.5	17.3	15.6	12.8	13.5	10.9
29 Grove Road	31.4	32.6	27.1	26.3	17.1	17.0	20.1	21.4	28.1	30.4	24.7	24.3	25.0	20.3
30 Grove Road(2)	39.0	38.9	33.7	27.3	18.3	22.0	24.5	29.0	32.0	40.9	29.8	29.0	30.4	24.6
31 Heath Lane	19.5	12.6	15.1	13.8	8.3	7.0	8.2	10.8	12.0	17.0	15.6	9.9	12.5	10.1
32 Park Close	15.5	16.8	12.3	10.2	7.4	7.2	7.2	9.4	9.1	15.1	10.6	11.2	11.0	8.9
39 Park Street	41.1	39.6	43.2	40.5	31.3	26.2	34.8	37.6	44.6	48.7	37.5	35.5	38.4	31.1

(1) See Appendix C for details on bias adjustment

AECOM Report (Conclusions)

Continuous Monitoring Summary
The key findings of the 2015 WODC continuous monitoring programme are as follows:

Chipping Norton

- The monitored mean NO2 concentration in 2015 at Chipping Norton was 32.7 µg/m3, which is below the annual mean NO2 objective of 40 µg/m3.
- The monitored annual mean NO2 concentration for 2015 is lower than recorded concentrations all years since 2010, and somewhat lower than the next-lowest annual mean concentration (36.6 µg/m3 recorded in 2012).
- Data capture in 2015 (97.0%) was very good, with the only significant data loss occurring during December 2015 due to a problem with the pump.
- There were no monitored exceedences of the hourly NO2 standard of 200 µg/m3 in 2015 and therefore the hourly NO2 objective was achieved.
- The maximum hourly concentration was recorded on 08/05/2015 at 14:00 (186.8 µg/m3).
- The 99.8th percentile of hourly mean NO2 concentrations was calculated to be 137.8 µg/m3, which is lower than the corresponding results for 2012 (157.9 µg/m3), 2013 (155.9 µg/m3) and 2014 (139.3 µg/m3) and provides further indication that the hourly NO2 objective was achieved.

The latest monitoring results from Chipping Norton provide evidence of a continuation of decreasing NO2 concentrations that has been observed during recent years. The annual mean NO2 concentration in 2015 was the lowest since 2010 and somewhat lower than the next lowest annual mean NO2 concentration of 36.4 µg/m3, recorded in 2012.

Witney

- The monitored annual mean NO2 concentration in 2015 at Witney was 23.1 µg/m3. This is well below the annual mean NO2 objective of 40 µg/m3.
- The 2015 annual mean NO2 concentration was the lowest recorded concentration since at least 2010. The corresponding annual mean NO2 concentrations in 2010, 2011, 2012, 2013 and 2014 were 33.0 µg/m3, 30.2 µg/m3, 28.2 µg/m3, 29.6 µg/m3, and 26.2 µg/m3, respectively.

- Good data capture was achieved at Witney in 2014 (98.2%). Minor data losses were incurred as a result of remote communication problems.
- No monitored exceedences of the hourly NO2 standard were reported in 2015 at Witney. The 99.8th percentile of hourly mean NO2 concentrations was 78.9 µg/m3. These results indicate compliance with the hourly objective at this site. This is consistent with previous monitoring at this location.
- The maximum hourly concentration was recorded on 24/01/2015 at 18:00 (100.3 µg/m3).

NO2 concentrations at Witney in 2015 remained well below the annual mean objective and the hourly objective was achieved. These results are consistent with previous monitoring at the site. The latest monitoring results from Witney, like Chipping Norton, provide evidence of decreasing NO2 concentrations over time.

Diffusion Tube Monitoring Summary

The main conclusions of West Oxfordshire District Council Diffusion Tube Survey for 2015 are as follows:

- Raw diffusion tube results were bias-adjusted using a local adjustment factor of 0.74. This locally derived factor was favoured over using a nationally derived factor as good data capture and good diffusion tube precision were achieved at the continuous monitoring site at Chipping Norton used for co-location. Furthermore, the local bias adjustment factor is considered to be more representative of conditions within West Oxfordshire.
- Two diffusion tube monitoring sites within the District exceeded the annual mean NO2 objective of 40 µg/m3 after local bias adjustment. These were: Horsefair, Chipping Norton (50.2 µg/m3) and 25 Bridge Street, Witney (48.6 µg/m3). A second monitoring location at Bridge Street, Witney, approached the annual mean NO2 objective but did not exceed it.
- Exceedences of the annual mean NO2 objective have been reported previously at Horsefair, Chipping Norton and Bridge Street, Witney and therefore do not represent areas of new exceedence.
- Horsefair has frequently recorded the highest annual mean concentrations in recent years' surveys. The result for this location for 2015, whilst still above the annual mean NO2 objective, is lower than all results since at least 2010 and may be evidence of decreasing concentrations at this location.
- No diffusion tube site is anticipated to have exceeded the hourly mean NO2 objective as annual mean NO2 concentrations at all sites were below 60 µg/m3. This result is consistent with previous years' survey results.

- Good data capture was achieved at all sites, with 35 out of the 37 sites achieving at least 90% data capture. Data capture rates at The Green, Charlbury (75%), and Oxford Street (2), Woodstock (83%) were the only sites below 90%.

The latest diffusion tube survey results reveal that the same locations remain problematic in terms of elevated NO2 concentrations. Consistent with previous monitoring, the highest annual mean NO2 concentration was at Horsefair, Chipping Norton and monitoring locations in Bridge Street, Witney approached or exceeded the annual mean NO2 objective in 2015. The latest result for Mill Street, Witney, which has exceeded or approached the objective in recent years, was the lowest since 2010 and marks a continuation of the decreasing tendency of concentrations at this location.

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Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

Data includes both automatic monitoring and diffusion tube monitoring.

The monitoring site locations are representative of relevant public exposure.

The results, overall, do not indicate any additional areas of concern requiring a detailed assessment.

Automatic AQ Monitoring Stations

In **Chipping Norton**, the automatic monitoring station returned a Mean Pollution Concentration of **32.7** µg/m^3 based on a **97.0**% data capture. The measured annual mean concentration (by Diffusion Tube) is greater than 40 µg/m^3 within part of the Chipping Norton AQMA (Horsefair).

The Chipping Norton automatic site has not recorded any 1-hour means above 200 µg/m^3 .

In **Witney**, the automatic monitoring station returned a Mean Pollution Concentration of **23.1** µg/m^3 based on a **98.2**% capture rate. The measured annual mean concentration (by Diffusion tube) is greater than 40 µg/m^3 within part of the Witney AQMA (Bridge Street).

The Witney AQMA site has not recorded any 1-hour means above 200 µg/m^3.

Diffusion Tube Site Monitoring

Monitoring across the district adjusted for laboratory bias shows that 'Bridge Street' in Witney and 'Horsefair' in Chipping Norton currently exceed the objective concentration and these areas lie within the Air Quality Management Areas that were declared in March 2005. All other areas were within the objective limits. Furthermore, with the exception of Mill Street in Witney, all other sites (32) and, additionally, the mean of the three co-located diffusion tubes in Chipping Norton were more than one standard deviation (SD = 4 i.e. 36 µg/m^3 or less) below the objective limit.

Diffusion Tube Bias Adjustment Factors and Factor from Local Co-location Studies

Diffusion tubes are exposed for approximately 4 weeks before being sent for analysis to the supplier, ESG(Didcot). The Overall Bias Adjustment factor available from the AEA spreadsheet March 2016, where the bias adjustment figure provided for the participating laboratories for the period 2015 is **0.81**.

A Bias Adjustment Factor of 0.**74** was calculated using the AEA Spreadsheet for Calculation of Diffusion Tube Precision and Accuracy and the raw NO2 concentrations measured by the Chipping Norton Co-Location study diffusion tubes.

Discussion of Choice of Factor to Use

Both local and national Bias Adjustment Factors were available. The national factor has been used because of the variable data capture rate of the automatic analyser within the Chipping Norton AQMA and to be consistent with previous years' reporting.

The UK NAQS recommended capture rate is 90% and the EU Directive for NO2 specifies a 75% data capture threshold for assessing compliance with limit and guidance values.

- In 2010 the data captured was assessed to be reliable and representative.
- In 2011 the capture rate was reduced due to equipment outages.
- The year 2012 showed a marked improvement in reliability and data capture rate.
- Data capture in 2013 was affected by air conditioning reliability requiring the analyser to be isolated during the warmer period for 8 weeks from July through to September.
- 2014 was a very good year with 97.9% data collection
- 2015 has continued this reliability with 97% data collection

QA/QC of automatic monitoring

Calibration checks of the instrumentation are made every two weeks by the LA and six monthly service and calibration work has been carried out at the Chipping Norton and Witney sites respectively by 'We Care 4 Air' Ltd.

All the data is ratified and validated annually by AECOM Ltd.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes are supplied by ESG (Didcot) and analysed in accordance with ESG's ANU/SOP/1015, Issue 1. This method meets the guidelines set out in Defra's 'Diffusion Tubes for Ambient NO2 Monitoring: Practical Guidance.'

The tubes (from a specified batch) are prepared by spiking acetone : triethanolamine (50:50) on to the grids prior to the tubes being assembled.

In the WASP inter-comparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes, ESG currently holds the highest rank of a 'Satisfactory' laboratory

Ratification of the WODC data was completed by AECOM Ltd in July 2016.

Figure 1

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean
1	05/01/2015	02/02/2015	35.7	33.1	36.2	35	1.7	5	4.1
2	02/02/2015	02/03/2015	56.3	51.6		54	3.3	6	29.9
3	02/03/2015	31/03/2015	56.5	47.1	45.9	50	5.8	12	14.4
4	31/03/2015	29/04/2015	51.5	52.8	53.3	53	0.9	2	2.3
5	29/04/2015	27/05/2015	37.9	38.1	35.1	37	1.7	5	4.2
6	27/05/2015	30/06/2015	34.6	36.6	31.9	34	2.4	7	5.9
7	30/06/2015	28/07/2015	40.6	33.7	37.2	37	3.5	9	8.6
8	28/07/2015	25/08/2015	45.8	42.3	42.2	43	2.1	5	5.1
9	25/08/2015	29/09/2015	51.2	49.9	48.8	50	1.2	2	3.0
10	29/09/2015	27/10/2015	66.5	60.5	56.0	61	5.3	9	13.1
11	27/10/2015	01/12/2015	39.3		32.9	36	4.5	13	40.7
12	01/12/2015	05/01/2016	37.8	39.4	34.5	37	2.5	7	6.2
13									

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Automatic Method		Data Quality Check	
Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
28.2	99.6	Good	Good
39.5	99.6	Good	Good
31.9	99.3	Good	Good
38.2	99.6	Good	Good
32.5	99.3	Good	Good
26.1	99.5	Good	Good
26.5	96.4	Good	Good
29.0	99.7	Good	Good
35.7	98.7	Good	Good
42.2	96.9	Good	Good
36.1	96.6	Good	Good
26.5	79.4	Good	Good
Overall survey -->		Good precision	Good Overall DC

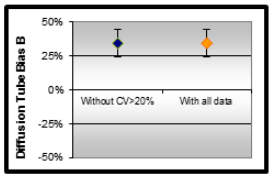
(Check average CV & DC from Accuracy calculations)

Site Name/ ID:	Chipping norton

Precision: 12 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 12 periods of data	
Bias factor A	0.74 (0.69 - 0.8)
Bias B	34% (25% - 44%)
Diffusion Tubes Mean:	44 µgm^{-3}
Mean CV (Precision):	7
Automatic Mean:	33 µgm^{-3}
Data Capture for periods used:	97%
Adjusted Tubes Mean:	33 (30 - 35) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 12 periods of data	
Bias factor A	0.74 (0.69 - 0.8)
Bias B	34% (25% - 44%)
Diffusion Tubes Mean:	44 µgm^{-3}
Mean CV (Precision):	7
Automatic Mean:	33 µgm^{-3}
Data Capture for periods used:	97%
Adjusted Tubes Mean:	33 (30 - 35) µgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

Figure 2

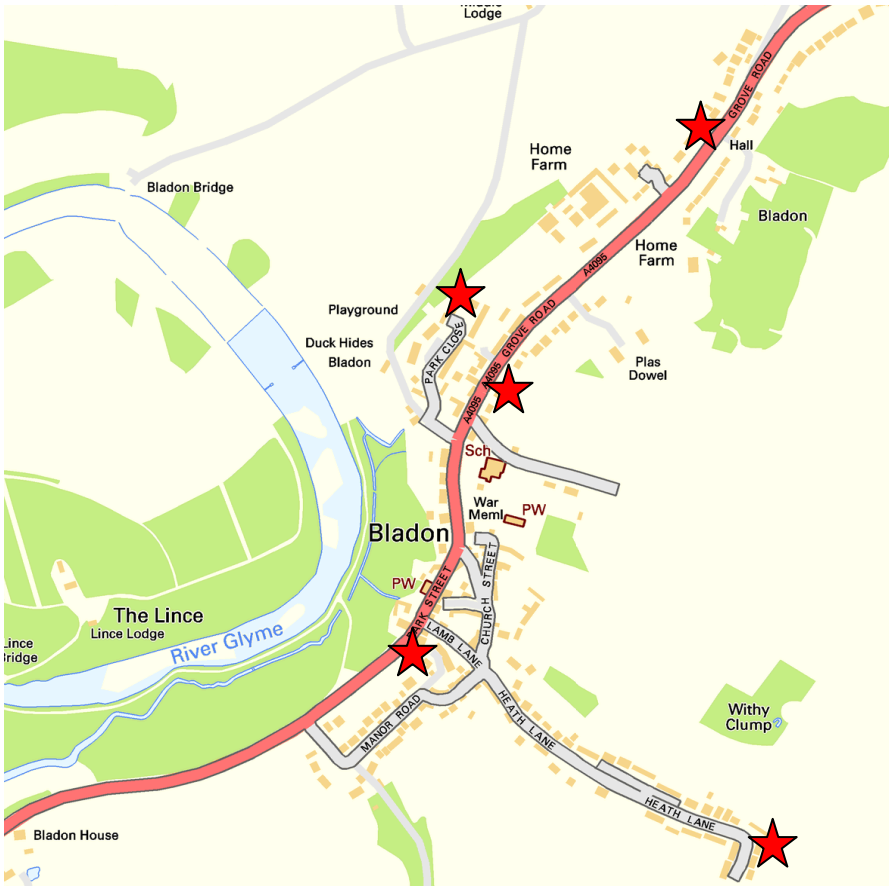
Table 7 National Bias Adjustment Factor Calculation for Diffusion Tube Correction (Spreadsheet Version 03/16)

INPUTS: **Analysed By:** ESG Didcot; **Preparation Method:** 50% TEA in Acetone; **Year:** 2015

Local Authority	Length of Study (months)	Diffusion Tube Mean NO_2 Conc. (µg/m^3)	Automatic Monitor Mean NO_2 Conc. (µg/m^3)	Bias (B)	Tube Precision	Bias Adjustment Factor (A) (Cm/Dm)
Dumfries and Galloway Council	12	35	30	14.6%	G	0.87
Gravesham Borough Council	12	40	30	34.1%	G	0.75
Gravesham Borough Council	12	30	23	29.8%	P	0.77
North Lincolnshire	11	24	18	36.5%	P	0.73
Swale BC	11	38	32	19.3%	P	0.84
Swale BC	10	48	39	21.0%	G	0.83
Swale Borough Council	11	40	34	19.7%	P	0.84
Wrexham County Borough Council	12	19	19	0.6%	G	0.99
Cardiff Council	10	26	26	1.6%	G	0.98
Marylebone Road Intercomparison	12	104	81	27.9%	G	0.78
Vale of White Horse District Council	11	34	29	15.7%	G	0.86
Stockton on Tees	12	24	18	29.4%	G	0.77
Stockton on Tees	12	17	14	21.5%	G	0.82
Suffolk Coastal DC	12	44	35	26.0%	P	0.79
Thanet District Council	9	17	15	10.6%	G	0.90
Thanet District Council	12	27	23	17.8%	G	0.85
Medway Council	12	21	12	77.3%	G	0.56
Medway Council	11	32	23	42.6%	G	0.70
North East Lincolnshire Council	10	34	28	21.2%	P	0.83
North East Lincolnshire Council	11	39	28	38.6%	G	0.72
North East Lincolnshire Council	11	55	47	16.2%	G	0.86
				Overall Factor (21 studies)		0.81

Appendix D: Map(s) of Monitoring Locations

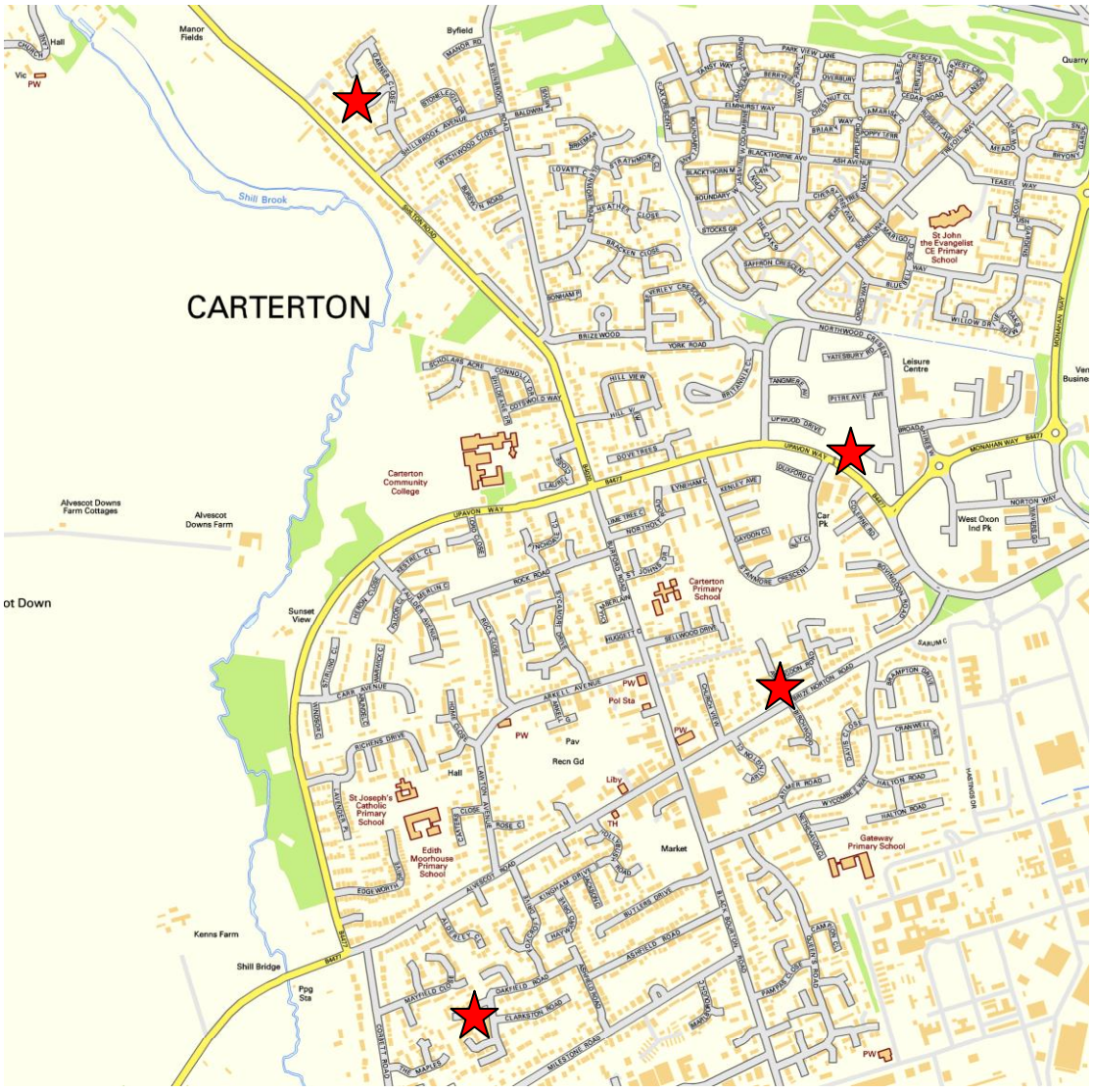
Maps of Non-Automatic Monitoring Sites



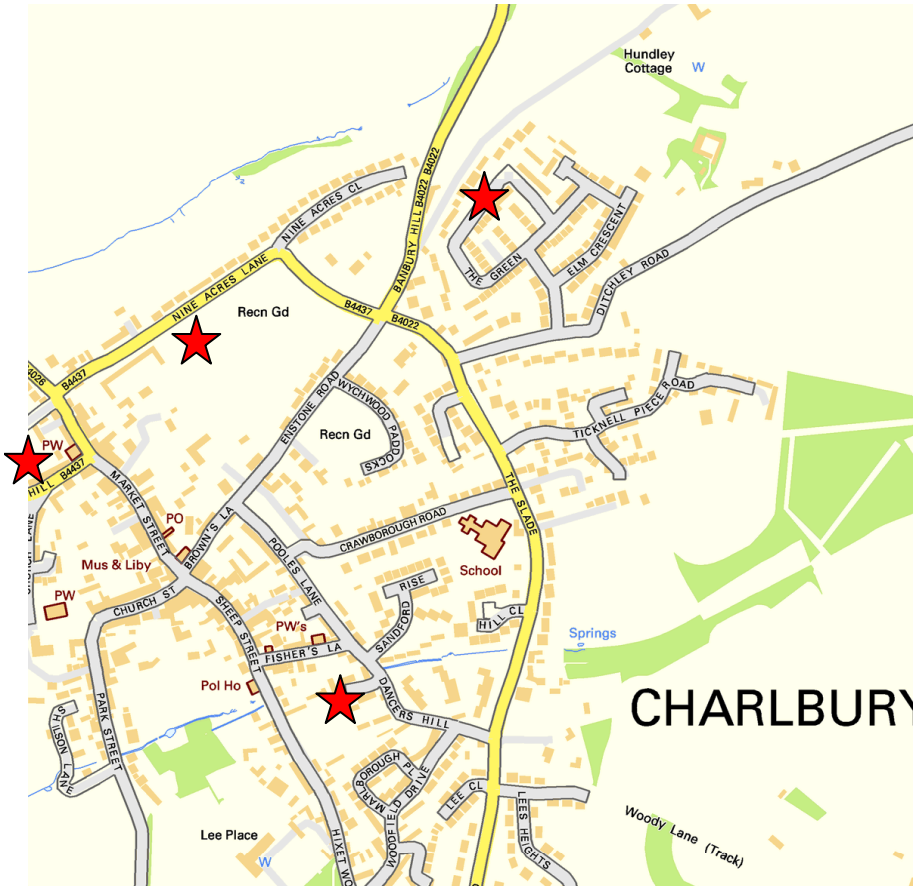
BLADON


A424
A424
A361
Meadow End
Burford Prim Sch
PW
Church Green
CHURCH LANE
PRIORY LANE
Car Park
PW
PO
SHEEP ST
SHEEP STREET
HIGH STREET
WITNEY STREET
GUILDENFORD
PW
The Mill
F Sta
TANNERY CLOSE
BARN LANE
SWAN LANE
WINDRUSH CLOSE
TANNER'S LANE
Pav
Recn Gd
ORCHARD RISE
BURFORD
PW
BARNS LANE
Hotel
A361
A40
A40
A40
OXFORD ROAD
FRETHERN CLOSE

BURFORD


CARTERTON
Shill Brook
Carterton Community College
Carterton Primary School
St John the Evangelist CE Primary School
Leisure Centre
West Oxon Ind Pk
St Joseph's Catholic Primary School
Edith Moorhouse Primary School
Gateway Primary School
Market
Recn Gd
Pol Sta
Shill Bridge
Kenns Farm
Alvescot Downs Farm
Alvescot Downs Farm Cottages
Sunset View
Manor Fields
Byfield
Quarry
UPAVON WAY
BRIZEWOOD
YORK ROAD
MONAHAN WAY
SWINBROOK ROAD
ALVESCOT ROAD
A4077

CARTERTON


Hundley Cottage
NINE ACRES CL
NINE ACRES LANE
BANBURY HILL B4022
B4437
B4022
THE GREEN
ELM CRESCENT
DITCHLEY ROAD
Recn Gd
EINSTONE ROAD
WYCHWOOD PADDOCKS
TICKNELL PIECE ROAD
PW
HILL
MARKET STREET
PO
BROWN'S LA
Mus & Liby
CRAWBOROUGH ROAD
THE SLADE
School
POOLES LANE
RISE
SANDFORD
HILL CL
PW
CHURCH ST
SHEEP STREET
PW's
FISHER'S LA
Springs
Pol Ho
DANCERS HILL
CHARLBURY
PARK STREET
MARLBOROUGH PL
WOODFIELD DRIVE
LEE CL
LEES HEIGHTS
Lee Place
Woody Lane (Track)

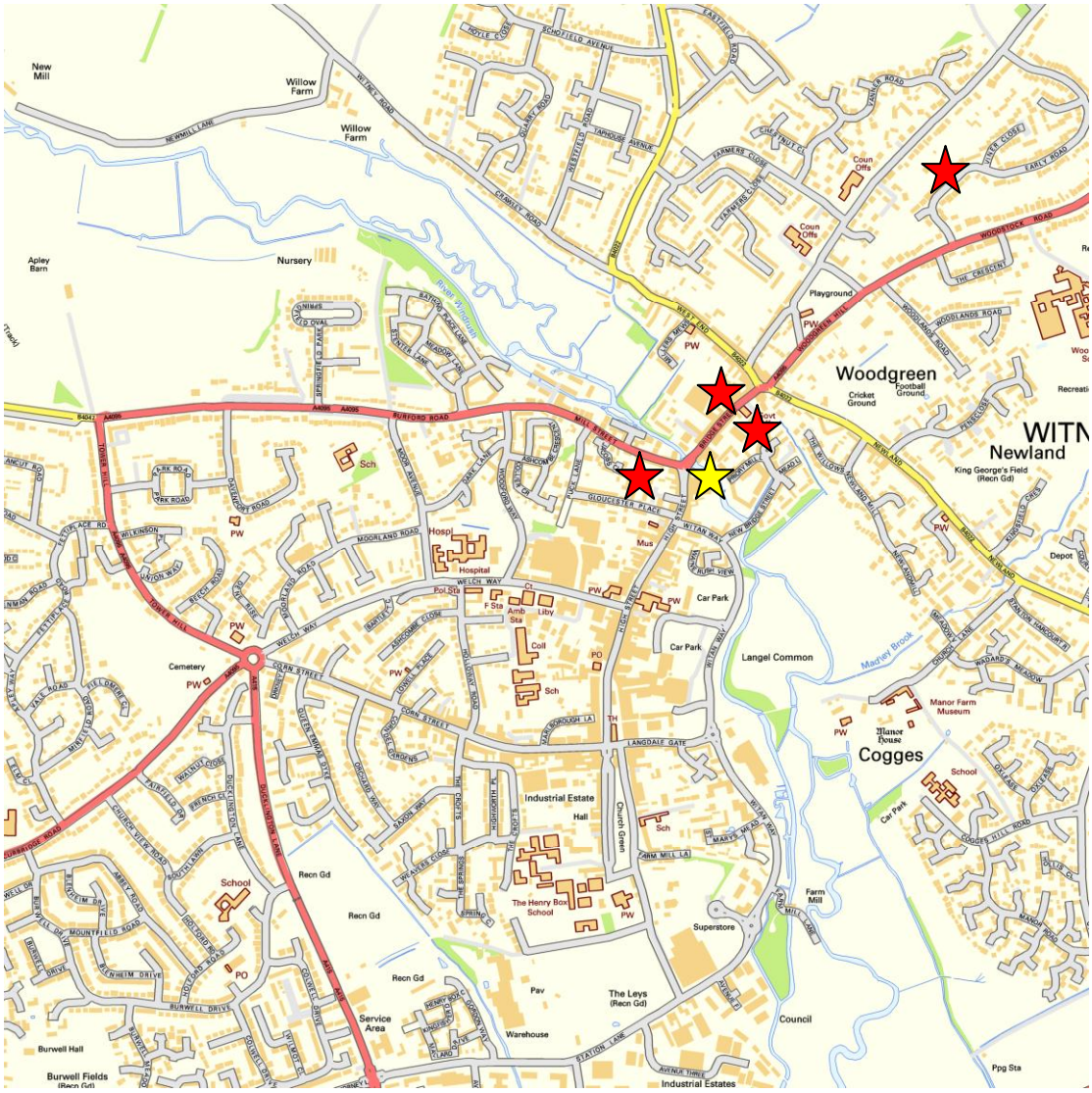
CHARLBURY

CHIPPING NORTON

Diffusion tubes co-located with NOx Analyser

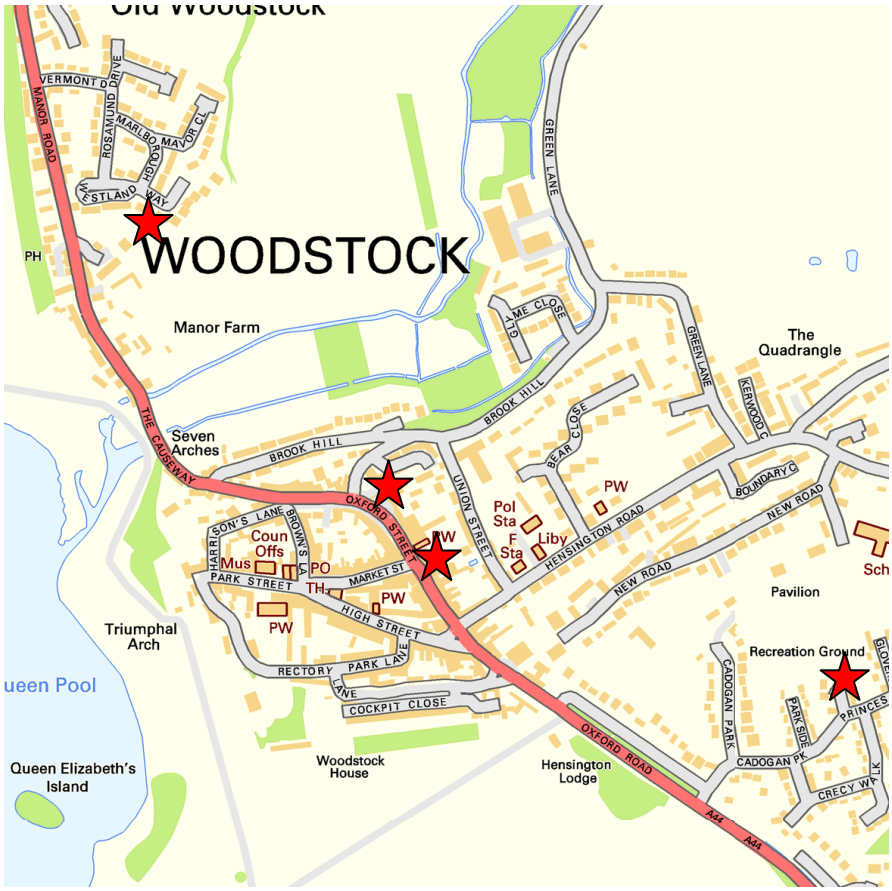

Acre Hill House
A40
A40
B4449
B4449
HANBOROUGH
GREEN'S ROAD
HANBOROUGH PLACE
HANBOROUGH ROAD
WYTHAM CL
WYTHAM VIEW
DOVEHOUSE CLOSE
ARSLEY RD
QUNCAN CL
SHAKESPEARE RD
STRATFORD DRIVE
SPAREACRE LANE
MARLBOROUGH
Wks
PELICAN
MILL MOOR CRES
School
BEECH ROAD
TAWNY CL
NORTHAM RD
PALSTAFF CLOSE
Wks
Eynsham
School
PH
WITNEY ROAD
THORNBURY RD
Hall
BACK LANE
EVANS ROAD
JOHN LOPES RD
NEWLAND STREET
Highcroft House
MILL STREET
PO
Liby
NEWLAND CL
QUEENS CL
TANNERS
QUEEN STREET
CLOVER PLACE
Car Pk
QUEENS LA
THE ORCHARD
BITTERELL
ACRE END STREET
HIGH STREET
PW
SWAN STREET
War Meml
PW
Wks
MERTON CL
BLANKSTONE CL
ABBEY STREET
PW
Pav
OXFORD ROAD
Pp Ho
STATION ROAD
Abbey Farm
Recreation Ground
Park Cottage
Abbey Park House

EYNSHAM



WITNEY

NOx Analyser


WOODSTOCK
Manor Farm
Seven Arches
Triumphal Arch
Queen Elizabeth's Island
Woodstock House
Hensington Lodge
The Quadrangle
Pavilion
Recreation Ground
THE CAUSEWAY
BROOK HILL
OXFORD STREET
MARKET ST
HIGH STREET
PARK STREET
RECTORY LANE
PARK LANE
COCKPIT CLOSE
HENSINGTON ROAD
NEW ROAD
OXFORD ROAD
GREEN LANE
UNION STREET
BEAR CLOSE
KEERWOOD CL
BOUNDARY CL
CADOGAN PARK
CADOGAN PK
PARK SIDE
CRECY WK
PRINCES
MANOR ROAD
VERMONT DRIVE
ROSAMUND DRIVE
MARLBOROUGH CL
WESTLAND WAY
LIME CLOSE
BROWN'S LA
HARRISON'S LANE
Coun Offs
Mus
PO
TH
Pol Sta
F Sta
Liby
PW
A44

WOODSTOCK

Appendix E: Summary of Air Quality Objectives in England

Table E.2 – Air Quality Objectives in England

Pollutant	Air Quality Objective[4]	
	Concentration	Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

[4] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide
…	…

References

A Chipping Norton AQMA:

Connecting Oxfordshire: Local Transport Plan 2015-2031
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B Witney Area Transport Strategy:

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