2012 Air Quality Updating and Screening Assessment for Watford Borough Council

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

July 2012

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Executive Summary

This Updating and Screening Assessment looks at air quality monitoring data and other developments across the Borough, to see whether it is likely that national Air Quality Objectives will be breached.

Monitoring data from the real-time analysers located at the Town Hall show that concentrations of nitrogen dioxide and PM10 particles has remained fairly stable over recent years, and that there have been no exceedences of the objectives.

Overall, there has also been a slight decrease in the monthly average concentrations recorded by the nitrogen dioxide diffusion tubes located across the Borough. The are however some sites where concentrations are above the objective value:

- Pinner Road
- Balmoral Road
- Salisbury Road
- Chalk Hill
- Farraline Road

All of these sites are in existing Air Quality Management Areas, where steps are being taken to improve air quality, so overall monitoring suggest there is no need to progress to a Detailed Assessment

In addition, the Review and Assessment has not identified any new sources of emissions, so it is not proposed to move to a Detailed Assessment.

In the next year, following the conclusion of the Council's consultation on its Air Quality Action Plan, which aims to improve air quality in the Air Quality Management Areas, we will be considering the responses that we have received and beginning to implement its recommendations.

Also, again following a public consultation exercise will we be amending or revoking a number of our Air Quality Management Areas, as recommended by the recent Further Assessment. This will leave the following Air Quality Management Areas in Watford:

- AQMA 1 St Albans Road
- AQMA 2 Vicarage Road
- AQMA 3A Bushey Arches
- AQMA 5 A405/Horseshoe Lane

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1 Introduction

1.1 Description of Local Authority Area

Watford is a concentrated urban area situated to the North West of London, with a population of circa 86,000. It is a well established regional shopping centre with major rail and road communication links. It has both mainline and underground train stations, the M1 lies along the northern boundary of the borough and the M25 is situated to the west. The borough is also served by several major trunk roads, including the A41, A411, A412 and A405.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 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 exceedences are considered likely, the local authority must then 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.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM **in England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu g/m^3$ (milligrammes per cubic

metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 μg/m^3	Running annual mean	31.12.2003
	5.00 μg/m^3	Running annual mean	31.12.2010
1,3-Butadiene	2.25 μg/m^3	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 μg/m^3	Annual mean	31.12.2004
	0.25 μg/m^3	Annual mean	31.12.2008
Nitrogen dioxide	200 μg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 μg/m^3	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 μg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 μg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350 μg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 μg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 μg/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

1.4.1 First Round of Review & Assessment (December 2000)

The combined effect of the Stage 1 and 2 reports of the first round Review and Assessment suggested that a Stage 3 Review and Assessment was only needed for two pollutants: nitrogen dioxide (NO2) and particulate matter (PM10). Exceedences of the Air Quality Regulation objectives were predicted close to some major roads. A public exposure assessment was carried out, which concluded that there were no domestic properties within the areas of exceedence. Accordingly no Air Quality Management Areas (AQMA) were declared.

1.4.2 Updating and Screening Assessment (June 2003)

The assessment concluded that there was no need to progress to a Detailed Assessment for carbon monoxide, lead, benzene, 1,3-butadiene, or sulphur dioxide. It was, however, considered necessary to proceed to a Detailed Assessment for NO2 and PM10 as 23 locations required additional assessment before a decision could be made as to whether to declare one or more AQMAs.

1.4.3 Detailed Assessment (April 2004)

The study concluded that for NO2, there were likely to be six areas where the annual mean objective for nitrogen dioxide was unlikely to be met:

- Parts of St.Albans Road between Beechen Grove and North Western Avenue;
- Parts of Rickmansworth Road between the High Street and Cassio Road;
- Parts of Farraline Road close to its junction with Vicarage Road;
- Parts of Pinner Road close to its junction with Chalk Hill;
- Close to the junction of Horseshoe Lane, the A405 and St.Albans Road; and
- Parts of the Gossamers, Ravenscroft, Eastlea Avenue and Westlea Avenue.

In February 2006, six AQMAs were declared, encompassing the residential properties identified in Table 1.2.

Maps of the existing Air Quality Management Areas, as well as the proposed 2012 amendments are shown in Appendix B

Table 1.2 Summary of Watford AQMAs designated in February 2006

Watford AQMA no 1 St Albans Road	1B & 1C Wellington Road 155 – 157 St. Albans Road 211-215 St. Albans Road 164 – 454 St. Albans Road
Watford AQMA no 2 Vicarage Road	28A – 30A Vicarage Road (Flats above shops) 85A-87A Vicarage Road (Flats above shops)
Watford AQMA no 3 Aldenham Road	Residential Accommodation above The Railway Arms, Aldenham Road
Watford AQMA no 4 Chalk Hill	12 Chalk Hill
Watford AQMA no 5 A405 / Horseshoe Lane	3A – 5A Horseshoe Lane 887 St Albans Road 1026 St Albans Road
Watford AQMA no 6 M1 / Meriden	16, 17 & 18 Ravenscroft 1 – 5 The Gossamers 31 The Gossamers 63 – 65 The Gossamers 95 – 97 The Gossamers 62, 64, 69 Eastlea Avenue

1.4.4 Updating and Screening Assessment (July 2007)

The USA concluded that there was no need to progress to a Detailed Assessment for carbon monoxide, lead, benzene, 1,3-butadiene, sulphur dioxide or PM10. Monitoring data indicated the continuing need for the existing AQMAs, designated for NO2.

1.4.5 Progress Report (December 2008)

The 2008 Progress Report concluded that there was not a requirement to continue to a Detailed Assessment for any pollutant.

1.4.6 Further Assessment of AQMAs 1-6 (April 2009)

The Further Assessment of the six AQMAs recommended that AQMA 1 (St Albans Road) and AQMA 5 (A405/Horseshoe Lane) should be retained. AQMA 2 (Vicarage Road), AQMA 3 (Aldenham Road) and AQMA 4 (Chalk Hill) should be extended, and AQMA 6 (M1 Meriden) should be revoked. Maps showing the proposed amendments to the AQMAs is provided in Appendix C.

The recommendations of the Further Assessment were accepted by Defra in April 2009. In June 2012, the Council completed consultation on the Further Assessment, and as there have been no objections from residents and other interested parties, it

our intention take forward the recommendations and revoke , merge and enlarge the various AQMAs accordingly.

1.4.7 Combined Updating and Screening Assessment and Progress Report (June 2010)

This concluded that there were was no need to progress to a detailed assessment for any pollutant.

Annual mean NO2 concentrations recorded during 2009 using passive diffusion tubes exceeded the annual mean objective of 40 µg/m3 at some locations. These were either within existing Air Quality Management Area, or where there was no representative public exposure, so a Detailed Assessment was not required:

1.4.8 Air Quality Action Plan (April 2011)

In 2011 the Council completed the second draft of its Air Quality Action Plan that sets out how it aims to improve air quality within the Air Quality Management Areas. A consultation exercise was completed in June 2012 and as there were no objections to it, the Council proposes to take forward the suggested measures. The consultation exercise also resulted in some additional suggestions, made by residents, of measures to improve air quality and these will also be considered.

1.4.9 Progress Report (June 2011)

The 2011 Progress Report concluded that there was not a requirement to continue to a Detailed Assessment for any pollutant.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Since January 2008, the following analysers have been in operation at Watford Town Hall:

1. API M200E chemiluminescent NOX analyser from Envirotechnology; and
2. Rupprecht & Patashnick TEOM analyser, gathering PM10 data.

The monitoring station is classified as a Roadside monitoring site, and is situated approximately 10 metres from the kerb of Rickmansworth Road. Figure 2.1 shows the location of the monitoring station.

Until October 2011, data was collected via modem by the King's College London Environmental Research Group (ERG). Since October 2011, since has been collected by Air Quality Data Management (AQDM), where the data is also validated and reported. Real time data, as well as weekly month and annual reports are available from Herts & Beds Air Pollution Monitoring Network website; www.hertsbedsair.org.uk.

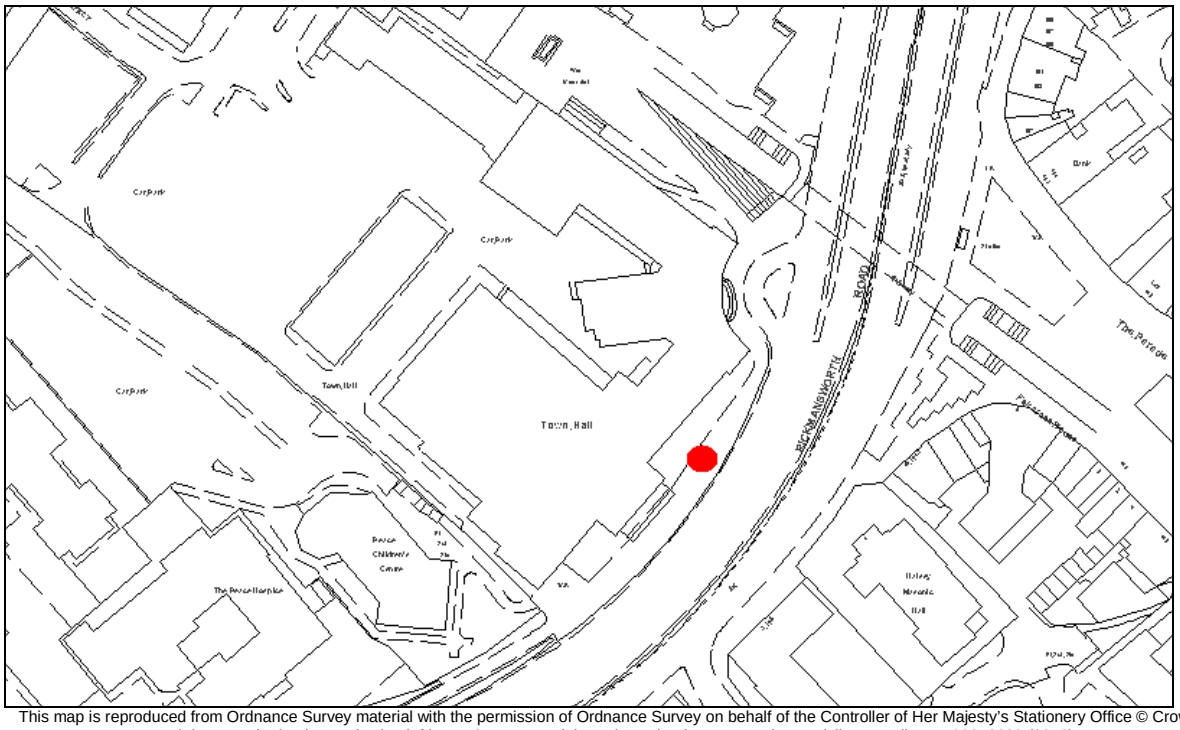
All servicing and maintenance (including periodic calibration of equipment) continues to be overseen by Kings College London. The equipment is audited annually by the National Physical Laboratory.

PM10 data collected using the TEOM instrument is converted by AQDM to reference equivalence using the volatile correction method (VCM).

Table 2.1 Details of Automatic Monitoring Sites

Site Name	OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure?	Distance to kerb of nearest road	Worst-case Location?
Watford Town Hall	X 510540 Y 196780	NO_2, PM_{10}	N	N	10m	Y

Figure 2.1 Location of Watford Town Hall automatic monitoring station



2.1.2 Non-Automatic Monitoring Sites

Until January 2012, passive monitoring of nitrogen dioxide was undertaken using diffusion tubes around at 17 locations within the Borough. In January 2012, monitoring ceased at 2 sites (Westland Road and High Road, Leavesden) as they were consistently recording results below the annual average objective. Monitoring at a new site on Willow Lane started in January 2012. Results from the Willow Lane site will be considered in the 2013 progress report.

Site details are shown in Table 2.2, and their approximate location is shown in Figure 2.2.

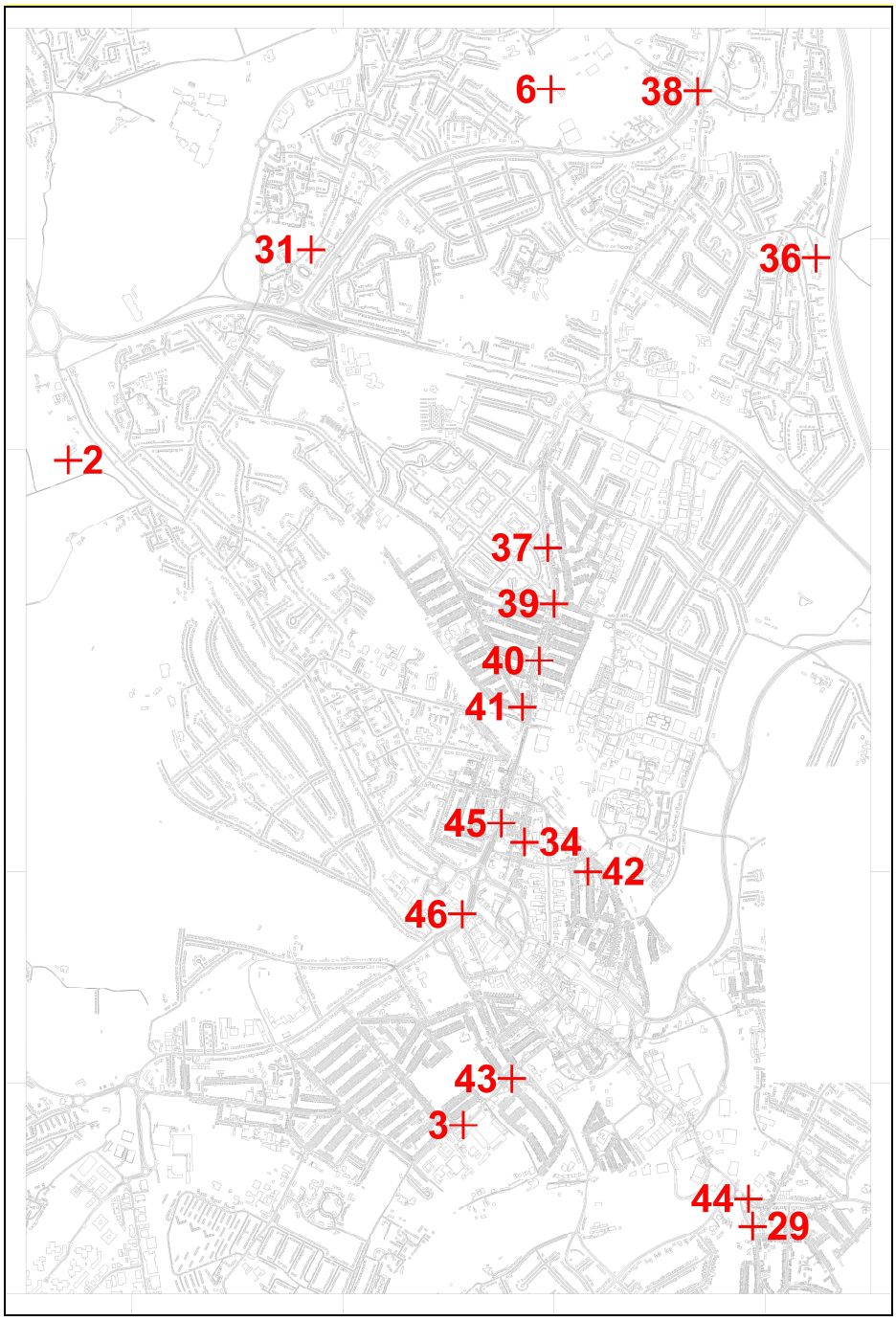
Table 2.2 Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure?	Distance to kerb of nearest road	Does this location represent worst-case exposure?
WF02	Grove Pumping Station	B	508700	198950	NO_2	N	N	N	N/A	N
WF03	Hospital	K	510570	195800	NO_2	N	N	N	4m	Y
WF06	Woodside Playing Fields	B	510985	200710	NO_2	N	N	N	N/A	N
WF29	Pinner Road	K	511940	195320	NO_2	Y	N	Y – 6m	2m	Y
WF31	High Road Leavesden	I	509850	199950	NO_2	N	N	Y – 10m	1m	N
WF34	Westland Road	B	510860	197140	NO_2	N	N	Y – 2m	1m	N
WF36	Ravenscroft	I	512240	199910	NO_2	N	N	Y – 8m	N/A	Y
WF37	358, St. Albans	K	510970	198535	NO_2	Y	N	Y – 5m	1m	Y

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure?	Distance to kerb of nearest road	Does this location represent worst-case exposure?
	Road									
WF38	Horseshoe Lane	K	511680	200700	NO_2	Y	N	Y – 2m	4m	Y
WF39	Balmoral Road	K	511000	198270	NO_2	Y	N	N	1m	Y
WF40	Salisbury Road	K	510930	198000	NO_2	Y	N	N	2m	Y
WF41	Leavesden Road	K	510850	197780	NO_2	Y	N	N	1m	Y
WF42	Queens Road	K	511160	197000	NO_2	N	N	Y – 4m	1m	Y
WF43	Farraline Road	K	510800	196020	NO_2	Y	N	Y – 4m	2m	Y
WF44	Chalk Hill	K	511920	195450	NO_2	Y	N	Y – 6m	2m	Y
WF45	Wellington Road	K	510750	197230	NO_2	Y	N	Y-10m	4m	Y
WF46	Town Hall	R	510565	196800	NO_2	N	Y	N	6m	Y

Note: B = background; K = kerbside; I = intermediate; R = roadside.

Figure 2.2 Location of Watford Borough Council NO_2 diffusion tube monitoring network



Tubes are supplied and analysed by Environmental Scientifics Group (ESG) Didcot, formerly Harwell Scientific Services, a UKAS accredited laboratory. The tubes are prepared using 50% TEA (triethanolamine) in acetone.

The ESG laboratory participates in the field intercomparison scheme and the Workplace Analysis Scheme for Proficiency (WASP) programme, operated by the

Health and Safety Laboratory (HSL). For the period presented, ESG / Harwell Scientific demonstrated 'good' performance in the WASP scheme for analysis of NO2 diffusion tubes. Results and bias corrections factors can be seen at: http://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html

This reports that for ESG/ Harwell:

- In 2011, 29 of the 33 collocation studies were considered to be good precision
- In 2010, 18 of the 20 collocation studies were considered to be good precision
- In 2009, 15 of the 19 collocation studies were considered to be good precision;
- In 2008, all of the 14 collocation studies were considered to be good precision;
- In 2007, 17 of the 18 collocation studies were considered to be good precision.

Unadjusted monthly diffusion tube data can be downloaded from http://www.hertsbedsair.org.uk/hertsbeds/asp/DiffusionTubes.asp?dt=.

The bias correction factors used are shown in Table 2.3, and the national spreadsheet can be found at: http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

Table 2.3 Table of nitrogen dioxide diffusion tube bias correction factors

Year	Bias Correction Factor	Source
2007	0.82	From national spreadsheet
2008	0.74	Local study
2009	0.91	Local study
2010	0.86	From national spreadsheet
2011	0.83	From national spreadsheet

2.2 Comparison of Monitoring Results with AQ Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

The annual mean NO2 concentrations recorded by the continuous analyser at Watford Town Hall for the period 2009-11 are presented in Table 2.4a. The annual mean objective of 40 µg/m3 has not been exceeded during this time period, though it is not well below the objective.

Table 2.4a Results of Automatic Monitoring of Nitrogen Dioxide: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Period of monitoring	Valid Data Capture 2011	Annual Mean Concentration µg/m^3		
					2009	2010	2011
Watford Town Hall	Roadside	N	Full year	98.3%	39	39	39

Note: Data capture has been above 90% for all three of these years

Table 2.4b shows that there have been no exceedences of the NO2 hourly mean objective of 200 µg/m3 at the Watford Town Hall site.

Table 2.4b Results of Automatic Monitoring for NO_2: Comparison with 1-hour Mean Objective

Site ID	Site Type	Within AQMA?	Period of monitoring	Data Capture 2011 %	Number of Exceedences of hourly mean (200 µg/m3)		
					2009	2010	2011
Watford Town Hall	Roadside	N	Full year	98.3%	0	0	0

Note: Data capture has been above 90% for all three of these years

Diffusion Tube Monitoring Data

Table 2.5 shows the results of the diffusion tube monitoring in 2011.There are no triplicate tubes, and as results exist for at least 9 months, data has not had to be annualised. There are no distance corrections. The choice of bias correction factors is described in section 2.1.2

Table 2.5 Results of nitrogen dioxide diffusion tube monitoring in 2011

Site ID	Location	Site Type	Within AQMA?	Data Capture 2011	Annual mean concentration (Bias Adjustment factor = 0.83) 2011 (μg/m^3)
WF02	Grove Pumping Station	B	N	11 months	18
WF03	Hospital	K	N	12 months	38
WF06	Woodside Playing Fields	B	N	12 months	22
WF29	Pinner Road	K	Y	12 months	**52**
WF31	High Road Leavesden	I	N	12 months	31
WF34	Westland Road	B	N	12 months	29
WF36	Ravenscroft	I	N	12 months	30
WF37	358, St. Albans Road	K	Y	12 months	36
WF38	Horseshoe Lane	K	Y	12 months	38
WF39	Balmoral Road	K	Y	12 months	**45**
WF40	Salisbury Road	K	Y	12 months	**41**
WF41	Leavesden Road	K	Y	11 months	33
WF42	Queens Road	K	N	11 months	33
WF43	Farraline Road	K	Y	11 months	**48**
WF44	Chalk Hill	K	Y	11 months	**83**
WF45	Wellington Road	K	Y	11 months	36
WF46	Town Hall	R	N	11 months	37

Note: B = background; K = kerbside; I = intermediate; R = roadside.

Table 2.6 shows nitrogen dioxide diffusion tube monitoring results for 2007- 2011.

The choice of bias correction factors is described in section 2.1.2

Table 2.6 Results of Nitrogen Dioxide Diffusion Tubes (2007 to 2011)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 0.82)	2008* (Bias Adjustment Factor = 0.74)	2009* (Bias Adjustment Factor = 0.91)	2010* (Bias Adjustment Factor = 0.86)	2011 (Bias Adjustment Factor = 0.83)
WF02	Grove Pumping Station	N	22	19	21	22	18
WF03	Hospital, Vicarage Road	N	40	**42**	**48**	**44**	38
WF06	Woodside Leisure Centre	N	26	24	30	27	22
WF29	Pinner Road	Y	**61**	**53**	**67**	**62**	**52**
WF31	High Road Leavesden	N	38	30	38	37	31
WF34	Westland Road	N	39	35	38	37	29
WF36	Ravenscroft	N	32	29	35	34	30
WF37	St Albans Road 2	Y	**43**	**40**	**49**	**46**	36
WF38	A405 Horseshoe Lane	Y	**42**	**40**	**49**	**45**	38
WF39	Balmoral Road	Y	**50**	**45**	**53**	**51**	**45**
WF40	Salisbury Road	Y	**45**	**41**	**45**	**48**	**41**
WF41	Leavesden Road	Y	38	33	**42**	40	33
WF42	Queens Road	N	**41**	35	**43**	39	33

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 0.82)	2008* (Bias Adjustment Factor = 0.74)	2009* (Bias Adjustment Factor = 0.91)	2010* (Bias Adjustment Factor = 0.86)	2011 (Bias Adjustment Factor = 0.83)
WF43	Farraline Road	Y	**54**	**49**	**60**	**58**	**48**
WF44	Chalk Hill	Y	**105**	**91**	**98**	**91**	**83**
WF45	Wellington Road	Y	**41**	34	**49**	**42**	36
WF46	Town Hall collocation	N	-	33	39	39	37

Note: Bias adjusted annual means in excess of the 40 µg/m^3 NO_2 objective are shaded grey.

There are no sites that have show a higher concentration in 2011 compared with 2010. Indeed on the whole it appears that across all sites concentrations have shown a gradual decline in the last three years. There are three sites where concentrations are above the 40 µg/m^3 annual average objective are as follows:

- Pinner Road
- Balmoral Road
- Salisbury Road
- Chalk Hill
- Farraline Road

All of these sites are in existing Air Quality Management Areas, where steps are being taken to improve air quality, so there is no need to progress to a Detailed Assessment.

It is also important to consider any concentrations above of 60 µg/m^3 as these indicate a risk that the 1-hour objective may also be exceeded. In Watford, there is one location where this is the case, Chalk Hill, but as this is an existing Air Quality Management Area these is no need to progress to a Detailed Assessment.

Concentrations at Westland Road and High Road, Leavesden have been consistently lower than the annual average objective for a number of years, so monitoring at these locations ceased at the end of December 2011.

In January 2012, diffusion tube monitoring started at a site on Willow Lane in response to concerns about queuing traffic outside a resident's home. At the time of writing this report, the 4 months data that has been received suggests that concentrations will be below the annual average objective. A full assessment will be carried out as part of the 2013 Progress Report.

2.2.2 PM_{10}

Table 2.7 shows the results of the continuous PM10 monitoring and comparison with the Annual Mean Objective. Data has been corrected to gravimetric using the Volatile Correction Model

Table 2.7 Results of Automatic Monitoring of PM_{10}: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture 2011	Gravimetric Equivalent	Annual Mean Concentration µg/m^3				
					2007	2008	2009	2010	2011
Watford Town Hall	Roadside	N	98.8%	Y	23	21	22	24	19

Table 2.8 shows the results of the continuous PM10 monitoring and comparison with the Annual Mean Objective. Data has been corrected to gravimetric using the Volatile Correction Model.

Table 2.8 Results of Automatic Monitoring for PM_{10}: Comparison with 24-hour mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture 2011	Gravimetric Equivalent	Number of Exceedences of 24-Hour Mean (50 µg/m^3)				
					2007	2008	2009	2010	2011
Watford Town Hall	Roadside	N	98.8%	Y	20	9	0	19	7

The annual mean PM10 concentration recorded at Watford Town Hall has been well below the objective of 40 µg/m3 for the period 2007-11. The number of exceedences of the 24-hour mean objective of 50 µg/m3 is well within the permitted 35 exceedences per year for the period 2007-11.

2.2.3 Summary of Compliance with AQS Objectives

Watford Borough Council has examined the results from monitoring in the borough>. Concentrations outside of the AQMA are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Watford Borough Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

Watford Borough Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

3.3 Roads with a High Flow of Buses and/or HGVs.

Watford Borough Council confirms that there are no new/newly identified roads with high flows of buses/HGVs.

3.4 Junctions

Watford Borough Council confirms that there are no new/newly identified busy junctions/busy roads.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

There are two new roads proposed for Watford, both aimed to reduce congestion:

1. **Penn Road**

This will link St.Albans Road and the nearby Imperial Way / Colonial Way industrial Estate, thereby improving access to the Industrial Estate and Watford Junction Station, and relieving congestion along St.Albans Road.

The Council's Air Quality Action Plan identifies the construction of this road as one of the measures that will improve air quality in AQMA 1.

At this stage no construction date has been set.

2. The Health Campus Link road

This is designed to provide better access to Watford's proposed Health Campus, which will contain Watford Football Club, a new hospital, some residential accommodation and some commercial units.

The Environmental Impact Assessment that accompanied the proposals for the Health Campus and the new road contained a consideration of its impact on air quality impact. At this stage it is believed that it will improve air quality around the Vicarage Road and Bushey Arches AQMAs. Indeed, the Council's Air Quality Action Plan identifies the construction of this road as one of the measures that will improve air quality at these two locations.

Construction is expected to start in 2013 or 2014, and its effect will be assessed in a subsequent Review and Assessment.

Watford Borough Council has assessed new/proposed roads meeting the criteria in Section A.5 of Box 5.3 in TG(09), and concluded that it will not be necessary to proceed to a Detailed Assessment.

3.6 Roads with Significantly Changed Traffic Flows

Watford Borough Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Watford Borough Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Watford Borough Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

Watford Borough Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.2 Moving Trains

Watford Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

4.3 Ports (Shipping)

Watford Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been carried out

Watford Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

Watford Borough Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Watford Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.2 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

5.3 Petrol Stations

Watford Borough Council confirms that there are no petrol stations meeting the specified criteria**.**

5.4 Poultry Farms

Watford Borough Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

There are currently two biomass installations in Watford:

1. West Herts Collage, Hempstead Road
2. Rainbow House, Water Lane.

Both of these were assessed against Section D.1a of chapter 5, TG(09) prior to construction. It was ensured that stack height and efflux velocity were sufficient to ensure adequate dispersal of pollutants.

In addition, these installations were considered in previous Review and Assessments and Progress reports, so they do not need to be considered again.

Watford Borough Council has assessed the biomass combustion plant, and concluded that it will not be necessary to proceed to a Detailed Assessment.

6.2 Biomass Combustion – Combined Impacts

There are no single 500 x 500 m squares in Watford that contain more than one biomass installation. It is therefore felt not necessary to consider cumulative effects as per Table D.1b of Defra's Technical Guidance LAQM.TG(09), and that previous assessments single assessments detailed in section 6.1 are sufficient to demonstrate that progression to a Detailed Assessment is not necessary.

Watford Borough Council has assessed the biomass combustion plant, and concluded that it will not be necessary to proceed to a Detailed Assessment.

6.3 Domestic Solid-Fuel Burning

All of the Borough of Watford is covered by a number of Smoke Control Orders. Domestic Solid Fuel burning is there fore strictly controlled and there are unlikely to be any significant emissions.

Watford Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

There are no locations in the Borough like to give rise to fugitive or uncontrolled sources that have not been addressed in previous rounds of Review and Assessment.

Watford Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

Continuous monitoring results from analysers based at the Town Hall shows concentration of nitrogen dioxide and PM10 particles to be fairly stable, and that national objectives are unlikely to be breached.

Results from nitrogen dioxide diffusion tube monitoring across the Borough suggests that on the whole concentrations are declining slightly. However there are still a number of sites where concentrations suggest that the annual objective may be exceeded, but these are all in existing Air Quality Management Areas so there is no need to progress to a Detailed Assessment. In addition there is one site where the concentration suggests that the 1-hourly objective may also be exceeded. Again, this is within an existing Air Quality Management Area, so no Detailed Assessment is required.

8.2 Conclusions from Assessment of Sources

The Review and Assessment has not identified any new sources of emissions, so it is not proposed to move to a Detailed Assessment.

8.3 Proposed Actions

It is not proposed to move to a Detailed Assessment, so the next report to be submitted will be the 2013 Progress Report.

In addition, we will be concentrating on the following tasks:

1. Following the Council's consultation on its Air Quality Action Plan, which ended on 30th June 2012, we will consider the responses that we have received and begin to implement the measures that it suggests might improve air quality.

2. Following consultation on our proposals to amend and revoke some of our Air Quality Management Areas, we will be following the legal process to formally make the changes.

3. Following the start of diffusion tube monitoring at a new site on Willow Lane in January (as discussed in section 2.2.1) we will be looking closely at results when they are received.

4. As the Council's Core Planning Strategy is currently in the process of being rewritten, we will be making sure that the associated air quality polices are robust and up to date.

5. We will be working with the Planning Department to make sure that controls are in place to deal with any biomass installation applications that are received.

9 References

- First Round of Review & Assessment (December 2000)
- Updating and Screening Assessment (June 2003)
- Detailed Assessment (April 2004)
- Updating and Screening Assessment (July 2007)
- Progress Report (December 2008)
- Further Assessment of AQMAs 1-6 (April 2009)
- Combined Updating and Screening Assessment and Progress Report (June 2010)
- Air Quality Action Plan (April 2011)
- Progress Report (June 2011)
- Local Air Quality Management, DEFRA Technical Guidance LAQM.TG (09)
- Bias Adjustment Factors Spreadsheet, DEFRA spreadsheet.