The Royal Borough of Windsor & Maidenhead

Air Quality Action Plan

(Progress Report - July 2009)

The Royal Borough
Windsor & Maidenhead
planning & environment

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1. INTRODUCTION

Part IV of the Environment Act 1995 places a statutory duty on local authorities (LA) to periodically review and assess air quality. This process, known as Local Air Quality Management (LAQM) involves the monitoring and the assessment of current and future air quality. Where any potential exceedences of the National Air Quality Objectives (AQO) are identified then the LA has a statutory duty to designate the area as an air quality management area (AQMA) and to prepare an air quality action plan (AQAP) to attain air quality standard as set in the Air Quality Regulation 2000 and (amendment) Regulation 2002.

From council's air quality review in 2004 it appeared that the nitrogen dioxide (NO_2) annual mean air quality standard was likely to be exceeded within the relevant period. The RBWM in 2005 designated (by order) two AQMAs, one in Windsor and one in Maidenhead.

Road traffic emissions are generally responsible for the declaration of the AQMAs. Following the designation of the areas The RBWM prepared an Air Quality Action Plan (AQAP integral of the council's Local Transport Plan 2 (LTP2). The AQAP was submitted to DEFRA in March 2006 and approved in December 2006 by Department for Transport (DfT) and Department for Environment, Food and Rural Affairs (DEFRA).

Under sec 83 an order may, as a result of a subsequent air quality review, be varied by a subsequent order. Following the council's air quality review in 2008 the designated areas have now been extended and a new AQMA has been declared at the junction A308/B3028 near M4.

Following the declaration of these new areas The RBWM is reviewing the AQAPs with the aim to deliver a more focused approach in targeting the hotspot areas. An initial analysis of possible and effective options to improve traffic flow and reduce the number of journeys within the AQMAs was included in the declaration process for the new areas, Appendix A2.

This Progress Report is prepared to fulfill DEFRA requirement on reporting on the implementation and review of air quality measures. LTP annual progress reports to DfT are no longer needed and reporting separately from the LTP reports is statutorily required.

RBWM review and assessments & declaration of AQMAs

Air Quality Review & Assessment	**Outcome**
Detailed Assessment (August 2004)	Exceedences of NO_2 annual mean, need to declare two AQMAs.
	AQMA Orders (April 2005)
Further Assessment (December 2005, revised Mar 06)	Exceedences of NO_2 annual mean, confirmed findings of DA, AQAPs to be prepared.
Annual Progress Report (April 2007)	Identified new hotspots outside the AQMAs where the NO_2 annual mean is likely to be exceeded.
Detailed Assessment (November 2008)	Exceedences of NO_2 annual mean, need to declare a third AQMA and extend the existing.
	AQMA Orders (July 2009)
Due: Further Assessment Apr 2010 Detailed Assessment Apr 2010 (M25)	

2. IMPACT OF TRANSPORT AND EMISSION REDUCTION

In urban areas and along busy roads vehicle emissions are generally responsible for the declaration of AQMAs. In The RBWM road traffic emissions of NO_2 within the AQMAs account for almost 40% of its total ambient concentration and 60% is attributable to background concentrations. ENTEC Further Assessment (FA) in 2006 provides an indication of road traffic emission reductions required to meet the NO_2 annual mean objective for both Windsor and Maidenhead. However, concentrations are lower in Windsor than Maidenhead. The current NO_2 estimated background concentrations (1 km2 grid) across the whole Borough vary between 14 – 33 µg/m3 (National Air Quality Archive)

FA 2005 - Windsor and Maidenhead emission reductions

The reduction required as estimated in the FA 05 for both areas was of approximately of 12 µg/m^3. A subsequent review of the FA indicates that the total monitored concentration in the Windsor AQMA is actually lower than 52 µg/m^3, since then and a lower background concentration has also been observed.

Total NO_2 monitored concentration	NO_2 annual mean objective	NO_2 required emission reduction
52 µg/m^3	40 µg/m^3	12 µg/m^3

Entec assumed that the contribution of road traffic to total ambient concentrations was of 20 µg/m^3, therefore a 12 µg/m^3 reduction equated to a 60% reduction of local road traffic.

2008 Maidenhead

The reduction required in Maidenhead expressed as annual mean is 14 µg/m3.

Total NO_2 monitored concentration 2008	NO_2 annual mean objective	NO_2 required emission reduction
54 µg/m^3	40 µg/m^3	14 µg/m^3

Assuming that the background concentration in Maidenhead AQMA is of 32 µg/m3 then the contribution of local road traffic to the total ambient concentrations is of 22 µg/m3 therefore a 14 µg/m3 reduction equates to a 64% reduction of road traffic within the AQMA and at peak times. Note: as background concentration increases so does the percentage reduction of local traffic (with a background of 34 µg/m3 the calculate reduction would be of 70%).

2008 Windsor

The reduction required in Windsor expressed as annual mean is 5 µg/m3.

Total NO_2 monitored concentration 2008	NO_2 annual mean objective	NO_2 required emission reduction
45 µg/m^3	40 µg/m^3	5 µg/m^3

Assuming that the background concentration in Windsor AQMA is of 25 µg/m3 then the contribution of local road traffic to the total ambient concentrations is of 20 µg/m3 therefore a 5 µg/m3 reduction equates to a 25% reduction of road traffic within the AQMA and at peak times.

Monitored data show that NO_2 concentrations in The RBWM are strongly dependant on background concentrations and pollution episodes. This is attributable to the geographical position of the RBWM and its vicinity to London, Heathrow and congested motorways.

3. AIR QUALITY MANAGEMENT – LTP PROGRESS

Air Quality is an integrated part of the LTP process and the AQAPs are linked to its objectives.. Through the LTP2 process we have been working on delivering initiatives that contribute to achieving the NO2 annual mean NAQO.

The following Key Air Quality Management Strategy Themes were adopted as part of the LTP2:

- Mobility Management
- Network Management
- Improving Sustainable Travel Options
- Demand Management
- Vehicle Emissions Testing
- New Technologies
- Waste Management

Examples of initiatives within the above Strategy Themes that are being progressed to "make a difference" include:

- School Travel Plans (48 no.)
- Active Work Place Travel Plans (16 no.)
- Walk to School initiatives (7,900 pupils) + 27 schools taking part in the School Travel Reward Scheme (STaRS).
- Speed indicator devises at various locations
- Supported Bus Services (9 no.)
- Rail Partnership discussions (First Great Western and South West
- Trains)
- Congestion will be quantified and assessed by the borough-wide traffic model currently being developed

All of these initiatives are designed to have a high impact in terms of reducing car journeys within congested areas of the town centres and other parts of the borough where congestion has been identified i.e., the two Air Quality Management Areas.
Although we are currently on track to meet our targets in 2010/11 more focus is needed on reducing emissions within the AQMAs. The declaration of new areas represents an opportunity to review and renew our effort towards meeting the AQOs.

3. AQAP MEASURES

In planning and implementing the AQAPs within the Local Transport Plan we aimed at managing short-term episodes of high emission levels deriving from high traffic volume at peak time, and improving traffic flow at junctions.

The Local Transport Plan is the main tool locally for ensuring air quality. Improving air quality is one of the shared priorities for transport agreed by Government and the Local Government Association.

The LTP aims to improve air quality across the Borough by: improving sustainable travel options; improving management of the highway network; introducing mobility management measures (such as real-time information); and introducing limited demand management measures such as parking controls in congested areas.

Following the appraisal of various strategy options, a preferred strategy option was identified. Most of the measures included in the action plan have been drawn from the preferred strategy option.
The LTP2 identified the baseline situation with regard to air quality within the two AQMAs, set future targets, identified measures to address transport related pollution and set out to quantify the impact of the proposed measures.

An update on progress made for each measure is given in Appendix A, the table format follows that recommended by DEFRA in the LAQM TG 09.

An outline of funded projects and proposed measures discussed during the declaration of the new areas are given in Appendix A2.

Appendix A1 - Air Quality Action Plan Progress Report 2009

No	Measure - Focus	Lead authority	Planning Phase	Implementation Phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in the last 12 month	Estimated completion date	Comments relating to target emission reductions
MOBILITY MANAGEMENT – SUMMARY FROM ACTION PLAN							**PROGRESS REPORT 2009**			
1	**Awareness Campaigns** - Organise public events to increase knowledge and understanding of AQ issues.	RBWM: Environmental Services	2006	2006 -2011	attendance	N/A	Two events per year. Exploring the possibility of involving pupils in AQ monitoring to raise awareness among parents	Last event held in Mar 08	ongoing	
2	**Education Programmes** – 1. Road safety and cycle training with primary schools. 2. Deployment of Speed Indicator Device (SID) 3. Learning for Sustainability (LfS) programme	RBWM: Environmental Services / Learning and Care	2006	2006 -2011	The 15% reduction in car journeys Monitored via survey 500 year 6 pupils pa targeted	3%	1. Cycling training targets met for last 4 years. 2. Between 6 and 8 SID units deployed at sites across the Borough each day. 3. Working with LfS, one seminar and joint advertising campaign.		ongoing	The 15% reduction in car journeys To deliver a 3% reduction within AQMAs in combination with measure 3, 9, 11 and 13
3	**Travel information & advice** - Providing information on available travel options.	RBWM, Highways Agency, Operators, Other service providers.	2006	2006-07	See measure 2 Number of local bus passenger journeys originating in the authority area undertaken each year	3%	1. Real-Time Passenger Information (RTPI) launched in Maidenhead in 2006/07, serving routes 6/6A and 7A/7B. RTPI includes web-based facility and SMS messaging service. 2. The Council produces timetable leaflets for the Borough Bus network of services as well as at-stop displays for key locations. 3. New contracts for Borough Bus services will place greater responsibility on operators for timetable		ongoing	

No	Measure - Focus	Lead authority	Planning Phase	Implementation Phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in the last 12 month	Estimated completion date	Comments relating to target emission reductions
							provision. 4. Produced E Berkshire Transport guide in association with neighbouring LAs. 5. Updated Cycling in Windsor and Maidenhead leaflet. 6. Produced Jubilee River and Slough Linear Park cycle route leaflet in conjunction with Sustrans and Slough Borough Council.			
4	**Travel Plans** - Promote and monitor all other travel plans, workplace, hospital and schools. Proactively request Travel Plans through Planning process. Produce guidance for all Travel Plans on the web.	RBWM, Schools, Hospitals, Businesses.	2007-08	2009-10	Achieve 100% of Schools with Travel Plans by 2010. RBWM By 2013 **no** more than 63% of staff Shall drive to work	5%	1. 40% of schools (33) had School Travel Plans by end of 2007/08. 2. Travel plans are requested where appropriate as part of planning process through S106 Agreements. 3. Interim / final travel plans submitted as part of S106 Agreements include: - Ascot Racecourse - Centrica - Computer Associates - E Berkshire College - King Edward Court - Old Bank House Windsor	The Council is progress its own travel plan to act as an exemplar.	ongoing	15% reduction in car driver trips three years Combining all travel plans a 5% emission reduction within AQMAs should be achievable
5	**Lift sharing -** To develop an area-wide lift-sharing. Establishing self-contained	RBWM Neighbouring LA,					No Progress to date, part of measure 4			

No	Measure - Focus	Lead authority	Planning Phase	Implementation Phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in the last 12 month	Estimated completion date	Comments relating to target emission reductions
	lift-sharing schemes.	Businesses, Schools								
6	**E-services** - Providing on line services to reduce the need to travel	RBWM, Businesses	2006	2007-11	See measure 2		From January 2007 following services include: 1. Applications library membership, school admissions, planning applications, parking permits; 2. Payments - Council invoices, Council tax, business rates, parking fines, housing benefit repayment 3. Reporting - Council complaints, highway maintenance, pollution, abandoned vehicles, rights of way, benefit fraud		ongoing	
7	**Ticketing solutions** - Promoting public transport	RBWM, Operators, Tourist/leisure attractions	2006	2007-11			Working with First Great Western and South West Trains to extend and simplify combined ticketing solutions. Scheme already in place for Legoland		ongoing	
NETWORK MANAGEMENT – SUMMARY FROM ACTION PLAN							**PROGRESS REPORT 2009**			
8	**Urban traffic control** - Updating and extending the current UTC♦, in conjunction with better traffic surveys.	RBWM	2008-09	2010	Average journey time	3 %	Building up funds and undertaking of borough wide traffic model	Traffic model: survey and modelling	Dec 09	When complete model will be used to calculate emission

♦ Urban Traffic Control

No	Measure - Focus	Lead authority	Planning Phase	Implementation Phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in the last 12 month	Estimated completion date	Comments relating to target emission reductions
										reduction
9	**Bus / cycle priority** - Introducing priority measures. Promote and prioritise schemes through capital programme and LTP objectives	RBWM	2006	2006-11	Seen measure 2 Bus and cycle trips	3%	New cycle parking in Maidenhead town centre & Rail Station	A4 cycle route: Oldfield Moorbridge - Forlease/ Moorbridge Advanced Stop Line		In conjunction with measure 2, 11 and 13
10	**Junction Improvements** - Modifying the layout of junctions experiencing chronic congestion	RBWM	2006	2007-08	Average journey time	See n 8	Maidenhead improvements: Market Street / High St. at Castle Hill, All Saints Avenue and Bath Rd. Windsor: A308 Maidenhead Rd, Parsonage Lane, and Imperial Way.	Traffic model to identify and assess further improvements	ongoing	See n 8
11	**Safer routes to schools** - Identify priorities through School Travel Plans and prioritise through capital projects working group	RBWM:	2006	2006-11	Seen measure 2 Number of safer routes	3%	Currently working on 10 Safer Routes to School schemes across the Borough to address barriers to walking and cycling to school. Capital bid for doubling of expenditure in 2009/10		ongoing	
12	**Parking enforcement** - Decriminalised parking enforcement	RBWM	2007-08	2008-09			DPE introduced January 2008. Compliance with the parking restrictions is currently running at approximately 90%. Recent surveys show a 27% increase in the number of compliant vehicles in the Maidenhead area.		ongoing	

No	Measure - Focus	Lead authority	Planning Phase	Implementation Phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in the last 12 month	Estimated completion date	Comments relating to target emission reductions
IMPROVING SUSTAINABLE TRAVEL OPTIONS– SUMMARY FROM ACTION PLAN							**PROGRESS REPORT 2009**			
13	**Pedestrian / Cycling Facilities** - New/improved routes & crossing facilities	RBWM	2006	2006-11	Seen measure 2 Cycling surveys		Maidenhead: Toucan crossing at St Marks' Rd / Grenfell Rd junction Lobbying for parking enforcement on zig-zag markings.	New routes ????	2011	Borough wide scheme – % target reduction low
14	**Supported bus services** - Providing financial support to local bus services	RBWM Operators	2006	2006-11			Process of tendering for Maidenhead network of services underway including analysis of information.		ongoing	See n 16
15	**Public transport infrastructure Improvements** - Enhance accessibility and attractiveness of public transport and priority bus routes	RBWM	2006	2006-11	Reduced traffic volume along A308		Prioritised programme of bus stop improvements identified as part of Maidenhead Bus Study (2008). Priority bus routes programme	Discussions to integrate measures with Crossrail project	ongoing	Maidenhead scheme – – % target reduction low
16	**Quality bus partnership** - Develop high quality, cross boundary bus services	RBWM, Neighbouring LA, Operators	2006	2006-11	Bus users survey		Strategic bus and coach network and Regional Transport Fund project of which £64m allocated.			Borough wide – % target reduction low
17	**Park & Ride** - Exploring opportunities for park and ride	RBWM, Neighbouring LA, Highways Agency, DfT Rail, Operators					No progress to date			
18	**Inter-urban coach services**	RBWM					Working with SEERA,			

No	Measure - Focus	Lead authority	Planning Phase	Implementation Phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in the last 12 month	Estimated completion date	Comments relating to target emission reductions
	To reduce the number of inter-urban car trips	Neighbouring LA, Highways Agency Operators					Buckinghamshire County Council to move up South East Plan priority for spend. Scheme has SEERA/DfT approval, working jointly with authroities to progress along with seconded DfT Project Manager leading the project.			
19	**Rail partnerships** - Working in partnership with First Great Western (FGW) and South West Trains (SWT).	RBWM: Environment & Planning Neighbouring local authorities DfT Rail Operators					Ongoing discussion with FGW and SWT. Meeting with councillors and Train Operating Companies held with regular future meetings proposed to address key issues.			
DEMAND MANAGEMENT – SUMMARY FROM ACTION PLAN							**PROGRESS REPORT 2009**			
20	**Parking standards** - Imposing strict maximum parking standards for new development as identified in the Borough's Parking Strategy.	RBWM: Environment & Planning		2006-11			Use of Sec 106 and travel plans are in place.	Practice Note on Parking Standards being prepared.	2009	
21	**Public parking regimes** - Setting parking charges and permitted length of stay.	RBWM: Environment & Planning	2006	2007-08			Stating parking charges and permitted length of stay in public car parks in town centre locations to favour short-stay parking for shoppers and visitors and encourage us of		2008	

No	Measure - Focus	Lead authority	Planning Phase	Implementation Phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in the last 12 month	Estimated completion date	Comments relating to target emission reductions
							public transport.			
VEHICLES EMISSIONS TESTING – SUMMARY FROM ACTION PLAN							**PROGRESS REPORT 2009**			
22	**Council own fleet and contractors** – To reduce NO2 and PM10 emission under NI195.				Low	Med	Reduce emissions under NI195.	NI195 submitted to DEFRA	ongoing	L tar red
23	**VOSA** – Roadside emission Testing (not for NO2)	RBWM VOSA	2007	2008 - 2010	To reduce % of vehicles with poor emission standards	N/A	No Progress to date		Will not be implemented	
NEW TECHNOLOGIES – SUMMARY FROM ACTION PLAN										
24	**New schemes and trails** - Participating in/support schemes to reduce vehicles emissions.	RBWM	2006/07		Reduction of NOx ambient concentration	N/A	No Progress made			
25	Hybrid vehicles and hydrogen fuelled - vehicles Promoting, where possible, the use of less and non polluting vehicles	RBWM: Environment & Planning			N/A	N/A				
AIR QUALITY AND ROAD TRAFFIC MONITORING – SUMMARY FROM ACTION PLAN							**PROGRESS REPORT 2009**			
30	**NO_2 Maintaining - two monitoring stations** - EP calibrates the stations	RBWM TRL	2005	ongoing	N/A	N/A	Use of AQ grant to install 3 new NO_2 monitoring stations within the new areas	Contract to do 3 or 6 month	Sep-Oct 2009	

No	Measure - Focus	Lead authority	Planning Phase	Implementation Phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in the last 12 month	Estimated completion date	Comments relating to target emission reductions
	fortnightly, liaise with ERG and attends the stations when needed.						declared in July 09	monitoring assigned to TRL		
31	**Diffusion tubes Network** NO_2 - Network of 25 passive diffusion tubes.	RBWM	2005	ongoing	N/A	N/A	Network revised in 2006, new hotspots found, current number of sites 26	A second tube exposed hotspot areas		
31	**Monitoring PM_{10}** – monitor of PM_{10} in Maidenhead town centre.	RBWM			N/A	N/A	No progress made			
31	**Monitoring road traffic** - EP to advise Highway to undertake suitable counts and monitoring.	RBWM	2006	ongoing	Survey points in AQAMs	N/A	Since 2006 AADT surveys within AQMAs been carried out. In 2009 a traffic model has commissioned	Traffic model: survey and modelling	Dec 2009	

APPENDIX A2 – Funded and Proposed LTP measure to be integrated with the existing AQAP

DETAILS	Responsibility	Impact on AQ	Targets By Date	Cost **	Other Impacts
NETWORK MANAGEMENT (NM)					
Urban traffic control (NM) Details Updating and extending the current UTC♦ system					
Urban traffic control (NM) Details Updating and extending the current UTC♦ system	RBWM	High	2010 onwards	£150,000	
Windsor & Eton Relief Road/ Clarence Road Junction (WERR)					
Windsor – part of the Windsor Relief Road scheme (see entry above & WERR scheme (below)	RBWM	High	See below	See below	Windsor – part of the Windsor Relief Road scheme (see entry above & WERR scheme (below)
Junction Improvements (NM) Details: Modifying the layout of junctions experiencing chronic congestion					
Ongoing feasibility in progress at key roundabouts and junctions in Maidenhead and Windsor.	RBWM	High	2010 and ongoing	£ 40,000	Reduced road traffic congestion
Windsor & Eton Relief Road, Clarence Road junction improvement scheme in association with DfT, Highways Agency. Maintenance and improvements including traffic studies, traffic light (UTC replacement), reduce congestion and traffic routes.	RBWM	High	2010 - 2012	Circa. £2m dependant upon scope of project (ext. funded)	Health and air quality benefits and reduced congestion at peak hours
Windsor Parking and Transport Strategy: Car parking includes - Home Park car park extension; East Berks. College (extended public use); weekend public use of King Edward VII Hospital car park; improved accessibility at Windsor Dials ; new park and ride schemes from Centrica and Windsor Racecourse; enhancement of the existing park and ride at Legoland and improved travel information	RBWM	High	2009-2012	Circa. £2.5m (externally funded)	Reduced road traffic congestion by reducing circulating traffic

♦ Urban Traffic Control

♦ Urban Traffic Control

DETAILS	Responsibility	Impact on AQ	Targets By Date	Cost **	Other Impacts
Bus priority at traffic lights	RBWM	Low	2010 - 2011	£ 25,000	
Bray/M4/A308 Junction Improvements: To improve traffic flow, reduce congestion and improve air quality. Any remaining problems will result from M4 traffic – Highways Agency (HA). Dialogue to be enhanced with HA & SEERA re resolutions proposed.	RBWM	Med	2009	£ 30,000	Improved road safety for cyclists / motorcyclists.
Annual programme of junction improvements to reduce congestion	RBWM	Med	2009 - 2011	Circa. £ 40,000 per annum	Improved safety for road users
Maidenhead Town Centre					
Review of traffic in Maidenhead town centre with particular reference to Grenfell Road junctions and along A4 throughout the length to Castle Hill.	RBWM, Maidenhead Area Action Plan working group	Potentially high	Commencing Spring 2009	Costs to be determined as PROM project develops	reduced congestion, traffic flow improvements & wider health & environmental benefits
AIR QUALITY MONITORING					
Air Quality monitoring stations (Real-time)					
Install and attain data from 3 new stations to be installed in Oct 2009 funded by DEFRA air quality grant	RBWM	N/A air quality information acquisition	Ongoing	In contract price, DEFRA funded	N/A

** All funding is either within current budgets or is externally funded.

4. TARGETS AND OUTCOME

LTP authorities are required to report on up to 17 mandatory indictors, although the LTP8 indicator for air quality is required only where an Air Quality Management Area has been declared, except where this is not related to road transport, or is solely related to trunk roads. These mandatory targets assist the measurement of progress on the shared priorities for transport. When considering the setting of targets for pollutants concentrations for Mandatory Indicator LTP8, the authority should undertake an impact assessment of those LTP measures likely to have an impact within the AQMA .

The LTP should quantify, where possible, the expected air quality impacts of all proposed measures being undertaken within the Air Quality Management Area (AQMA). This should not only relate to specific air quality measures, but should as far as possible, also establish the likely air quality impacts of other proposed measures relating to the other shared priority areas, such as congestion, which might also have an beneficial impact on the air quality within the relevant AQMA.

Chapter 5 of the LTP presents the preferred strategy options and the corresponding benefits and associated costs of each option. In terms of air quality, Travel Plans and Park & Ride have been identified as the two interventions that will have the most significant impact on air quality. These will be assessed further in terms of their relative impacts on air quality within the two declared AQMAs. This does not however rule out the consideration of any combination of other options.

The LTP is required to set out a 2004/05 baseline and a 2010/11 target relating to concentrations of the pollutant that triggered the AQMA designation. There is however no suitable method for the annual assessment of NO_2 concentrations, and when considering the influence of meteorology in the dispersal of pollutants, it is possible that elevated concentrations may be observed, despite progress with reducing NO_X emissions within the AQMA. The LTP therefore measures progress against intermediate outcomes linked to the preferred strategy options, which are based on the numbers of road traffic vehicles and the emissions associated with the movement of these vehicles through the AQMAs.

The table below presents the air quality targets and trajectories for 2004/5 to 2010/11.

Area	**Intermediate outcome option**	**Baseline (2005/6)**	**Intermediate Outcomes**				**Target (2010/11)**
			2006/7	**2007/8**	**2008/9**	**2009/10**	
Windsor AQMA	Annual mean concentration	49 µg/m^3 A	46	47	46	-	40 µg/m^3
	Trajectory		48	46	44	42	
	Total Traffic (AADT): Windsor predicted	56839	57293	56721	58422	59928	59773
	AADT monitored	56829	56159	56159	54600		
	Cycling Trips (Annualised): Windsor	106	109	104	106	109	112

Area	Intermediate outcome option	Baseline (2005/6)	Intermediate Outcomes				Target (2010/11)
			2006/7	2007/8	2008/9	2009/10	
Maidenhead AQMA		51 µg/m^3 [A]	51	50	54	-	40 µg/m^3
	Trajectory		50	48	45	42	
	Total Traffic (AADT): Maidenhead	87,234	88,107	88,900	91,567	92,940	93,869
	AADT monitored	85533	85853	85665	82999		
	Cycling Trips (Annualised): Maidenhead	106	109	112	115	118	120
Borough Wide	Percentage of people who usually travel to work by car or van	66 [B]	tbc	tbc	tbc		
	Percentage bus patronage for work travel	1.76 [B]	tbc	tbc	tbc		
	No. school travel plans	7	12	15	18	21	-
	Car mode share (%) of journeys to school (Primary Schools)	58	57	55	53	51	49
	Car mode share (%) of journeys to school (Secondary Schools)	35	35	34	33	32	31
	No. work travel plans			tbc	tbc		
	Cycling Trips (Annualised)			tbc	tbc		

[A] Based on concentrations monitored at roadside continuous monitoring stations. Concentrations at receptor locations will be lower.

[B] Based on 2001 Census data.

The total traffic (AADT) within Windsor and Maidenhead AQMAs is just below the predicted AADTs and is on track in meeting the 2011 target. However, in Maidenhead the monitored reduction in traffic volume within the AQMA is not reflected in the ambient concentration of NO_2.

5. TRAFFIC DATA REQUIREMENTS

The RBWM is undertaking a borough wide traffic model and improving the traffic monitoring network, this will enable us to better identify the number and type of vehicles entering the AQMAs on each route, and assess the effectiveness of different options.

A reviewed and validation of traffic data will be carried out later this year and the tables below will be updated in the next AQAP progress Report in 2010.

The tables overleaf detail the information that will be required for the assessment of each option. Therefore, the tables should be populated for the baseline and then recalculated for each option that will then be compared against the 'business as usual baseline'. These forecast data will then be used to identify the intermediate outcomes, which then serve as annual objectives. On an annual basis, road traffic monitoring data will be compiled and reviewed in the context these intermediate outcomes to ensure overall progress towards meeting the 2010/11 target is maintained.

NO_X EMISSIONS and NO_2 CONCENTRATIONS

The traffic flow figures will be used to calculate the tonnes of NO_X emitted per annum within the AQMAs. This is undertaken on the basis of traffic flow, fleet mix, average vehicle speed and distance travelled on each road, and will provide a means for assessment against the intermediate outcomes.

The setting of the 2010/11 target will be supported through the application of atmospheric dispersion modelling, by assessing the relative contribution of each of the measures towards reducing ground level NO_2 concentrations.

This approach will use the modelling undertaken in the 2006 Further Assessment as the 2005 baseline. On the basis of the projected 2010 baseline and the traffic reduction achieved through the options by this date, it is possible to identify whether the target will be met, and which of the options deliver the most effective reduction in NO_2 concentrations. The required reduction in NO_2 concentrations can be related back to the required NO_X emission reductions and then the reduction in traffic flow required to meet the Air Quality Objective.

If the modelling shows that the target is not met then additional measures will require consideration.

APPENDIX B. TRAFFIC DATA REQUIREMENTS FOR WINDSOR AQMA (BASELINE)

Road	Traffic Flow (AADT24) and corresponding HGV %											
	2005		2006		2007		2008		2009		2010	
	AADT	%	AADT	%	AADT	%	AADT	%	AADT	%	AADT	%
B3024 Clarence Road (west)	5,936	3										
B3173 Imperial Road	5,936	3										
A308 Goslar Way	23,479	3										
Clarence Road (east)	5,207	3										
A332 relief (slip on from Maidenhead Arthur Road)	5,962	3										
A332 W&E relief south	32,144	3										
A332 W&E relief north	30,754	3										
A332 W&E relief (slip off to A308)	5,962	3										
Clarence Road roundabout	30,754	3										

APPENDIX C. TRAFFIC DATA REQUIREMENTS FOR MAIDENHEAD AQMA (BASELINE)

Road	Traffic Flow (AADT24) and corresponding HGV %											
	2004/05		2006		2007		2008		2009		2010	
	AADT	%	AADT	%	AADT	%	AADT	%	AADT	%	AADT	%
A308 Crauford Road	13,997	3										
A4 Saint Cloud Way	25,266	3										
A4 Bath Road	21,270	3										
Roundabout (A4) / 2	12,072	2										
A308 Frascati. Way	17,171	3										
Grenfell Road	17,980	3										
Grenfell Road (A308)	36,134	3										
Broadway	10,340	3										
Queen Street	10,340	3										
High Street	10,340	3										
A308 King Street	36,134	3										
A308 Roundabout	19,772	3										
A308 Roundabout / 2	9,886	3										
A308 Braywick Road (N) / 2	17,440	3										
A308 Braywick Road (S) / 2	18,694	3										
A308 Braywick Road	36,134	3										