Chiltern District Council

CLAIRE
Chiltern's Local AIR & Environment

Final Air Quality Action Plan (Post Consultation) for Berkhampstead Road / Broad Street (A416) Air Quality Management Area

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

Oct, 2009

Chiltern District Council

Bucks Air Quality Management Group
BAQMG

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Executive Summary

This Air Quality Action Plan (AQAP) sets out the measures that Chiltern District Council intend to take or investigate further to improve air quality in the Chesham Air Quality Management Area (AQMA).

The AQMA was declared because assessments of air quality predicted that the annual mean objective for nitrogen dioxide of 40 µg/m3 would not be met. Nitrogen dioxide pollution arises primarily from emissions of a mixture of nitrogen dioxide and nitric oxide from combustion processes such as vehicle engines. When mixed with ambient air nitric oxide is converted to the pollutant nitrogen dioxide. Together, nitrogen dioxide and nitric oxide are referred to as oxides of nitrogen (NOx).

The AQAP therefore puts forward a range of actions aimed at reducing NOx emissions in order to achieve the air quality objective for nitrogen dioxide. An average reduction in NOx emissions of up to 28%[1] is required in order to meet the air quality objective.

It is important to note that these specific actions will compliment the wide range of actions such as: green travel, publicity and enforcement initiatives found in the adopted Bucks and Milton Keynes Air Quality Strategy (download at www.chiltern.gov.uk/claire)

The primary source of the pollution in the AQMA is from road traffic and so extensive consultation and dialogue has taken place with Buckinghamshire County Council who is responsible for the Buckinghamshire Second Local Transport Plan (LTP2)

The specific action plan measures are detailed in Appendix 1. Chiltern District Council has a statutory duty to review and assess air quality and improvements in the AQMA will be assessed against ongoing passive monitoring at a number of locations along the A416 (and continuous monitoring when possible) undertaken by CDC.

Action Plan updates will be produced and submitted to DEFRA according to statutory timeframes.

The levels will also be linked to traffic emission data and air quality targets in the Buckinghamshire LTP2 and also be reported to DfT. It is hoped this will provide further impetus for action and enhance our existing partnership.

[1] Based on 2006 Detailed Assessment. New Detailed Assessment scheduled March 2010 following 6 months additional monitoring as discussed with Defra following USA report April 2009.

Introduction and Aims of Action Plan

The latest Air Quality Strategy (AQS) released in July 2007 provides the overarching strategic framework for air quality management in the UK and contains national air quality standards and objectives established by the Government to protect human health.

The objectives for ten pollutants (benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide particulates - PM_{10} and $PM_{2.5}$ - and ozone) have been prescribed within the Air Quality Strategy based on The Air Quality Standards (England) Regulations 2007.

The Objectives set out in the AQS for the protection of human health are presented in Figure 1. The Air Quality Standards (England) Regulations came into force on 15th February 2007. This brings together in one statutory instrument the Governments requirements to fulfil separate EU Daughter Directives through a single consolidated statutory instrument which is fully aligned with proposed new EU Air Quality Directive (CAFE – Clean Air for Europe).

The Environment Act 1995 gives local authorities duties and responsibilities that are designed to secure improvements in air quality, particularly at the local level. Part IV of the Act requires each local authority within the UK to periodically review and assess air quality in its area, and determine whether the prescribed objectives are likely to be achieved by the relevant future year.

Where it appears that the air quality objectives will not be met in a particular hotspot by the designated target dates local authorities must declare an Air Quality Management Area (AQMA) and develop an action plan for that area in pursuit of the air quality objectives.

An AQMA was declared in Chesham in September 2007. The AQMA was declared on the basis of the potential exceedance of the annual mean nitrogen dioxide (NO_2) air quality objective, caused primarily by emissions from road transport. The AQMA encompasses an area along parts of Broad Street and Berkhampstead Road and can be seen in Figure 2.

Following designation of an air quality management area, an air quality Action Plan should be completed between 12 – 18 months following the date of designation. Once a local authority has produced its final action plan, a first Action Plan Progress Report must be submitted by the end of the following April to DEFRA.

This final draft action plan has been developed in recognition of this legal requirement on the local authority to work towards air quality objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part.

Comments from the Buckinghamshire LTP2 consultation (undertaken as part of the Buckinghamshire LTP2 Progress Report 2008 consultation in Sep-Oct 2008) have been incorporated into this draft air quality action plan.

Figure 1: Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu g/m^3$	Running annual mean	31.12.2003
	5.00 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu g/m^3$	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 $\mu g/m^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu g/m^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu g/m^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu g/m^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu g/m^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

Health Effects of Nitrogen Oxides

Road Vehicles are responsible for over 50% of the emissions of NO_x in the UK. Burning fossil fuels in air produces around 23% of NO_X. Both nitric oxide (NO) and nitrogen dioxide (NO_2) are produced, with nitric oxide being the major primary pollutant.

This is the first point in a complex series of chemical reactions, involving a range of other pollutants, including ozone. Together the two oxides are referred to as NO_x. The concentration of the different elements of NO_x will depend on the oxidising capacity of the local atmosphere.

Nitrogen dioxide has been identified as having a number of possible adverse health effects, focused around the respiratory system, in both asthmatic and non-asthmatic subjects. Short-term exposures can increase reactivity to allergens, such as pollen. In some individuals high levels of nitrogen dioxide can precipitate or exacerbate episodes of asthma. Exposure of children to nitrogen dioxide may increase the risk of respiratory infections and possibly lead to poorer lung function in later life.

At the time of writing the plan, the Council is unaware of any specific adverse health effects associated with the locality.

Monitoring of Air Quality

Road traffic emissions are currently leading to a potential exceedence of the annual mean objective for nitrogen dioxide. At the worst affected location a reduction of up to 16 µg/m3[2] (28.5%) could be required by the proposed measures in order to comply with the NO_2 objective.

Continuous and passive monitoring for nitrogen dioxide has been undertaken along the AQMA since declaration and this will be fully considered and reported as part of the April 2009 Updating and Screening Assessment following full ratification.

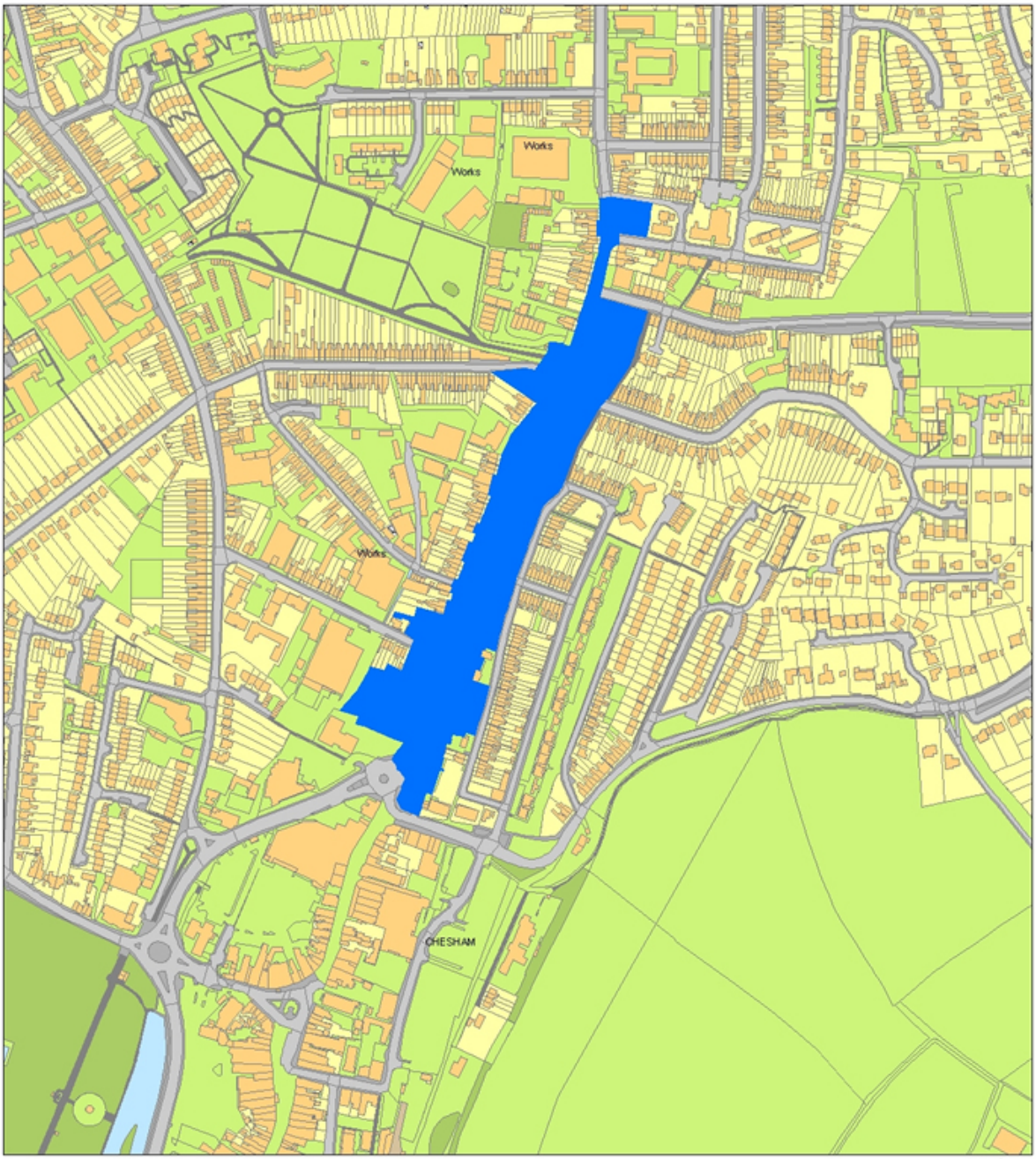
Future monitoring will comprise of sustained passive monitoring and the continued use of temporary continuous monitoring in order to satisfy review & assessment requirements.

[2] Based on 2006 Detailed Assessment. New Detailed Assessment scheduled March 2010 following 6 months additional monitoring as discussed with Defra following USA report April 2009..

Location and Issues

The following diagram (Figure 2) shows the geographical location and extent of the designated AQMA.

Chiltern District Council's AQMA along Broad Street/Berkhampstead Road, Chesham



90 45 0 90 Meters

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Legend

Air Quality Management Area

The road providing the focus of the AQMA links the town of Chesham with the village of Ashley Green, but also forms part of a major through route ('A' road) for vehicles travelling generally from the north to the southern motorways (M25, M40 etc). Detailed landlines for the area can be found in Appendix 2.

Policy context, existing strategies and consultation

In 2000 representatives from each District Council, the County Council, Milton Keynes Council and the Primary Care Trust formed an expert working group to help co-ordinate air quality management in Bucks. This collaboration not only reflects the important role that all Local Authorities in the county play in protecting the environment, but also signalled the creation of partnerships for dealing with air quality issues in the future. The group has evolved very successfully over the last eight years and will continue to promote initiatives for improving air quality across the County.

Bucks & Milton Keynes Regional Air Quality Strategy

The air quality strategy covers the region of Buckinghamshire and Milton Keynes and has been produced by the Bucks Air Quality Management Group; it contains a number of actions to raise the profile and inform the public on the importance of air quality across the County and aims to improve air quality for Buckinghamshire as a whole in order to reduce background levels across the board. Whereas an air quality action plan, such as this plan, tackles a specific hotspot area with the worst air pollution levels. They should therefore be considered complimentary.

Buckinghamshire – Local Transport Planning

Air quality is included as a key shared priority area within Local Transport Plans (LTPs) for those local authorities in England. Whilst the duty to assess air quality lies with the district authority, upper-tier authorities should work closely with the district authorities to produce an LTP, which incorporates air quality actions, in order to address any air quality problems due to local road transport.

The upper-tier authority also has an important role to play in the provision of data related to traffic infrastructure schemes or traffic management schemes that would significantly alter the number of vehicles on a road, the vehicle classes using a road, or the speed at which vehicles would travel. Provision of this data to the district authority on committed or proposed schemes will assist the process in determining whether air quality objectives can be attained. It should be noted that Schedule 11 of the Environment Act 1995 imposes a duty on County Councils and districts to exchange information in relation to the duties carried out under the local air quality management system

The 1995 Act makes special provision for County Council input to the Review and Assessment process and the preparation of any action plan. It recognises the crucial role of county councils as highways authorities and the importance of traffic management and transport planning in achieving air quality objectives. It is particularly important, for example, that air quality action plans are properly co-ordinated with Local Transport Plans. Where the air quality management area designation arises primarily because of transport pollution, local authorities in England should integrate their action plans into their Local Transport Plans. However, all authorities, both inside and outside London, should continue

to have a stand alone air quality Action Plan containing all relevant measures. ***(Part IV of the Environment Act 1995, draft Local Air Quality Management Guidance July 2008)***

Draft interim measures were provided with the 2008 update to DfT for the purposes of consultation.

Historical - CATS (Chesham and Amersham Transport Study)

Although the Chesham and Amersham Transport Study has not been taken forward at this point by the County Council, it nevertheless provides useful points in relation to consultation and feedback from the public and stakeholders on relevant issues within the AQMA.

The following points are a sample of some of the problems identified by stakeholders during the first phase of the study.

- Slow moving traffic was observed in both directions during peak hours along the A416 (of which Broad Street forms a part)
- Moor Road is perceived as being used as a rat run. The Moor Road junction is congested during the peak hours
- The Red Lion Street pedestrian crossing traffic signals turn red quite often and stay red too long causing some queuing on the A416
- There is a narrow section of Church Street that is unsuitable for lorries
- The section of four lane carriageway on the A416 (St Mary's Way) has narrow lanes.
- The carriageway along Berkhampstead Road is generally in poor condition, as are the road markings
- Chiltern District Council has identified high levels of air pollution along Berkhampstead Road

Feasibility proposals for the A416 in Chesham have to date been aimed at reducing congestion, which is likely to also improve the air quality in the area. Delivery of measures within the CATS study is the responsibility of Buckinghamshire County Council as the Transport Authority. To date no measures have been implemented.

Consultations (Updated September 2009)

Schedule 11 of the 1995 Act requires local authorities to consult with: the Secretary of State; the Environment Agency; the Highways Authority; all neighbouring local authorities; the County Council; any National Park Authority; other public authorities as appropriate.

This initially took place through the Buckinghamshire LTP2 update procedure, and was repeated once the draft plan had been agreed by Cabinet. The Action Plan has successfully been updated following public consultation via the council website and local press.

Source apportionment

Source apportionment is the process whereby the contributions from the sources of a pollutant are determined. In local air quality, the relevant sources could include: traffic; local background; industrial and domestic. Contributions from the different types of vehicles (for example, cars, lorries and buses) can also be considered to highlight which class of vehicle is contributing most to the emissions from traffic. Source apportionment allows the most important source or sources to be identified and options to reduce ambient concentrations of pollutants can then be considered and assessed.

This source apportionment is used to:

- Confirm that exceedences of NO_2 are due to road traffic
- Determine the extent to which different vehicle types are responsible for the emission contributions to NO_2: this will allow traffic management scenarios to be modelled/ tested to reduce the exceedences
- Quantify what proportion of the exceedences of NO_2 is due to background emissions or local emissions from busy roads in the local area. This will help determine whether local traffic management measures could have a significant impact on reducing emissions in the area of exceedence, or, whether national measures would be a suitable approach to achieving the air quality objectives.

The base case used in this assessment is defined as the annual mean concentrations of NO_2 that were predicted in 2005 in the absence of any measures to improve air quality in Chiltern District. They are the concentrations that were utilised to define the extent of the Air Quality Management Area.

The most affected receptors where there is potential relevant public exposure in the AQMA have been considered: these are shown below in Figure 3.

General Area	Description	OS Grid reference
Broad Street	Façade of 37 Broad Street	496116, 202011
Jolly Sportsman	Façade of public house	496239, 202312

Figure 3 – Most affected receptors exceeding annual objective in AQMA

In the detailed assessment (available to download from www.chiltern.gov.uk/claire) the effect of the following sources at the receptors were considered:

- Background from sources outside the local area
- Traffic
- Heavy duty vehicles (buses, coaches and heavy goods)
- Stationary vehicles in queues

The concentrations of oxides of nitrogen apportioned to each source category and the fractions of the total are shown in Figure 4. It also shows the contributions from the background and the modelled local roads contribution. It then shows the breakdown of the local road contribution between heavy and light duty vehicles and between moving and stationary vehicles (in queues at bus stops).

	Contribution to oxides of nitrogen concentration μgm^{-3}						
Area	Total	Background	Local roads	Local HDV	Local LDV	Moving Vehicles	Stationary Vehicles
Broad Street, Chesham	93.6	39.8	53.8	37.1	16.7	44.9	8.9
Jolly Sportsman Chesham	120.7	41.5	79.1	59.4	19.7	52.5	6.9

HDV = Heavy Duty Vehicles.

Figure 4: Concentrations of oxides of nitrogen concentrations apportioned to each source category and the fractions of the total concentrations, and the contributions from the background and the modelled local roads contribution.

At each of the receptor sites, the heavy duty vehicles make a significant contribution to the total oxides of nitrogen concentrations. Stationary vehicles in queues and at bus stops also make a substantial contribution at each of the receptor sites.

Figure 5 shows the modelled nitrogen dioxide concentrations at these locations for the base case, 2005 and for the cases where there are no heavy duty vehicles or no stationary vehicles.

	Modelled nitrogen dioxide concentration, μgm^{-3}		
Area	Baseline	No HDV	No stationary vehicles
Broad Street, Chesham	47.7	37.8	44.6
Jolly Sportsman Chesham	56.0	41.9	47.8

Figure 5: Modelled nitrogen dioxide concentrations

It is therefore clear that actions to tackle BOTH the cleanliness/ number of HDV's and a reduction in number of stationary vehicles may potentially be most appropriate for this action plan in order to reduce levels to below the 40 μgm^{-3} standard.

Evaluation of Measures & Impact Assessment

Before identifying the options available for improving air quality, it is necessary to determine the overall level of improvement required. This can be calculated simply, in μgm^{-3}, as the difference between the total predicted concentration (from the Detailed Assessment) and the relevant air quality objective. This can be expressed in terms of concentration units or as a percentage.

The detailed assessment identified the highest annual average NO_2 value as $56\mu gm^{-3}$, against an objective value of $40\mu gm^{-3}$. The required improvement (in μgm^{-3}) to meet the objective is therefore:

Required Improvement = Predicted Concentration – Objective
= $56\mu gm^{-3}$ - $40\mu gm^{-3}$
= 16 μgm^{-3}

and as a percentage:

Percentage Improvement = Required Improvement x 100 = 28.5%
Predicted Concentration

The maximum concentration where exposure is likely has been identified by the detailed assessment as $56.0\mu gm^{-3}$

The next stage in the selection and development of options is to identify the sources where controls might be effective in reducing concentrations and which make a significant contribution to the exceedance of a particular objective. This would exclude most background sources. Control options can then be identified for the "relevant" sources.

A number of measures such as pedestrianisation, congestion charging and Low Emission Zones were initially considered but subsequently ruled out based on the location of the road, its status on the network, lack of any suitable alternative routes and prohibitive cost. However a watching brief on Low Emission Zones and other pilot projects will mean that this option will not be ruled out for future consideration.

The above calculation is based on the 2006 Detailed Assessment which provides a maximum reduction required, Targets and progress will be updated through an agreed further six months monitoring and Detailed Assessment in 2009/10 (Defra Communication June 2009).

Following consideration of a range of options from road traffic related actions to infrastructure; **6 primary measures** are considered in detail as part of the prioritisation and evaluation of potential options to take forward as part of the final plan. In some cases options that may result in improved air quality are discounted due to legal constraints or purely that they are unfeasible.

Option 1: Urban Traffic Control System (UTC)

Objective: Consider benefits for air quality in terms of aspects of an Urban Traffic Control System (UTC) and location of lights, crossings etc. for A416. A UTC is a coordinated traffic system which allows more reactive traffic management to actual traffic flows. This would be in collaboration with improvements to location of lights, zebra crossings, width of lanes etc. Manual or video traffic count surveys will be required for all the junctions which may become signalised. Each junction will then have to be modelled individually and then as a network to see if this solution is practicable. Modelling of the network should be able to give an idea of the reduction in pollution levels through better management of the network. Further detailed investigation into air quality benefits of this option would be required by Bucks CC before this measure was taken forward.

Control of This Option: Transport for Buckinghamshire

Air Quality Improvements: Potential for improved flow of traffic through the area and associated reduction of emissions.

Non Air Quality Impacts: May reduce ambient noise levels**,** Likely to improve safety along this stretch**,** Reduced fuel consumption**,** Reduced Carbon Dioxide emissions.

Cost Effectiveness:

Cost generally high, however the project and scoping work has been considered as part of a Bucks CC project plan in 2007/8. Option has been included in the air quality section of the LTPII update in 2008. This measure is wholly dependant upon Bucks CC funding.

Perceptions:

It is possible that there may be a negative reaction to this option from those using the AQMA as a through route. Although it may improve traffic flow and therefore reduce congestion.

Commentary:

The original CATS study was recently reviewed by Transport for Buckinghamshire in 2009. It was revealed that measures outlined in the study would not sufficiently alleviate congestion and air quality problems to justify the investment required.

Overall Rank: (Not suitable option to take forward as an action)

Option 2: Speed Reduction

Objective: Consideration of reduction from 30 to 20 mph along the A416 within the AQMA.

Control of This Option: Transport for Buckinghamshire

Air Quality Improvements: This road suffers from congestion and at peak times does not achieve 30 mph. This measure is therefore unlikely to aid a reduction in air pollution.

Non Air Quality Impacts: May reduce ambient noise levels, may improve safety along this stretch.

Cost Effectiveness:

Unlikely to be possible in this location due to type and nature of road in the highway network.

Perceptions:

There is likely to be a negative reaction to those travelling along the road. A positive reaction is likely from those that live along the road within the AQMA.

Commentary:

This choice has been deemed unsuitable to take forward as an option, due to the nature of the traffic flow and the already slow speed limit in place.

Overall Rank: (Not suitable option to take forward as an action)

Option 3: Frequent Parking Enforcement Campaigns

Objective: Positive pro-active enforcement within the AQMA zone to prevent illegal parking and waiting. Aims to smooth traffic flow over the course of the day.

Control of This Option: Chiltern District Council

Air Quality Improvements: Should reduce NOx emissions at peak times and hence contribute to annual NO2 objective achievement.

Non Air Quality Impacts: May improve safety along this stretch.

Cost Effectiveness:

Would require increased attention by parking attendants and Thames Valley Police (TVP) in this locality. Comparatively low additional cost option compared to hard measures. Attendants already in place and within the control of Chiltern District Council with TVP supportive of specific campaigns.

Perceptions:

A positive reaction is likely from travelling along the road within the AQMA.

Overall Rank: 1

Option 4: Restriction of HDVs from using this road

Objective: DEFRA promote the consideration of this option when HDV *(Heavy Duty Vehicles*) use is high. This is the case for the AQMA route, with a high percentage of HDV therefore consideration could be given to the potential for restrictions.

Control of This Option: Transport for Buckinghamshire

Air Quality Improvements: Should reduce NOx emissions at peak times and hence contribute to annual NO2 objective achievement significantly owing to the high HDV mix identified.

Non Air Quality Impacts: May reduce ambient noise levels**,** may improve safety along this stretch**.**

Cost Effectiveness:

Not suitable for this location.

Perceptions:

There is likely to be a negative reaction from HDV drivers. A positive reaction is likely from all other parties.

Commentary:

This choice has been deemed unsuitable to take forward as an option at this stage, due to the status of the road as part of the Strategic Highway Network.

Overall Rank: (Not suitable option to take forward to action plan)

Option 5: Highway improvements to improve traffic flow

Objective: Identify traffic management and small scale infrastructure options to improve traffic flow through the AQMA without adversely affecting other areas of the transport network.

Control of This Option: Transport for Buckinghamshire

Air Quality Improvements: Should reduce NOx emissions at peak times and hence contribute to annual NO2 objective achievement.

Non Air Quality Impacts: May reduce ambient noise levels**,** may improve safety along this stretch**.**

Cost Effectiveness:

Cost dependant upon works required following scoping. Potentially medium to high cost, dependant upon complexity of findings.

Perceptions:

There is likely to be a neutral reaction. Consideration of pedestrians would also be important.

Commentary:

Early assessment indicates limited junction improvements could improve traffic flow through the AQMA easing congestion.

Overall Rank: 2

Option 6: Review of parking restrictions and future schemes

Objective: Ensure current and future restrictions take account of the AQMA. This includes any proposed changes to permit parking and waiting zones. Consideration may also be given in the future to charges based upon emissions.

Control of This Option: Chiltern District Council

Air Quality Improvements: Should reduce annual NOx emissions and contribute to annual NO2 objective achievement.

Non Air Quality Impacts: Improved parking for the area

Cost Effectiveness:

Should be undertaken in parallel with existing or planned reviews and therefore cost implication is low.

Perceptions:

A potentially mixed reaction.

Overall Rank: 3

In a large number of cases, it will not be possible for individual options to deliver the entire reduction required. Indeed it may be more effective to combine a number of options to deliver the required improvement. It is therefore a key task to identify the optimum mix of options taking into account the considerations.

Final Ranked Order to take forward to action plan:

RANK	OPTION:
1	Option 3: Frequent Parking Enforcement Campaigns in AQMA
2	Option 5: Highways improvements to improve flow
3	Option 6: Review of parking restrictions and future schemes
Unsuitable at this time	Option 1: Urban Traffic Control System (UTC)
Unsuitable at this time	Option 2: Speed Reduction
Unsuitable at this time	Option 4: Restriction of HDVs from using this road

Current Economic Climate:

Several actions are dependant upon funding, either by CDC or BCC and as such the current economic conditions may potentially impact upon the extent and final feasibility to which some of these actions are delivered.

Action Plan

A matrix demonstrating the measures and including lead organisation, potential air quality impact, timescales, cost and other benefits has therefore been developed as **Appendix 1**. The measures have also been ranked in order to guide implementation.

Implementation and Monitoring

The action plan matrix contains measures attributed to Chiltern District Council, Transport for Buckinghamshire or the wider BAQMG. These are identified by lead organisation; however in most cases a joint approach with a number of stakeholders will be required to realise the required benefit.

In order to evaluate the effectiveness of the Action Plan, Chiltern District Council will continue to monitor Nitrogen Dioxide levels along the AQMA with the use of diffusion tubes and the loan of a continuous analyser as and when required.

This will show whether the expected and required reduction in levels is occurring and whether the objective level is likely to be met. The next stage of Review and Assessment of Air Quality will be undertaken by April 2009 and this will analyse and show the trend in pollutant levels.

If it appears that the reduction in NO2 will not be sufficient then this Action Plan will be reviewed and possible further measures revisited and implemented.

Monitoring will be undertaken by Chiltern DC through Annual Action Plan Progress Reports submitted to DEFRA under the Local Air Quality Management Regime.

This information will also be reported to the DfT through the BAQMG and Bucks CC for the purposes of reporting on shared actions through the LTP (II) and LTP (III).

APPENDIX 1 CHESHAM AQMA ACTION PLAN

Rank	MEASURE	Description	Lead Org	AQ Impact	Timescale	Cost	Risks	Non AQ Impact
EXISTING	Buckinghamshire and Milton Keynes Regional Air Quality Strategy (BMKAQS).	Continue to work in partnership with other members of the BAQMG to deliver the regional air quality strategy. (Improved public awareness of air quality hot spots. Individual actions that all residents and businesses can take) .Publicity campaigns and Enforcement	BAQMG	High (to whole district)	CURRENT	££	None	CO2, partnership working, congestion
1	Frequent Parking Enforcement Campaigns in AQMA	Highly visible enforcement against waiting vehicles.	CDC	Med	Ongoing	£	Capacity	Congestion, CO2, noise improvements.
2	Highway improvements to improve traffic flow	Identify traffic management and small scale infrastructure options to improve traffic flow through the AQMA without adversely affecting other areas of the transport network.	CDC & BCC	High	2009-11	£££	Progress dependant on funding	Congestion, CO2, noise improvements.
3	Review of Parking restrictions & any proposed changes to permit parking / waiting zones.	Consider the impact of existing parking restrictions to reduce congestion in or adjacent to the AQMA. Ensure future schemes and changes to parking are considered with regard to the AQMA	CDC	Med	2010-11	££	Dependant upon additional factors	Congestion, accessibility
4	Awareness Campaign	Engage with businesses, schools and public transport facilities in around the AQMA to raise awareness of the air quality issue.	CDC & BCC	Med	2008-10	££	Capacity	Congestion, CO2, noise improvements.

5	Public Transport Clean Up	Engage with public transport operators using Broad Street. Encourage the use of low emission technology and driving practices. Investigate the possibility of grant funding.	BCC & CDC	Med	2009-11	££	Reliant on funding from Public Transport operators.	Congestion, CO2, noise improvements.
6	Freight Clean Up	Engage with freight operators using Broad Street. Encourage the use of low emission technology and driving practices. Investigate the possibility of grant funding.	BCC	Med	2009-11	££	Dependant upon response from operators	Congestion, CO2, noise improvements.
7	SAT NAV Rerouting	Contact SAT NAV companies to investigate possibility of rerouting traffic around the AQMA. Encourage behaviour change.	BCC & CDC	Med	2009-11	£	Difficult to re-route with limited alternative routes	Congestion, noise improvements.
8	Formal Vehicle Emission Testing Campaign	Highly visible vehicle emissions testing campaign on Broad Street. In partnership with VOSA.	CDC & BCC	Med	2009-10	£££	Funding	Congestion, CO2, noise improvements.
9	Travel Plans	Engage with businesses, schools and public transport facilities in around the AQMA to develop travel plans. Travel plans encourage modal shift from the car to lower and zero polluting modes of transport such as cycling, walking and public transport. Prioritise those organisations whose associated trips pass through the AQMA	BCC	Med	Ongoing	££	Capacity	Congestion, CO2, noise improvements.
10	Ensure planning consider impacts of the designated AQMA with reference to future development	Air Quality is a material planning consideration.	CDC	Med	2009-10	£	Additional training may be required	Congestion, CO2, noise improvements.

11	CDC will actively support schemes that may improve air quality along the AQMA and promote a modal shift to other forms of transport.	Schemes to be considered for their impact on air quality.	CDC	Med	2009-10	£	none	Congestion, CO2, noise improvements.
12	Identify opportunities for planting trees with the capacity to improve air quality	Set up working group to identify possible locations and take project forward.	CDC & BCC	Low	2009-10	£/££	Reliant on co-operation of Highways	CO2, noise improvements, aesthetic and biodiversity.
13	CDC will expand the promotion of the reporting of smoky vehicles with the vehicle emission watch leaflets with freepost envelopes.	Target AQMA zone and businesses in the vicinity	CDC	Low	2009-10	£	none	Congestion, CO2, noise and odour improvements.
14	CDC will continue to provide comprehensive control over Part B industrial processes.	Other potential sources of air pollution will be minimised.	CDC	Low	2009-10	£	none	Congestion, CO2, noise and odour improvements.
15	CDC will add the exact location of the AQMA to the 'site constraints database' used by the planning section to allow for consideration as part of the planning process	This action has been completed (Sept 2008)	CDC	Low	2008	£	none	Congestion, CO2, noise and odour improvements.
16	CDC will look for evidence that developers have taken appropriate steps to minimise any increases in air pollution in the AQMA. This will include an assessment of the air quality implications where	Mitigation and Adaptation on redevelopment	CDC	Low	2009-10	£	Additional training may be required	Congestion, accessibility

	applicable.							
17	Engage with local groups and the voluntary sector	Work with revitalisation groups in close proximity to Chesham.	CDC	Low	2009-10	£	Capacity	Community involvement
18	Engage with taxi operators to reduce emissions	Investigate possibility for low emission technology and training and promote LPG vehicles.	CDC	Low	2009-10	££	Capacity and funding	Congestion, CO2, noise and odour improvements.

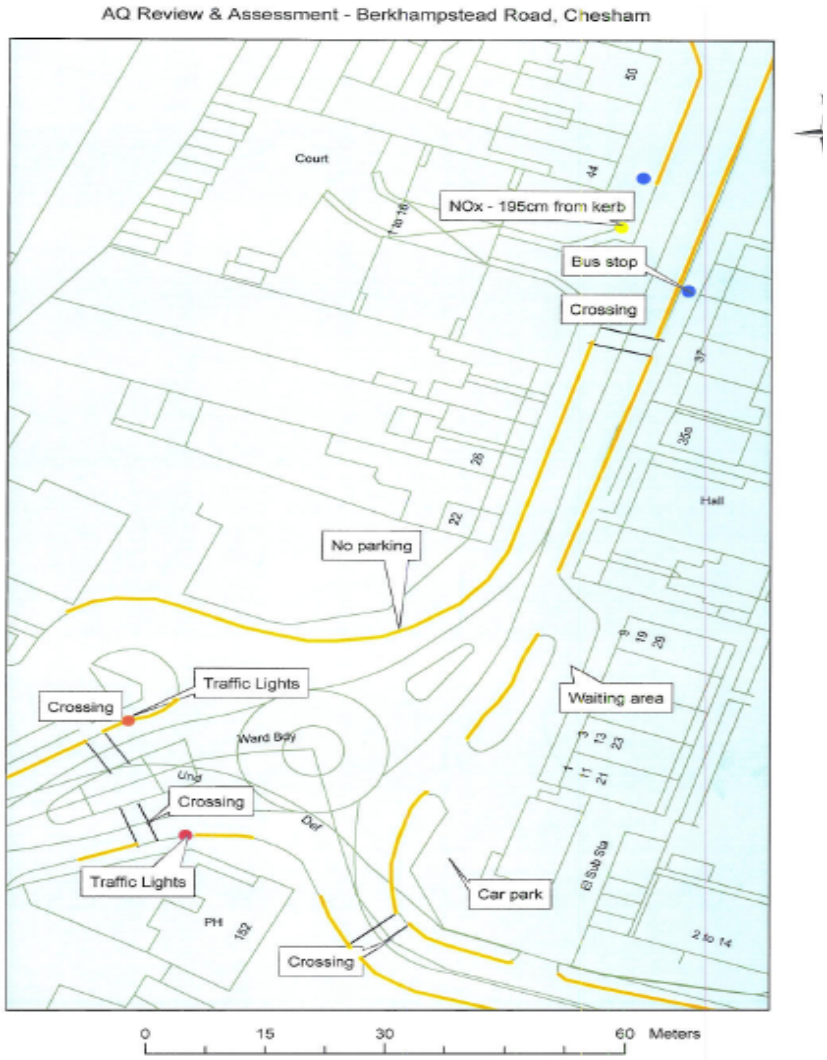
Timescale: LONG = 5 to 10 years;
MEDIUM = 2 to 5 years;
SHORT = Less than 2 years

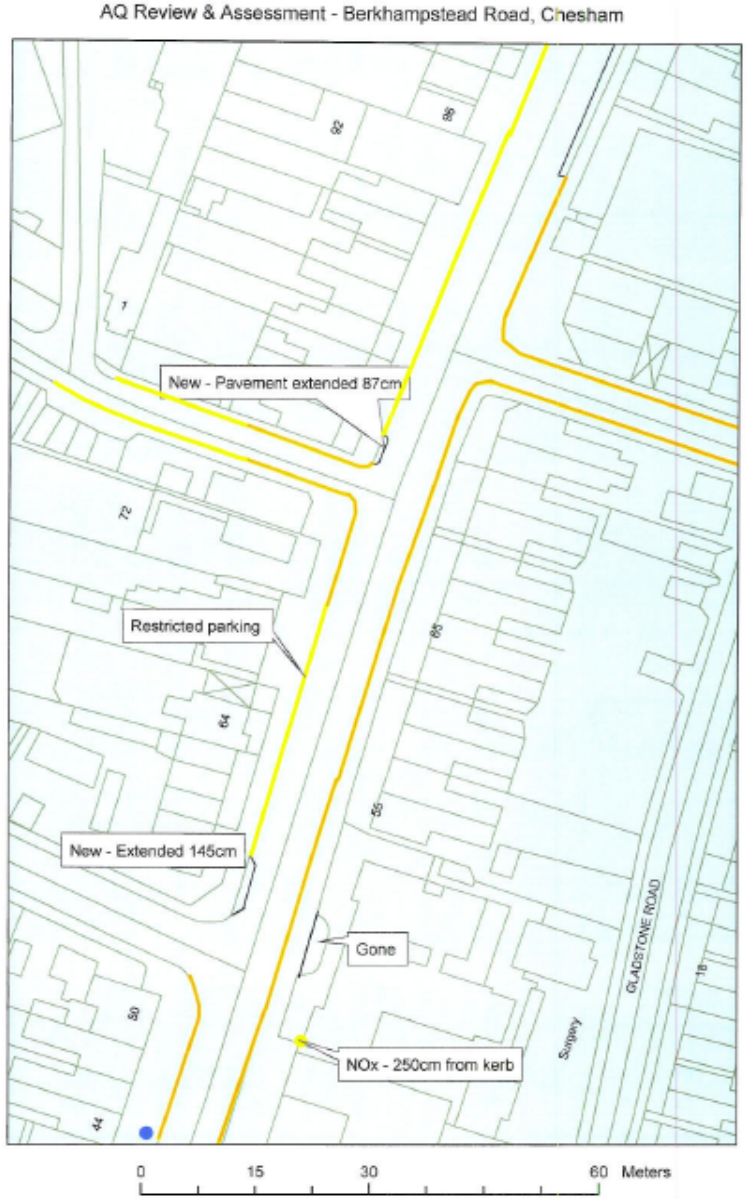
Cost: ££££ = Greater than £30,000
£££ = £5000 –£30,000;
££ = £1000 - £5000;
£ = Less than £1000

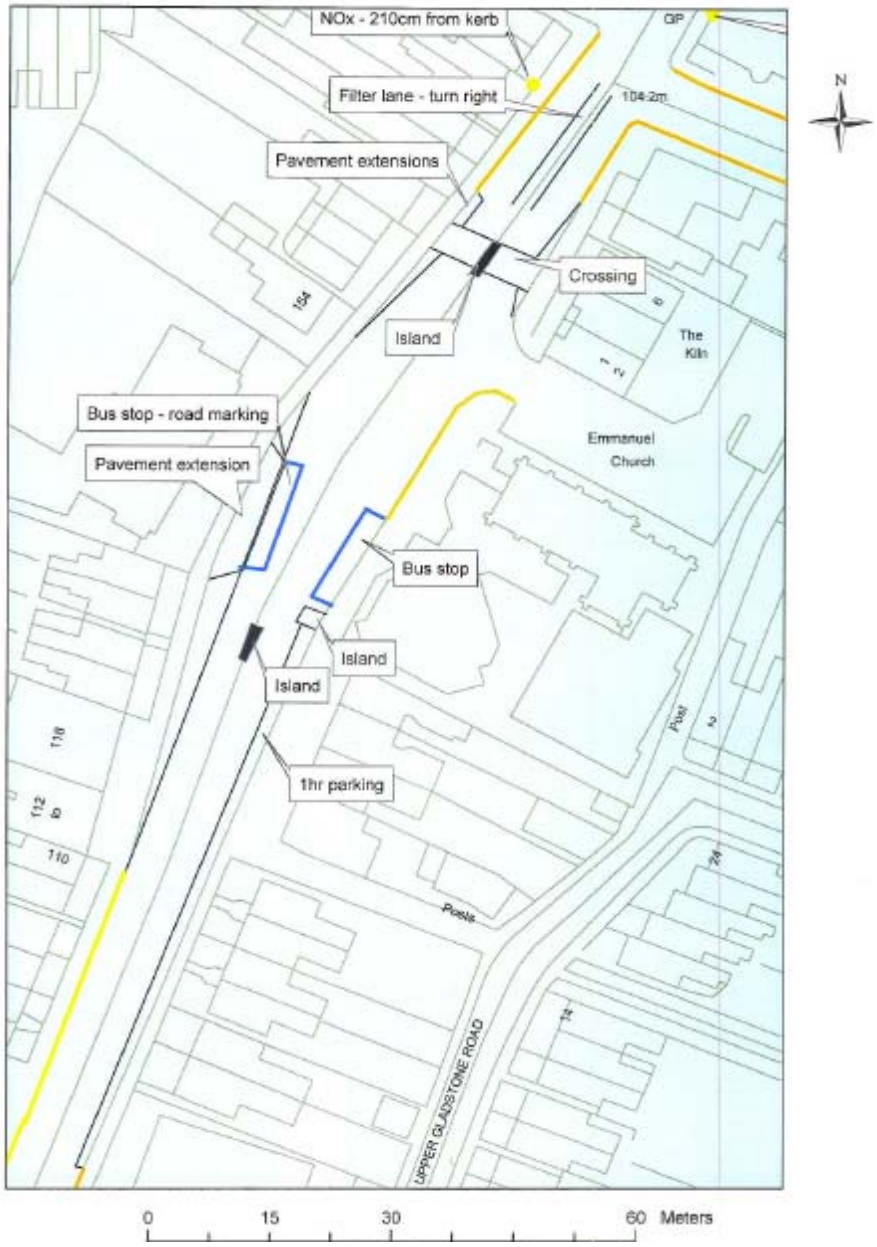
Air Quality Impact (shown as reduction in annual mean NO_2)**:**

HIGH = Above 2 µg m-3;
MODERATE = 1 to 2 µg m-3;
LOW = 0.2 to 1µg m-3;

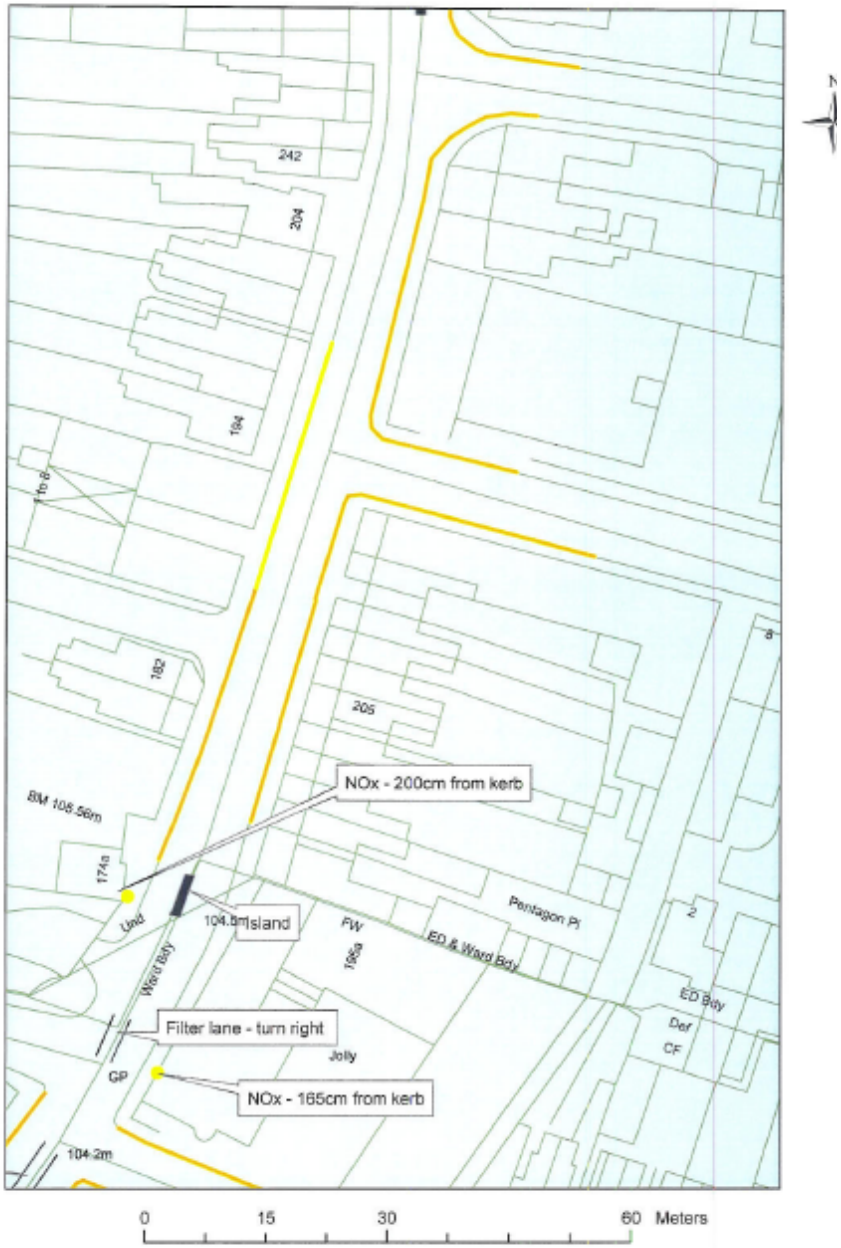
Appendix 2 - Traffic features on Berkhampstead Road and Broad Street.



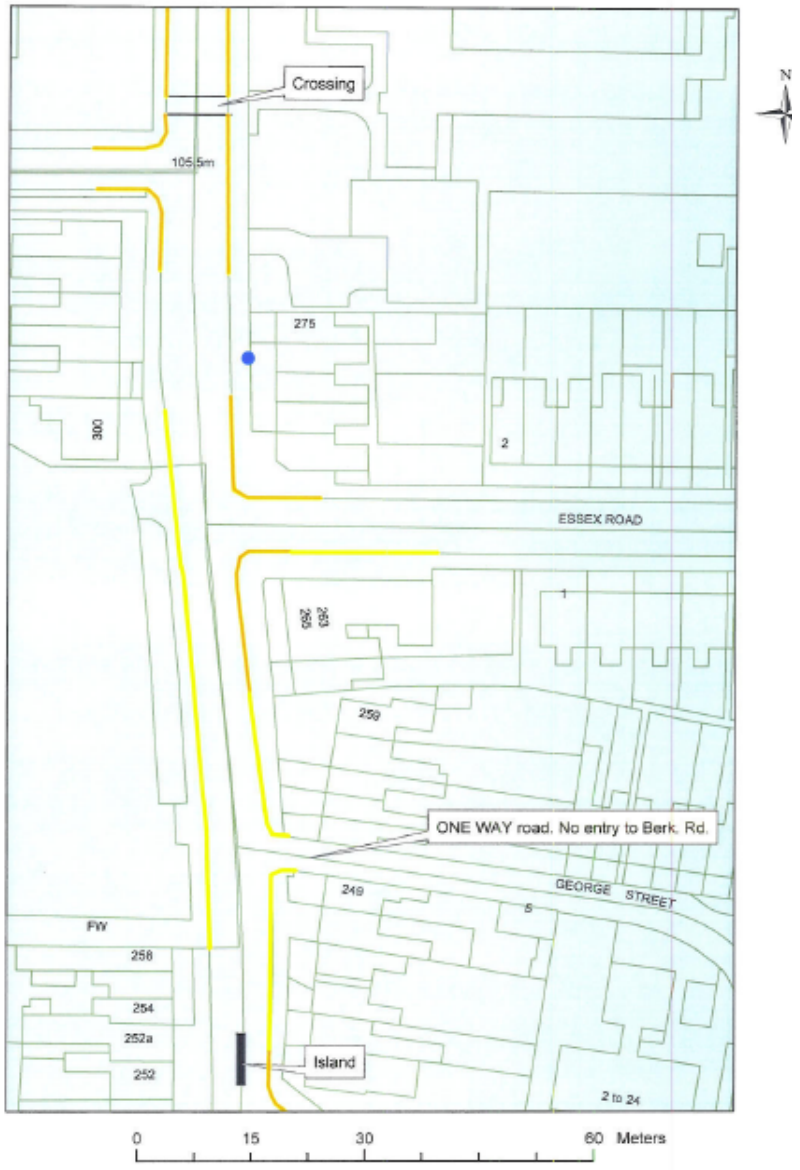




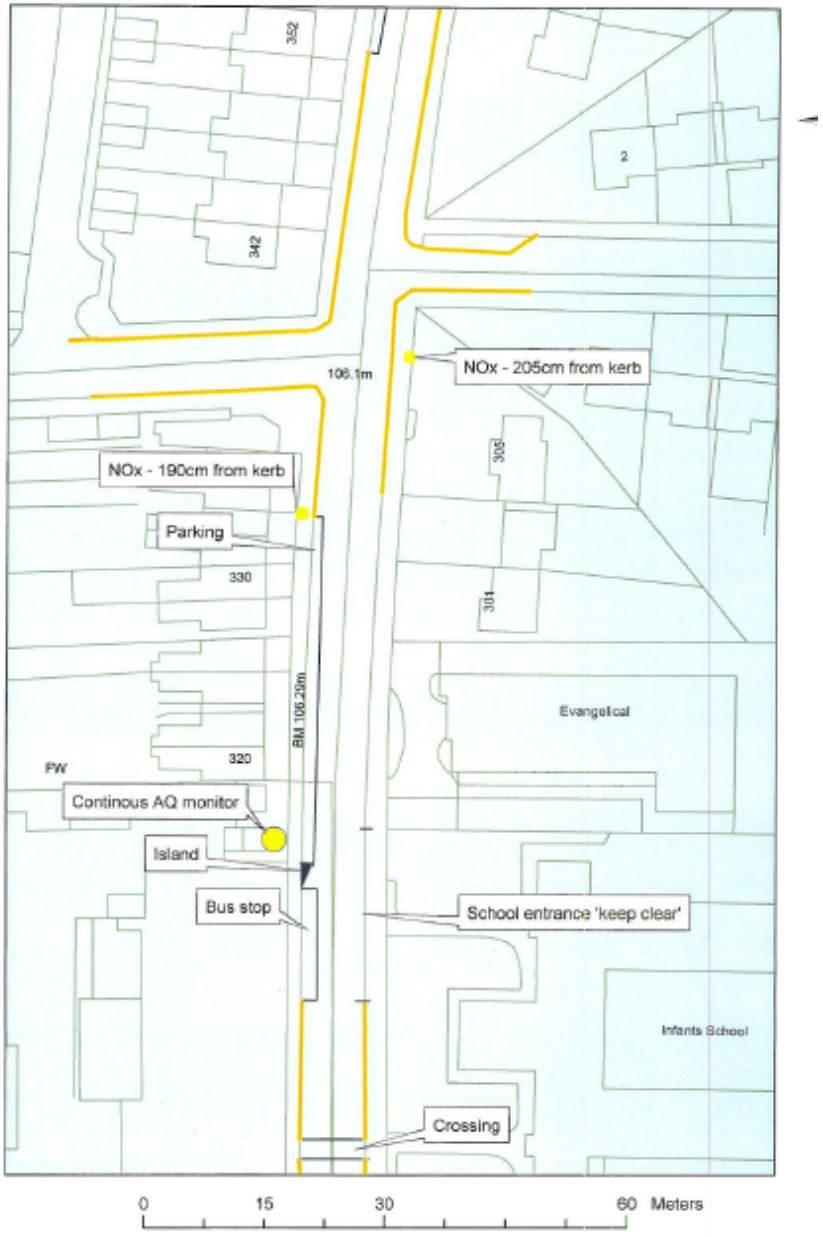
AQ Review & Assessment - Berkhampstead Road, Chesham



AQ Review & Assessment - Berkhampstead Road, Chesham



AQ Review & Assessment - Berkhampstead Road, Chesham



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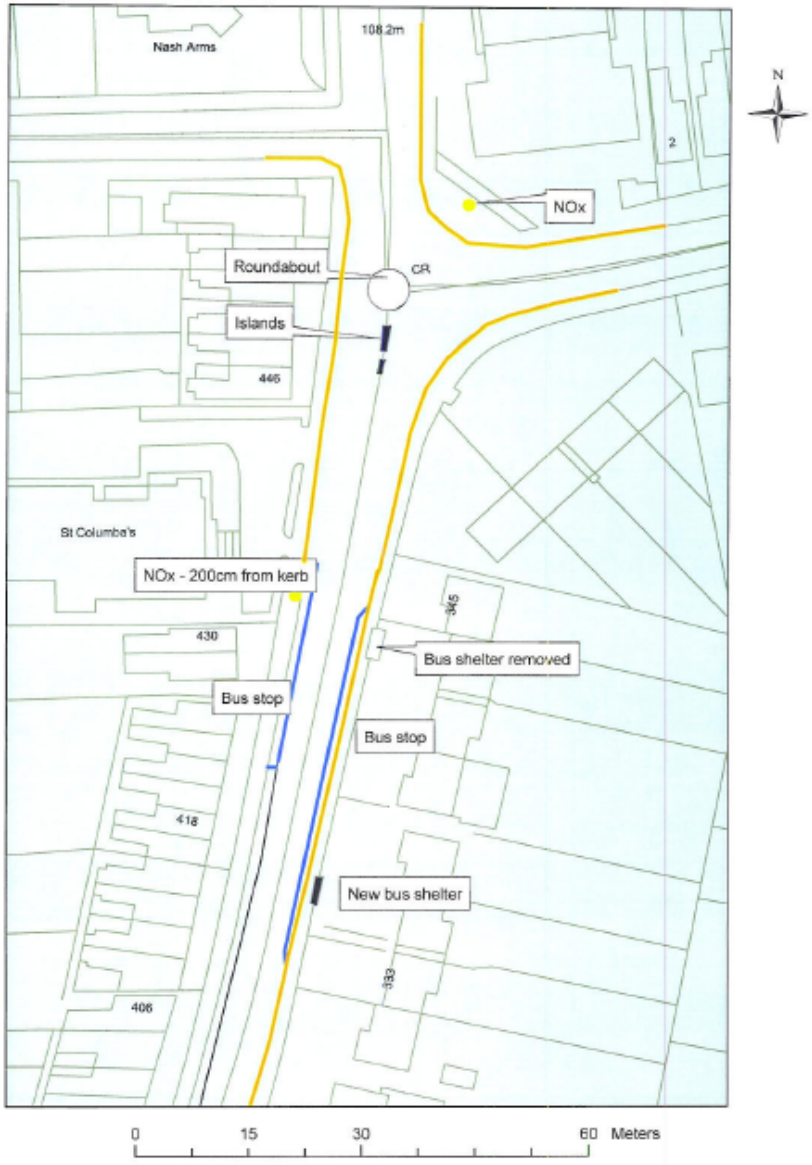

ASSOCIATED CHILTERN DOCUMENTS (All available to download from www.chiltern.gov.uk/claire)

- Review & Assessment Stages 1 and 2 Review & Assessment
- Review & Assessment Stage 3 Review & Assessment
- Review & Assessment Updating & Screening Assessment 2003
- Review & Assessment Updating & Screening Report - DEFRA Feedback (Aug 2003)
- Review & Assessment Progress Report 2004
- Review & Assessment Progress Report 2005
- Review & Assessment Updating & Screening Assessment 2006
- Review & Assessment Detailed Assessment 2007
- Review & Assessment AQMA Designation 2007
- Review & Assessment Progress Report 2008

REFERENCES:

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Department of the Environment, Transport and the Regions (2000) 'LAQM.G1(00) - Framework for Review and Assessment of Air Quality'
Department of the Environment, Transport and the Regions (2000) 'LAQM.G2(00) - Developing Local Air Quality Action Plans and Strategies'
Department of the Environment, Transport and the Regions (2000) 'LAQM.G3(00) – Air Quality and Transport'
Department of the Environment, Transport and the Regions (2000) 'LAQM.G4(00) – Air Quality and Land Use Planning'
National Society for Clean Air (2000) 'Air Quality Action Plans: Interim Guidance for Local Authorities'
National Society for Clean Air (2001) 'Air Quality: Planning for Action'