



Calderdale Air Quality Management Area No.3 Hebden Bridge

Consultative Draft Action Plan

A requirement under Part IV of the Environment Act 1995

February 2008

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EXECUTIVE SUMMARY

This document sets out the Council's draft Air Quality Action Plan for Calderdale Air Quality Management Area No.3 along the A646 corridor through Hebden Bridge. The Air Quality Management Area was declared because assessments of air quality showed that the annual mean air quality objective for nitrogen dioxide (NO₂) of 40 microgrammes per cubic metre (µg/m³) would not be met by the target date of December 2005. A further detailed assessment of the Air Quality Management Area during 2007, found that the annual mean concentration of NO₂ here was in the region of 48µg/m³, against an estimated background concentration in the Hebden Bridge area in 2006 of 23.6µg/m³. This excess of NO₂ over the local background level is assumed to derive mainly from vehicular traffic.

The Council has a statutory duty under sections 84(2)(b) and (3) of the Environment Act 1995 to 'prepare a written plan ('Action Plan') for the exercise by the authority, in pursuit of the achievement of air quality standards and objectives in the designated area, of any powers exercisable by the authority'. This Draft Air Quality Action Plan identifies a programme of potential actions, measures and initiatives designed to achieve the objectives, explores how they interface with the Local Transport Plan, and provides estimates of costs and timescales within which the local authority could implement them. It anticipates that implementation would be over a number of years and identifies a need for intermediate outcome targets to be assessed against the baseline data in order to monitor the effectiveness of the actions in working towards the overall air quality objectives.

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INTRODUCTION

The main reason for tackling poor air quality is to address its impact upon health and quality of life. Its effects are felt particularly by the most vulnerable members of society such as the very young, the elderly and those already suffering from other health conditions. It is also damaging to the local economy. Poor air quality can result in loss of working days, reduced productivity, increased absenteeism from school and a drain on national health resources.

LEGISLATIVE BACKGROUND

Part IV of the Environment Act 1995 places a statutory duty on a local authority to carry out a process of review and assessment of air quality in its area against objectives for eight pollutants, prescribed in the Air Quality (England) Regulations 2000 and subsequent amendment (2002). One such objective is that the annual mean level of NO₂ should not exceed or be likely to exceed 40µg/m³ as at December 2005. Where it is considered that an air quality objective will not be achieved by the target date, the local authority must declare an Air Quality Management Area (AQMA) relevant to that pollutant and area of its district.

Where an AQMA has been declared section 84(2)(a) of the Act requires the local authority to prepare a Further Assessment Report of the existing and likely future air quality and of the respects in which it appears that the objective will not be met. Sections 84(2)(b) and (3) further require the preparation of a written Air Quality Action Plan (AQAP) in pursuit of the achievement of the air quality objective within the AQMA and Schedule 11 of the Act requires the local authority to undertake public consultation on this Action Plan.

A series of reports discussing and assessing air quality across Calderdale have been published and remain available for inspection on the Calderdale Council web-site and at the Council's offices at Northgate House, Halifax.

In 2005 it was noted that levels of NO₂ along the A646 corridor in Hebden Bridge town centre were in part exceeding or likely to exceed the annual mean air quality objective. During Spring 2006 the Calderdale Air Quality Management Area No.3 was declared, taking effect on 1st September 2006. The Further Assessment Report for the Hebden Bridge AQMA was published in September 2007 and is available for inspection as above.

The contents of this Draft AQAP reflect the statutory Local Air Quality Management Policy Guidance (LAQM.PG(03) and LAQM.PG(A)05) and the non-statutory guidance of the National Society for Clean Air. It identifies a programme of potential actions, measures and initiatives designed to achieve the air quality objectives, explores how they interface with the Local Transport Plan, and provides estimates of costs and timescales within which the local authority could implement them. It anticipates that implementation would be over a number of years and identifies a need for intermediate outcome targets to be assessed against the baseline data in order to monitor the effectiveness of the actions in working towards the overall air quality objectives.

Although the AQAP reflects varied proposals which could be considered and progressed at national, regional and local level in pursuit of the objective to address air quality on the A646 corridor in Hebden Bridge, the plan demonstrates a balanced approach with appropriate and proportionate measures, realistically assessed for cost effectiveness and relevant for this AQMA. To maintain this balance and relevance section 84(4) of the Act permits the Council to revise the action plan from time to time.

LOCAL TRANSPORT PLAN

Road transport is a major source of local air pollution, particularly in urban areas, and road traffic accounts for a major part of the total emissions of oxides of nitrogen and particles (PM₁₀). Guidance from DEFRA recommends that where road transport and traffic emissions are the largest single contributor to pollution in the AQMA, local authorities are advised to co-ordinate AQAPs with the Local Transport Plan (LTP).

The second West Yorkshire Local Transport Plan (LTP2) has been prepared by the five district authorities and Metro, the Passenger Transport Authority, and sets out a five-year strategy for the co-ordination and improvement of transport (2006-2011). It contains five 'shared priority' objectives: delivering accessibility; tackling congestion; safer roads; better air quality; and improving the quality of the street environment. Investment in transport schemes through LTP2 is assessed against these priorities.

The air quality strategy comprises the following elements:

- AQ1 Traffic demand management measures, focusing on commuter journeys;
- AQ2 Encouraging more sustainable travel;
- AQ3 Actions to reduce vehicle emissions; and
- AQ4 Measures to adapt to the effects of climate change.

It is considered that implementation of these measures will have a significant bearing upon the achievement of air quality objectives. Measures identified to address other priorities may also impact upon air quality, some beneficial but others not so. A process of continual assessment will identify forecast changes in air quality, and schemes and initiatives will be amended accordingly to minimise any negative effects.

LTP Environmental Report

A Strategic Environmental Assessment (SEA) became a mandatory requirement for LTPs in July 2004. The aim of the SEA is 'to provide a high level of protection of the environment and to ensure the integration of environmental considerations, when developing regulations that apply to a number of plans and programmes' (including the LTP).

A set of sixteen SEA objectives has been developed to assess the impact of the developing LTP2 upon the environment. The environmental baseline describes the current and likely future environment and is structured around the SEA objectives, describing the relationship of these objectives to local transport. The baseline information is reviewed annually as part of the SEA monitoring framework to allow any changes in the environment to be identified.

The SEA for LTP2 is included in the LTP Appendices with an Environmental Report and a Non-Technical Summary produced as separate documents (June 2006).

CALDERDALE AIR QUALITY MANAGEMENT AREA (No.3): A646 BANKFOOT – BRIDGE LANES – MARKET STREET – NEW ROAD – BURNLEY ROAD, HEBDEN BRIDGE

Factors leading to the declaration of AQMA (No.3) Hebden Bridge

In simple terms, nitrogen dioxide pollution arises from chemical reactions in the atmosphere, whereby oxides of nitrogen (NO_x) from combustion processes, such as in vehicle engines, are converted to nitrogen dioxide (NO₂) and nitric oxide (NO).

The declaration of AQMA No.3 Hebden Bridge was based upon comparison between measured data from air quality monitoring sites during 2005 and computer model predictions of likely air quality based upon such factors as traffic flow and composition, weather and topography. Both methods are subject to inherent inaccuracies. Monitoring data from 2005 was only available for a limited period and also affected by unusually high levels of background NO₂ experienced across the region. This necessitated a crude correction of data using information based upon a similar monitoring site in Halifax.

The computer model used regional weather datasets which may not be representative of local conditions. There are uncertainties as to how representative the model was of local topography and buildings and how air pollutants are dissipated. Traffic data was based upon available vehicle count data from a number of survey points outside Hebden Bridge during 2004 and 2005. However it is difficult to replicate the actual dynamic of traffic speeds, acceleration, deceleration and congestion, particularly over discrete stretches of road. Similarly, there are certain inaccuracies in the prediction of traffic volume and composition on a particular day or time and the model can only make a crude distinction between 'heavy' (e.g. HGV and PCV) and 'light' vehicles (e.g. car, taxi and light goods). Finally the algorithm within the modelling software assumed that a given quantity of NO_x will convert to a given quantity of NO₂ whereas it can be argued that this is not necessarily the case.

Despite these uncertainties model outputs were comparable to the measured data and it was considered that sufficient information existed to show that NO₂ levels were likely to exceed the objective of 40µg/m³. Consequently the AQMA was declared, taking effect from 1st September 2006.

Principal findings of the Further Assessment Report, September 2007

The Further Assessment Report analyses more detailed air quality monitoring data collected throughout 2006 and 2007 and confirms that the extent of the AQMA is defined correctly. A small number of locations are identified where NO₂ levels appear lower than expected but it proposes that the AQMA boundary should not be changed as the local highway network is currently undergoing a process of revision through the Hebden Bridge District Centre Traffic Review.

The Report goes on to determine a representative background NO₂ concentration for the AQMA based upon local measurement, which is assumed to include emissions from local major boiler plant and small industrial units. Using statutory guidance in LAQM.TG(03), measured NO_x levels from the 'Romon 3' electronic monitor on Market Street and a ratio of background NO_x to NO₂ (source: Barnsley MBC) a calculation of the proportion of NO_x and NO₂ attributable to road traffic can then be made (Fig.1).

Fig.1: Apportionment of NO_x and NO₂ emissions 2006, Hebden Bridge

Measured data gives the following:

- **local annual mean background NO₂ for 2006 is 23.6µg/m³**
- Measured NO_x at Romon 3 at Market Street, Hebden Bridge for 2006 is 164µg/m³
- **ratio of background NO_x to NO₂ is assumed as 28µg/m³ NO_x to 19µg/m³ NO₂ (source: Barnsley MBC).**

From these we can derive the following:

- **mean background NO_x level is estimated at 34.8µg/m³**
[i.e. 23.6 x 28/19_(Barnsley NO_x/NO₂ ratio)]
- road traffic NO_x contribution at Romon 3 is 129.2µg/m³
[i.e. 164 NO_{x (total, Romon 3)} - 34.8 background NO_x]

LAQM.TG(03) guidance gives: $NO_{2(road)} = ((-0.068 \times \ln(NO_{x(total)})) + 0.53) \times NO_{x(road)}$. Thus, where $NO_{x(total)} = 164\mu\text{g}/\text{m}^3$ and $NO_{x(road)} = 129.2\mu\text{g}/\text{m}^3$:

- **NO₂ road traffic contribution at Romon 3 is 23.7µg/m³**
- **the calculated total NO₂ at Romon 3 is 47.3 µg/m³**

In 2006 the calculated A646 road traffic contribution at Romon 3 of 23.7µg/m³ represents **50.1% of the recorded total NO₂, and 78.8% of the total NO_x.**

By projecting background levels to 2010 (Fig.2) the same methodology can be used to see what reductions in levels are necessary to achieve the air quality objective of 40µg/m³. The model suggests that if the necessary NO₂ reduction is to be solely from changes to road traffic then road NO_x emissions must reduce by 28.2%, from 129.2µg/m³ to 92.8µg/m³ by 2010.

Fig.2: Projection of NO_x and NO₂ emissions to 2010, Hebden Bridge

- **forecast local annual mean background NO₂ for 2010 is 21.1µg/m³**
- **forecast ratio of background NO_x to NO₂ is 23.5µg/m³ NO_x to 17µg/m³ NO₂**

From this we can derive:

- **the forecast mean background NO_x level in 2010 is 29.2µg/m³**
[ie 21.1 x 23.5/17_(Barnsley NO_x/NO₂ ratio)]

The air quality objective for NO₂ is 40µg/m³ and therefore:

- **23.7µg/m³ NO₂ road traffic contribution at Romon 3 in 2006 must reduce to 18.9µg/m³ by 2010 to achieve the AQO of 40µg/m³**
[ie 40 NO_{2(total)} - 21.1 NO_{2(background)}]
- **Using LAQM.TG(03) guidance the value of total NO_x due to road traffic equating to 18.9µg/m³ NO₂ is 92.8µg/m³**
- **Total NO_x at Romon 3 in 2010 is 122µg/m³**
[i.e. 92.8+29.2]

In 2010 a road traffic NO₂ contribution of 18.9 µg/m³ would represent **47.2% of the air quality objective of 40µg/m³ NO₂ and 76.1% of the total NO_x**

In order to comply with the air quality objective by 2010 **total NO_x at Romon 3 must fall 42µg/m³ from 164µg/m³ to 122µg/m³, a reduction of 25.6%**

If the necessary NO₂ reduction is to be solely from changes to road traffic then **road NO_x emissions must reduce by 28.2%, from 129.2µg/m³ to 92.8µg/m³ by 2010**

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By re-running the model the effects of various scenarios upon levels of NO₂ at monitoring locations throughout the AQMA are tested e.g. removing heavy vehicles; changes in traffic speed; no congestion; reducing traffic volume. The model suggests that the 6% of traffic comprising 'heavy' vehicles (HGV and PCV) accounts for between 12% and 24% of NO₂ emissions. Improvements in traffic flow to remove congestion could reduce NO₂ by between 7% and 21%. The report notes the presence of queuing traffic throughout the day with particularly severe congestion occurring when traffic diverts from the M62 motorway. The greater savings would appear to be possible where the A646 narrows and the buildings form a 'street canyon'. Other factors appear to have markedly less effect. Tackling both heavy vehicles and congestion together would appear to offer the most significant reductions in NO₂ of between 12% and 36% over 2006 levels.

There is no suggestion that the set of scenarios tested is comprehensive. More complex models could be set up to vary several parameters together, but it is clear that heavy vehicles and traffic congestion appear to have the greatest impact upon levels of NO₂. A comparison of traffic flow by vehicle type, travel mode make-up and vehicle emission levels are depicted below (Figs.3 to 5).

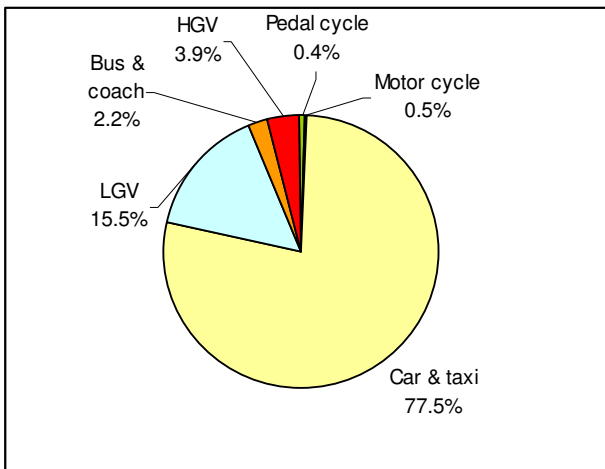


Fig.3: Traffic flow by vehicle type, A646 corridor, Hebden Bridge

The majority of road vehicle movements through AQMA No.3 are cars, taxis and light goods, comprising 93% of all traffic. Bus, coach and heavy goods vehicle account for only 6.1% over a typical 24 hour weekday period.

Figures are based on classified traffic counts on the A646 between Hebden Bridge and Mytholmroyd in June 2004.

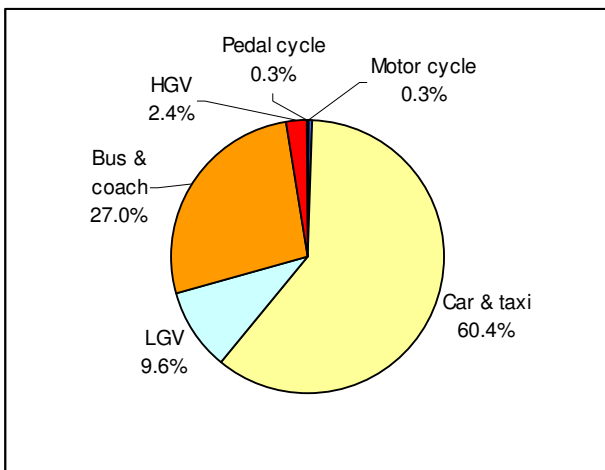


Fig.4: Proportion of people by vehicle type

Figures are based on average car occupancy of 1.26 persons and average bus occupancy of 20 as recorded from the base modal split survey carried out in May 2004.

Indications are that 70% of people passing through the AQMA travel by car, taxi or light goods vehicle and almost 30% travel by bus, coach or heavy goods vehicle.

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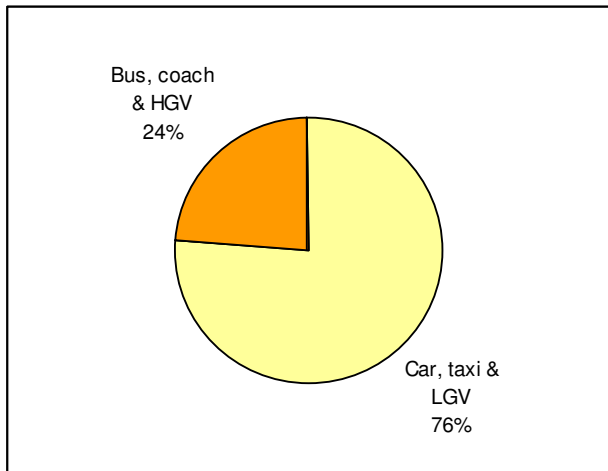


Fig.4: Emissions by vehicle type

Air quality modelling suggests that the 6.1% of road traffic classed as 'heavy vehicles' contributes up to 24% of NO₂ emissions in those parts of the AQMA that suffer from the poorest air quality.

It is anticipated that legislation will continue to promote tighter emission standards for new vehicles, cleaner fuels, sustainable distribution of freight and to provide incentives regarding low emission vehicles, all of which should contribute to a general reduction in emissions. However the government's revised Air Quality Strategy (July 2007) does not expect levels of NO₂ to fall as quickly as previously thought due to both an overall increase in road traffic and an increase in road traffic NO_x being directly emitted as NO₂. As a result the Report suggests that the reduction in emissions projected by the model may be optimistic and that more significant intervention may be necessary to achieve the air quality objective.

The Report notes the significant rise in commuter traffic over recent years. Census data shows that between 1991 and 2001 commuting to work from Hebden Bridge to other parts of Calderdale increased by 65% and commuting to Hebden Bridge from other parts of Calderdale increased by 72%. Similarly travel to work journeys between Calderdale and Greater Manchester and the North West increased by 60% outbound and 54% inbound. These statistics give a broad indication of traffic growth but the Report identifies a need for a greater understanding of the numbers and patterns of journeys being made from, to, through and within Hebden Bridge in order for any effective interventions to be planned.

Declaration of an AQMA also has implications regarding planning policy but the Report identifies a potential weakness in that although development in the area could be restricted on the grounds of potential generation of increased air pollution (including from traffic generation) there is a lack of guidance on development that results in increased exposure to existing air pollution (e.g. change of use to a café, provision of living quarters above a shop etc.).

The findings of the Further Assessment provide the basis for this draft Air Quality Action Plan, which outlines a package of measures and initiatives considered appropriate for reducing pollution along the A646 corridor in Hebden Bridge.

Air Quality Action Plan

Sections 84(2)(b) and (3) of the Environment Act 1995 require the preparation of a written Air Quality Action Plan (AQAP) in pursuit of the achievement of the air quality objective within the Hebden Bridge AQMA. The Plan reflects the statutory Local Air Quality Management Policy Guidance (LAQM.PG(03) and LAQM.PG(A)05) and the non-statutory

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guidance of the National Society for Clean Air ('Air Quality Action Plans: Interim Guidance for Local Authorities' and 'Air Quality: Planning for Action' (June 2001)).

a. Action Plan Aims and Scope

This Action Plan aims to minimise relevant exposure to poor air quality within Calderdale AQMA No.3 Hebden Bridge and to pursue / achieve the air quality objective of $40\mu\text{g}/\text{m}^3$ of NO_2 .

Development of the Action Plan starts from the premise that the excess of NO_2 over the local background level in Hebden Bridge derives mainly from vehicular traffic. There are a number of key objectives that must be addressed if the aims are to be achieved:

- Achieve a better understanding of the causes behind the current poor air quality with particular reference to patterns of traffic flow and travel demand from, to, through and within Hebden Bridge;
- Raise awareness of poor air quality and its causes and effects;
- Identify and engage with stakeholders, including the local community, and seek active participation in a joint search for solutions;
- Identify a package of practical and achievable measures consistent with the aims of the Plan. These may address a broad range of issues such as:
 - ~ Changes to the highway network
 - ~ Travel demand management
 - ~ Travel choice
 - ~ Vehicle technology
 - ~ Planning policy - both to restrict / prevent growth in air pollution and to restrict relevant exposure to poor air quality.
- Provide indicative levels of costs and benefits to enable prioritisation;
- Establish a monitoring regime to measure progress and indicate areas where corrective action is required.

It is essential that the Plan demonstrates a high degree of confidence that the proposals will have a positive impact on air quality within the AQMA. Proposed actions aimed at reducing NO_2 levels may also lead to a reduction in other pollutants, including the greenhouse gas carbon dioxide, so delivering wider benefits and contributing to the core objectives of the Local Transport Plan and national transport and environmental objectives, in particular road safety and climate change targets.

b. Actions and outputs

A programme of actual and potential measures to address poor air quality and achieve the key objectives is outlined below. This is a combination of existing measures already being progressed through the Local Transport Plan and other programmes plus other new proposals for consideration. The Schedule of Actions and Initiatives examines these in greater detail with reference to stakeholder involvement, indicative levels of cost and potential impact.

Information gathering

- Continued monitoring of air quality;

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- Traffic counts and modal split surveys;
- Travel demand, origin and destination surveys;
- Examination of different access needs – shoppers, businesses, residents etc;
- Air quality modelling – including improved sourcing of emissions;
- Traffic modelling.

Stakeholder engagement

- Information campaign - raise awareness of poor air quality, causes, effects and need for management;
- Identification and engagement of stakeholders - those who can influence air quality, those who can influence levels of exposure, those who are affected by poor air quality;
- Establish local partnership / joint working to seek and implement solutions.

Measures to address poor air quality

Changing / managing the highway network:

- Modification of road alignments / geometry;
- Management of traffic flows:
 - ~ Area-based speed reduction (e.g. 20 mph zones)
 - ~ Improved enforcement of existing speed limits
 - ~ Intelligent traffic signals (Urban Traffic Management & Control)
 - ~ Traffic queue relocation
- Road space reallocation:
 - ~ Bus lanes
 - ~ High Occupancy Vehicle lanes.

Travel demand management

- Car-parking supply and pricing;
- De-criminalised parking enforcement;
- Access management - on-street deliveries;
- Road user charging.

Provision and promotion of alternative travel options

- West Yorkshire Bus Partnership – improved infrastructure and services;
- Rail – improved infrastructure and services;
- ‘Park & Ride’ – bus or rail;
- Ticketing initiatives;
- Walking and Cycling – infrastructure and promotion;
- West Yorkshire Travel for Work Partnership:
 - ~ Workplace Travel Plans
 - ~ Personalised Journey Planning
- Car-share and car clubs;
- School Travel Plans and ‘Safer Routes to School’.

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Traffic emissions

- Vehicle maintenance - roadside emissions testing;
- Promotion / incentives for use of cleaner fuel technologies;
- Bus emissions - regulation (emissions standards in contracts);
- Promote / assist freight emissions agreements;
- Pilot schemes using alternative vehicles and fuels;
- Scrapping incentives for older vehicles;
- 'Low Emission Zone'.

Planning policy

- Better alignment of planning development control policy with air quality management issues;
- Supplementary planning guidance to assist with air quality assessments of development proposals;
- Work with developers to improve sustainable transport links serving new developments.

Monitoring and assessment

- Regular progress reports available to public:
 - ~ Actions in progress;
 - ~ Air quality monitoring reports;
 - ~ Impact assessment;
 - ~ Ongoing consultation.

c. Implementation

Timescales

The Schedule gives an indication of the timescale over which the identified actions could be delivered. Some initiatives are already ongoing including a number being progressed through the LTP programme. Measures that are projected to yield the greatest impact in improving air quality are anticipated to be longer term aspirations, particularly with regard to the more extreme measures such as roadside emissions testing or imposition of a Low Emission Zone, and will require much more detailed analysis and assessment. A number of simple, low-cost measures are identified that could potentially deliver smaller benefits in a relatively short space of time.

Ongoing initiatives

- A package of measures developed through the Hebden Bridge Traffic Review is currently approaching completion. The package was developed following extensive consultation and studies of traffic and pedestrian movements and includes a wide range of measures including changes to traffic management and circulation, traffic calming, revisions to on- and off-street parking and pedestrian improvements.
- Hebden Bridge Rural Bus Challenge has introduced a range of improvements to local bus services and infrastructure including frequent minibus connections between the outlying parishes, the town centre and the railway station.

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- The second West Yorkshire Local Transport Plan (LTP2) has set out a wide range of improvements to further develop a more sustainable transport system, reduce vehicle emissions and improve air quality in areas worst affected by pollution, increase bus priority, accessibility and encourage modal shift towards greater use of public transport, and provide for cycling and walking.
- Metro's Bus Strategy (2006-2011) forms a part of LTP2 and sets out a 20-year vision for public transport and its contribution to the shared priority of better air quality and the objective to limit transport emissions of air pollutants, greenhouse gases and noise.
- West Yorkshire Bus Partnership brings together Metro, the five West Yorkshire Districts and local bus operators. It is committed to providing high quality bus services and facilities, including information and promotion, on high frequency core bus routes such as the A646 through Hebden Bridge.
- First in Calderdale is the major bus operator along the A646 corridor and runs its fleet on a 95% standard diesel / 5% bio diesel mix.

Costs / funding

It is estimated that the package of measures and initiatives identified as either 'ongoing' or 'short term' in this plan, which may have a direct or indirect effect on the air quality in AQMA No.3, will cost in the region of £95,000 up to and including year 2008/09. This figure does not include the preliminary costs associated with medium or long-term measures, such as a Low Emission Zone, or some of the more extensive initiatives requiring National Government legislation.

Guidance suggests that transport measures should be funded through the LTP process though this may require supplementary bids to progress medium priced schemes in view of the level of indicative Capital allocation in LTP2. The annual Revenue costs are considered to be in the region of 2% of the total costs for works carried out through the Capital programme, for the life of the improvements.

The ability to implement the AQAP depends on securing adequate and consistent levels of Capital and Revenue funding. If adequate funding cannot be secured then the AQAP measures will have to be scaled down to reflect available funding and consequently the effectiveness of the plan in tackling pollution may be reduced. An annual report will monitor and assess progress and identify any remedial or additional actions to be taken.

d. Forecasting of benefits / methodology

In order to assess the potential impact of measures being proposed some indicative figures for the contribution of types of vehicles and the effects of queueing traffic to overall emissions have been derived based upon the different scenarios modelled in the Further Assessment Report. For example the removal of all 'heavy' vehicles from the A646 Hebden Bridge corridor gave a predicted emission level of $36.7\mu\text{g}/\text{m}^3$ NO_2 , a reduction of 24% over the 'all traffic' (modelled) levels of $48.7\mu\text{g}/\text{m}^3$.

Examination of diurnal profiles of NO_2 concentration and other data based evidence suggest that it is morning peak period commuter traffic that makes the most significant contribution to poor air quality. Using the proportions derived above and morning peak traffic counts (0730 to 0930) from Traffic Census Point 17360 east of Hebden Bridge an indicative 'emissions per vehicle' figure may be derived.

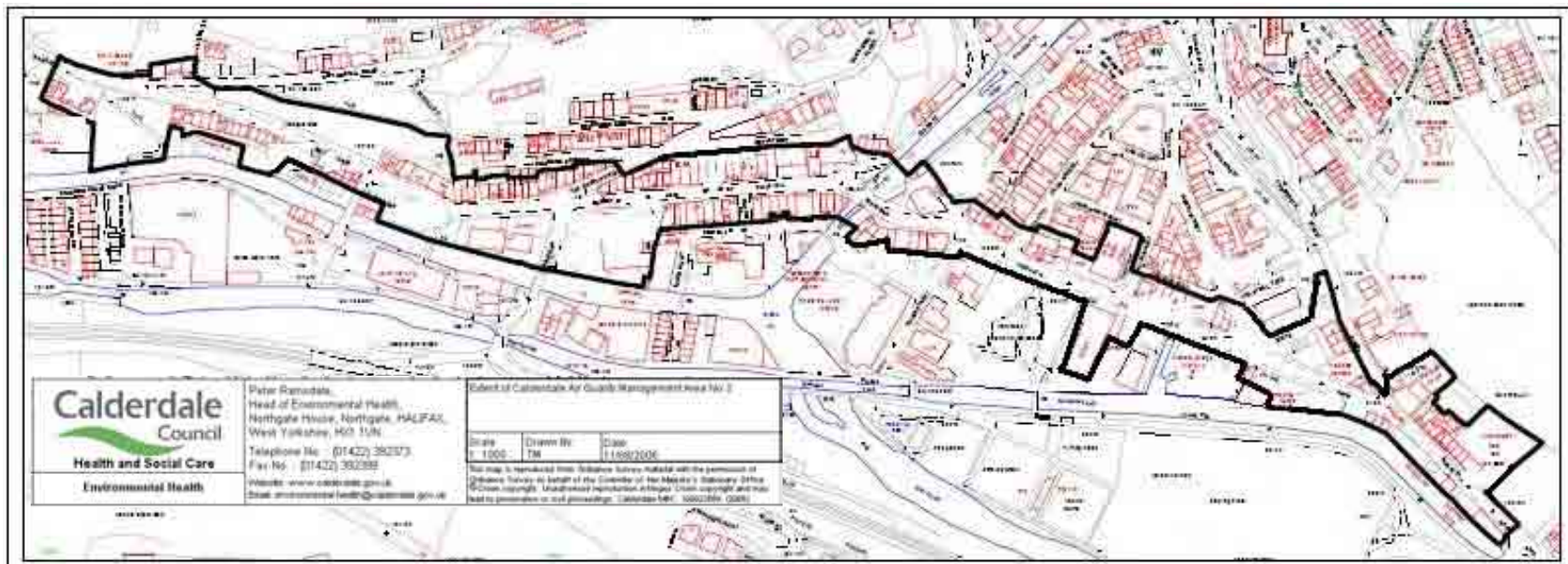
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With 2840 private cars, taxis and LGV's on the A646 in Hebden Bridge town centre during the morning peak contributing towards approximately $71\mu\text{g}/\text{m}^3$ of NOx it is assumed an average of $0.03\mu\text{g}/\text{m}^3$ NOx is developed by each vehicle passing through the AQMA. Using a similar assessment for the 158 HGV's and 84 PCV's passing through the AQMA during the period, this group produces $31\mu\text{g}/\text{m}^3$ of NOx at an estimated average of $0.13\mu\text{g}/\text{m}^3$ NOx for each HGV or PCV.

It is not suggested that this methodology accurately reflects the relative contributions of individual vehicles to overall levels of emissions but in the absence of any further guidance these would seem to be reasonable assumptions upon which to base the assessment of each intervention.

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Extent of Calderdale Air Quality Management Area No.3 Hebden Bridge



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KEY TO SCHEDULE

Lead roles / responsibility

WYLTP SG	West Yorkshire Local Transport Plan - Steering Group
CMBC ES	Calderdale Metropolitan Borough Council – Engineering Services
CMBC PS	Calderdale Metropolitan Borough Council – Planning Services
CMBC EH	Calderdale Metropolitan Borough Council – Environmental Health
Metro	West Yorkshire Passenger Transport Executive
Operators	Public Transport Operators
PCT	Calderdale Primary Care Trust
DfT	Department for Transport
DEFRA	Department for Environment Food and Rural Affairs
GOYH	Government Office for Yorkshire and the Humber
FTA	Freight Transport Association
FQP	Freight Quality Partnership

Potential Air Quality Impact on AQMA

Low	Will only have an impact if other complementary measures are implemented. Assumed saving between 0 and 0.45 $\mu\text{g}/\text{m}^3 \text{NO}_x$
Medium	Likely to have some impact on air quality with or without other complementary measures. Assumed saving between 0.5 and 1.95 $\mu\text{g}/\text{m}^3 \text{NO}_x$
High	Expected to have a significant impact without other complementary measures. Assumed saving between 2 and 5 $\mu\text{g}/\text{m}^3 \text{NO}_x$

Timescale / status

Ongoing	Already underway, or programmed in the current financial year
Short term	Planned within the next two years
Medium term	Planned between the next two to five years
Long term	Between five and ten years but not in a current plan or programme

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Cost

Low	Implement as part of a scheme or initiative in the LTP programme, or as a separate scheme or initiative less than £25,000
Medium	Implement as a single or a number of separate schemes or initiatives between £25,000 - £99,000
High	Implement as a separate scheme or initiative between £100,000 - £500,000
Very high	Implement as a separate scheme or initiative over £500,000

LTP2 Core strategy approaches

Better Air Quality

AQ1	Traffic demand management measures, focusing on commuter journeys;
AQ2	Encouraging more sustainable travel;
AQ3	Actions to reduce vehicle emissions;
AQ4	Measures to adapt to the effects of climate change

Delivering Accessibility

A1	Improve physical accessibility by making public transport more accessible, and by improving the continuity and signage of cycle and walk routes
A2	Maintain and improve road, pavement and Rights Of Way (ROW) conditions for pedestrians, cyclists, vehicle and freight users
A4	Maintain and develop public transport networks through our bus and rail strategies
A6	Raise awareness of public transport and improve and target information and marketing
A7	Embed accessibility in other strategies such as LDFs, health, education, social services and leisure strategies

Tackling Congestion

C1	Encourage modal switch to public transport;
C2	Manage the demand for travel;
C3	Make the best use of existing capacity;
C4	Improve the highway network;
C5	Encourage more cycling and walking;
C6	Promote smarter choices in travel;
C7	Promote sustainable land use planning policies and practices

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Safer Roads

- | | |
|----|--|
| S1 | Provide an appropriate road environment with facilities for each user group |
| S2 | Provide the relevant skills for driving, riding, walking and cycling |
| S3 | Promote awareness of road safety issues and the road user's responsibility to others |
| S4 | Encourage the correct behaviour of all road users |
| S5 | Improve safety through new technologies that can reduce the risk of injury |

The actions and initiatives in the following tables are only indicative of scheme proposals which could be considered and progressed at national, regional and local level to address the air quality management on the A646 corridor in Hebden Bridge following the statutory consultation process and inclusion in an approved programme.

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Action / initiative	Lead roles / responsibility	Potential air quality impact on AQMA	Anticipated reduction in NO _x (µg/m ³)	Other effects (including non-air quality impacts)	Timescale / status	Cost
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A: GENERAL

GENERAL	LTP2 Air Quality core strategy AQ1, AQ2, AQ3					
Aims and objectives in the West Yorkshire Local Transport Plan (LTP2)	WYLTP SG GOYH CMBC ES CMBC PS Metro	Low	0.15	Improved accessibility; Reduced congestion; Safer roads; Improved public transport; Increased sustainable travel options	Ongoing	Low - medium
	Other LTP2 core strategic elements A1, A4, A6, C1, C3, C4, C5, C6, S1, S2					
Develop a comprehensive traffic model for Hebden Bridge to determine the amount of local and through traffic	CMBC ES			Reduced congestion; Safer roads; Improved public transport	Short term	High
	Other LTP2 core strategic elements C1, C3, C4, C5, C6, C7					
Increase the provision of air quality information passed into the public domain at national, regional and local level	DfT DEFRA WYLTP SG CMBC EH CMBC ES PCT	Low	0.15	Reduced congestion	Short term	Low - medium
	Other LTP2 core strategic elements A6, C1, C5, C6					
Comment: A comprehensive 'origin and destination' survey and roadside interviews are a requirement in quantifying the levels of traffic accessing Hebden Bridge town centre and passing through to other destinations; Development of an appropriate model will assist in the assessment of potential interventions consistent with the aims of the AQAP						

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Action / initiative	Lead roles / responsibility	Potential air quality impact on AQMA	Anticipated reduction in NO _x (µg/m ³)	Other effects (including non-air quality impacts)	Timescale / status	Cost
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B: ALTERNATIVE TRANSPORT

SUSTAINABLE TRAVEL	LTP2 Air Quality core strategy AQ1, AQ2, AQ3					
Continue to implement CMBC Travel Plan and encourage other employers in Halifax and the Upper Calder Valley to develop travel plans	CMBC PS	Low	0.1	Healthier lifestyles through walking and cycling; Reduction in personal car use for travel to work; Increased public transport patronage and car-sharing	Ongoing	Low
	Other LTP2 core strategic elements A6, C1, C5, C6					
Travel to Work Project, working with Yorkshire Forward to support employers and promote sustainable travel options	CMBC PS	Low	0.2	Healthier lifestyles through walking and cycling; Reduction in personal car use for travel to work; Increased public transport patronage and car-sharing	Ongoing	Low
	Other LTP2 core strategic elements A6, C1, C5, C6					
Continue to implement a Safer Routes to School programme of measures and initiatives specifically targeting schools and catchments in the area)	CMBC ES	Low	0.15	Contribute to overall emission reduction throughout the district; Reduce congestion at schools; Improve road safety	Ongoing	Medium
	Other LTP2 core strategic elements A1, C1, C5, C6, S1, S2					

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Action / initiative	Lead roles / responsibility	Potential air quality impact on AQMA	Anticipated reduction in NO _x (µg/m ³)	Other effects (including non-air quality impacts)	Timescale / status	Cost
Encourage schools and education facilities to develop and encourage School Travel Plans	CMBC ES	Low	0.25	Contribute to overall emission reduction throughout the district; Reduce congestion at schools; Promote more sustainable actions and travel choice in future generations; Encourages early behavioural change; Increase social aspect of children travelling together	Ongoing	Low
Other LTP2 core strategic elements A6, C1, C2, C5, C6, S2						
Carry out travel awareness initiatives and campaigns, including targeted individualised travel planning, 'Bike Week' and 'Walk to Work Week'	CMBC ES CMBC PS	Low	0.15	Healthier lifestyles through walking and cycling; Contribute to overall emission reduction throughout the district	Ongoing	Low
Other LTP2 core strategic elements A6, C1, C2, C5, C6, S2						
Continue to promote and publicise Calderdalecarshare.com (set up by CMBC and HBoS plc to provide a free carsharing service)	CMBC PS	Low	0.2	Contribute to overall emission reduction throughout the district; Increase social aspect of people travelling together	Ongoing	Low
Other LTP2 core strategic elements C2, C6						
Introduce further car parking initiatives in Halifax town centre for carsharers. Target commuters from Hebden Bridge and the Upper Valley	CMBC PS	Low	0.1	Contribute to overall emission reduction throughout the district; Increase social aspect of people travelling together	Ongoing	Low
Other LTP2 core strategic elements C2, C6						
Investigation of support for the further development of the Hour Car Community Car Club initiative in Hebden Bridge and the Upper Valley	CMBC PS	Low	0.1	Contribute to overall emission reduction throughout the district	Short term	Low
Other LTP2 core strategic elements C2, C6						

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Action / initiative	Lead roles / responsibility	Potential air quality impact on AQMA	Anticipated reduction in NO _x (µg/m ³)	Other effects (including non-air quality impacts)	Timescale / status	Cost
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Comment:

Potential negative perception of enforced reduction in use of car;
Difficult to quantify impact;
Likely limited effect specific to the AQMA corridor

PUBLIC TRANSPORT	LTP2 Air Quality core strategy AQ1, AQ2, AQ3					
Promote and publicise benefits of public transport and provide additional information and incentives for the A646 Hebden Bridge corridor bus services	CMBC ES CMBC PS Metro	Low	0.2	Reduce congestion Contribute to overall emission reduction	Ongoing	Medium
Other LTP2 core strategic elements A6, C1, C6						
Upgrade and improve public transport infrastructure and information systems on the A646 Hebden Bridge corridor bus services	CMBC ES Metro	Low	0.1	Improvement to passenger waiting environment; Real time information systems give passengers confidence to transfer from car to public transport	Short term	High
Other LTP2 core strategic elements A1, A6, C1, C6						
Continue to develop Bus Quality partnerships with Metro and operators and target the A646 Hebden Bridge corridor bus services	Metro Operators	Low	0.1	Improved accessibility on better quality buses; Improved journey time reliability; Investigate non-pollutant bus options	Short term	High
Other LTP2 core strategic elements A1, A4, A6, C1, C6						
Ticketing improvements with 'swipe card' technology on the A646 Hebden Bridge corridor bus services	Metro Operators	Low	0.3	Improved bus accessibility; Encourage bus patronage and modal shift	Medium term	High
Other LTP2 core strategic elements A6, C1, C6						

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Action / initiative	Lead roles / responsibility	Potential air quality impact on AQMA	Anticipated reduction in NO _x (µg/m ³)	Other effects (including non-air quality impacts)	Timescale / status	Cost
Improve rail services and facilities on the Caldervale line	Metro Operators	Medium	1.0	Reduce congestion on the corridor; Encourages modal shift; Improved customer safety and satisfaction	Long term	Very high
Other LTP2 core strategic elements A4, A6, C1, C6						
Improve and expand 'Park & Ride' facilities at Upper Calder Valley rail stations	CMBC ES Metro	Medium	1.0	Reduce congestion on the corridor; Reduced traffic and congestion; Encourages modal shift; Improved customer safety and satisfaction	Medium term	Medium
Other LTP2 core strategic elements A4, A6, C1, C6						
'Park and Ride' scheme(s) with strategically located sites to transfer Hebden Bridge and Halifax town centre peak period inbound car journeys to bus journeys	CMBC ES Metro Operators	Medium	0.75	Reduced congestion and emissions; Encourages modal shift; Benefit to both commuters and visitors	Long term	High
Other LTP2 core strategic elements A4, A6, C1, C6						
Comment: Capacity of public transport network; Interventions need to be along full corridor / across network to produce desired impact						
DEMAND MANAGEMENT	LTP2 Air Quality core strategy AQ1, AQ2, AQ3					
Continue to develop and implement car parking strategy for Hebden Bridge and Halifax	CMBC ES	Low	0.2	Contribute to overall emission reduction throughout the district	Ongoing	Medium
Other LTP2 core strategic elements C2, C6						

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Action / initiative	Lead roles / responsibility	Potential air quality impact on AQMA	Anticipated reduction in NO _x (µg/m ³)	Other effects (including non-air quality impacts)	Timescale / status	Cost
Review and regulate long stay car parking charges in Hebden Bridge	CMBC ES	Low	0.15	Contribute to overall emission reduction throughout the district; Potential revenue for reinvestment in air quality management	Short term	Medium
Other LTP2 core strategic elements C2, C6						
Investigate workplace parking charging in Hebden Bridge and Halifax	CMBC ES	Low	0.45	Contribute to overall emission reduction throughout the district; Potential revenue for reinvestment in air quality management	Long term	Medium
Other LTP2 core strategic elements C1, C2, C6						
Investigate peak period inbound moving traffic 'air quality / congestion' charging on the A646 Hebden Bridge corridor	CMBC ES	High	2.35	Reduced emissions, congestion, noise; Would encourage increased modal shift / share to public transport; Raise awareness of air quality issues; Potentially revenue generating to reinvest in air quality management	Long term	High
Other LTP2 core strategic elements C1, C2, C3, C6						
Increased enforcement of waiting restrictions on the A646 Hebden Bridge corridor in AQMA	CMBC ES	Low	0.1	Improve smooth traffic flow; Reduced congestion; Encourage safer and more efficient driving style	Short term	Low
Other LTP2 core strategic elements C1, C3, C4, S4						
<p>Comment: Work place parking charges are highly contentious. Costs to businesses / commerce may have negative impact on continued regeneration of Hebden Bridge and Halifax; 'Road pricing' or 'congestion charging' is potentially highly contentious. Difficult to identify and differentiate between local, Halifax bound and 'through traffic' using the corridor; Potentially high administrative costs on several of the actions; Potential displacement of traffic adding to congestion and air quality problems elsewhere in the District.</p>						

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Action / initiative	Lead roles / responsibility	Potential air quality impact on AQMA	Anticipated reduction in NO _x (µg/m ³)	Other effects (including non-air quality impacts)	Timescale / status	Cost
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WALKING AND CYCLING	LTP2 Air Quality core strategy AQ1, AQ2, AQ3					
Improve the condition and signing of footway and footpath routes in and around Hebden Bridge town centre	CMBC ES	Low	0.05	Lead to adoption and promotion of walking policies for commuting, within work travel and for leisure; Promotes healthier lifestyles; Healthier workforce	Short term	Low
Other LTP2 core strategic elements A1, A2, C5						
Improve walking routes and access to bus stops on the A646 Hebden Bridge corridor	CMBC ES	Low	0.1	Promotion of walking policies for commuting, within work travel and for leisure; Promotes healthier lifestyles	Short term	Low
Other LTP2 core strategic elements A1, A2, A6, C5						
Continue to promote the National Cycle Network Route 66 and develop a more comprehensive cycle route network within a 5km radius of the Hebden Bridge AQMA with routes into the town centre	CMBC ES	Low	0.1	Zero emission option; Promote healthier lifestyles; Healthier workforce; Likely to promote more sustainable actions and travel choice in future generations	Short term	Medium
Other LTP2 core strategic elements A2, C5						
Continue to implement the cycle training programme to primary schools and develop the advanced training to secondary schools	CMBC ES	Low	0.1	Promote healthier lifestyles; Likely to promote more sustainable actions and travel choice in future generations	Ongoing	Low
Other LTP2 core strategic elements C5, C6, S2						
Comment: Modal shift to walking and cycling from motorised road transport will improve air quality and reduce emissions though the key issues relate to the difficulties in changing peoples travel patterns and general attitude						

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Action / initiative	Lead roles / responsibility	Potential air quality impact on AQMA	Anticipated reduction in NO _x (µg/m ³)	Other effects (including non-air quality impacts)	Timescale / status	Cost
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C: ROAD NETWORK ALTERATIONS

TRAFFIC MANAGEMENT	LTP2 Air Quality core strategy AQ1, AQ2, AQ3					
Installation of bus detection (AVL) into traffic signals and on the A646 Hebden Bridge corridor on the approach and within the AQMA	CMBC ES Metro	Low	0.15	Reduced congestion; Improved journey time reliability; Journey time savings for passengers; Contribute to modal shift	Short term	Medium
Other LTP2 core strategic elements C1, C3						
Investigate road traffic signal timings and linkages	CMBC ES	Low	0.1	Reduced congestion; Improve smooth traffic flow; Improved journey time reliability	Medium term	Medium
Other LTP2 core strategic elements C1, C3, C4						
Consider bus priority measures on the A646 Hebden Bridge corridor	CMBC ES Metro	Low	0.1	Improved journey time reliability; Journey-time savings for passengers; Contribute to modal shift	Medium term	Medium
Other LTP2 core strategic elements C1, C3, C4						
Consider options to provide 'smooth' / constant speed traffic flow on A646 Hebden Bridge corridor on the approach and within the AQMA	CMBC ES	Medium	0.6	Reduced congestion; Encourage safer and more efficient driving style	Medium term	Very high
Other LTP2 core strategic elements C1, C3, C4						
Traffic queue re-location on A646 and A6033 outside the AQMA	CMBC ES	Medium	0.9	Improve smooth traffic flow through AQMA; Reduced congestion	Medium term	High
Other LTP2 core strategic elements A1, A2, C1, C3, C4, C6						

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Action / initiative	Lead roles / responsibility	Potential air quality impact on AQMA	Anticipated reduction in NO _x (µg/m ³)	Other effects (including non-air quality impacts)	Timescale / status	Cost
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Comment:

Local air quality issues associated with buses can be due to stationary vehicles 'idling' at timing points. Enforcement may have limited effect in AQMA;
There is a clear correlation between areas of congestion and air quality issues. Levels of emissions are higher on congested roads compared to the same roads with free flowing traffic

NEW SCHEMES	LTP2 Air Quality core strategy AQ1, AQ2, AQ3					
Corridor Improvement scheme or individual junction / road schemes not yet in any highway programme	DfT GOYH CMBC ES	High	2.2	Reduced congestion; Improve smooth traffic flow	Long term	Very high
Other LTP2 core strategic elements A1, A2, C1, C3, C4, C6						
Hebden Bridge by-pass route Currently not in the LTP system or any highway programme	DfT GOYH CMBC ES	High	4.0	Reduced congestion on Town Hall Street; Improve efficiency of public transport; Pedestrian safety; Town centre regeneration	Long term	Very high
Other LTP2 core strategic elements A1, A2, C1, C3, C4, C6						

Comment:

There is a clear correlation between areas of congestion and air quality issues. Levels of emissions are higher on congested roads compared to the same roads with free flowing traffic;
It is extremely unlikely that funding would be available through the LTP process due to the high costs associated with the relief road or a by-pass and would rely on a private finance initiative, the timing and outcome of which are largely outside the Council's control

D: VEHICLE EMISSIONS

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ALTERNATIVE FUELS	LTP2 Air Quality core strategy AQ1, AQ2, AQ3, AQ4					
Support National Government initiatives regarding alternative / 'cleaner fuels'	CMBC EH DfT DEFRA	High	2.2	Reduction in particulates and other pollutants; Contribute to overall emission reduction throughout the district	Long term	Very high
Other LTP2 core strategic elements						
Encouragement and promotion of alternative fuels in vehicles through various initiatives such as discounted or free parking on specific car parks	CMBC EH DfT DEFRA	Medium	0.8	Reduction in particulates and other pollutants; Consideration of Low Emission Zones; Contribute to overall emission reduction throughout the district	Long term	Very high
Other LTP2 core strategic elements						
Investigate incentives to encourage Calderdale residents to drive 'cleaner fuel' vehicles	CMBC EH	Low	0.3	Reduction in particulates and other pollutants; Consideration of Low Emission Zones; Contribute to overall emission reduction throughout the district	Medium term	Medium
Other LTP2 core strategic elements						
Encourage local bus operators to consider the use of 'cleaner fuel' or fit pollution-reduction equipment to buses on the A646 Hebden Bridge corridor services	CMBC EH Metro Operators	Medium	1.3	Replacement of old fleet models with better accessibility; Reduction in particulates and other pollutants	Long term	Very high
Other LTP2 core strategic elements						
Provide support funding and encourage bus operators to convert all buses to 'cleaner fuels'	CMBC EH DfT DEFRA Metro Operators	Medium	0.9	Replacement of old fleet models with better accessibility; Reduction in particulates and other pollutants; Contribute to overall emission reduction throughout the district	Long term	Very high

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Other LTP2 core strategic elements						
Provide support funding and encourage HGV operators to convert to 'cleaner fuels'	CMBC EH DfT DEFRA	Medium	1.3	Reduction in particulates and other pollutants; Contribute to overall emission reduction throughout the district	Long term	Very high
Other LTP2 core strategic elements						
Improve CMBC vehicle fleet to convert to 'cleaner fuel'	CMBC EH	Low	0.15	Reduction in particulates and other pollutants; Contribute to overall emission reduction throughout the district	Medium term	Very high
Other LTP2 core strategic elements						
<p>Comment: The positive impact of cleaner vehicle technology is to some degree negated by increase in number of car journeys so increasing congestion on the corridor; Large engine sizes in vehicles such as SUV 4x4's generally produce quite high levels of emissions; The increasing use of air conditioning in vehicles is another issue contributing towards local pollution problems. Additional fuel is consumed resulting in more emissions; The key emission associated with buses is particulate (PM₁₀) although buses contribute only a small proportion of total emissions; Consideration could be given to extending this initiative to company fleet vehicles to further improve benefits</p>						

E: FREIGHT

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MOVEMENT OF GOODS	LTP2 Air Quality core strategy AQ3, AQ4					
Establish a Freight Quality Partnership (FQP)	WYLTP SG CMBC ES CMBC EH FHA FQP	Low	0.15	Sharing knowledge of 'cleaner fuel' technology; Driver training; Better journey planning by HGV and fleet operators; Sustainable delivery policy and guidance	Medium term	Low
Other LTP2 core strategic elements						
Satellite Navigation Technology (SatNav) which avoids declared AQMA's	DfT FHA	Low	0.3	Reduced congestion	Medium term	Very high
Other LTP2 core strategic elements						
Night-time freight movement / delivery	FTA FQP	Medium	1.0	Reduced congestion; Reduced delays in deliveries	Long term	Very high
Other LTP2 core strategic elements						
Increased use of the rail network for movement of freight	DfT FTA	Low	0.15	Reduced congestion; Reduction in particulates and other pollutants	Long term	Very high
Other LTP2 core strategic elements						
Comment: Rail fuelled directly by fossil fuel can have a negative impact on local air quality, particularly when older locomotives are regularly used						

F: STATUTORY MEASURES

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ROAD TRAFFIC (VEHICLE EMISSIONS) (FIXED PENALTY) (ENGLAND) REGULATIONS 2002	LTP2 Air Quality core strategy AQ1, AQ2, AQ3, AQ4					
Implement roadside vehicle emission testing in partnership with other regulating bodies	CMBC EH DEFRA	Low	0.45	Identify high polluting vehicles; Reduction in particulates and other pollutants; Contribute to overall emission reduction throughout the district; Encourage replacement of older high polluting vehicles with less polluting vehicles	Medium term	Medium
Other LTP2 core strategic elements						
Investigate voluntary vehicle emission testing on the AQMA corridor	CMBC EH DEFRA	Low	0.15	Identify high polluting vehicles; Reduction in particulates and other pollutants; Contribute to overall emission reduction throughout the district; Encourage replacement of older high polluting with new less polluting vehicles	Medium term	Medium
Other LTP2 core strategic elements						
Impose Low Emission Zone to cover a designated area within the Hebden Bridge AQMA	CMBC ES CMBC EH DfT DEFRA	Medium	1.05	Reduction in particulates and other pollutants	Long term	Very high
Other LTP2 core strategic elements						

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Comment:
Potential negative impact caused by public perception of reasons Low Emission Zone is highly contentious. Currently no suitable alternative routes for traffic between the Upper and Lower Calder Valley. Potential displacement of traffic onto unsuitable routes causing considerable congestion and air quality problems elsewhere. Most likely to be successful if alternative road networks available to absorb displaced traffic

LAND USE PLANNING	LTP2 Air Quality core strategy AQ2, AQ3, AQ4					
Integrate and encourage air quality criteria into land use policy (UDP / LDF) and planning process	CMBC ES	Low	0.25	Contribute to overall emission reduction throughout the district	Short term	Low
	CMBC PS					
Other LTP2 core strategic elements A7, C2, C3, C7						
Encourage take up of travel plan requirement for new development	CMBC ES	Low	0.2	Contribute to overall emission reduction throughout the district; Healthier lifestyles through walking and cycling; Reduction in personal car use for travel to work; Increased public transport patronage and car-sharing	Short term	Low
	CMBC PS					
Other LTP2 core strategic elements A6, A7, C1, C2, C3, C5, C6, C7						

Comment:
Perceived restriction of development;
Potential conflict with other policies;
Potential access and inequality issues;
Isolated business park site developments encourage the use of cars for commuting journeys unless good sustainable transport options for accessibility are included in the development

G: MONITORING

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DATA COLLECTION	LTP2 Air Quality core strategy AQ1, AQ2, AQ3, AQ4					
Continued monitoring of air quality and traffic data	CMBC ES			Contribute to overall emission reduction throughout the district; Reduction in personal car use for travel to work; Increased public transport patronage and car-sharing	Ongoing	Low
Other LTP2 core strategic elements						
Continue district-wide monitoring	CMBC ES			Contribute to overall emission reduction throughout the district; Reduction in personal car use for travel to work; Increased public transport patronage and car-sharing	Ongoing	Low
Other LTP2 core strategic elements						
Continue cross boundary working with neighbouring authorities	WYLTP SG CMBC ES	Low	0.1	Contribute to overall emission reduction throughout the district; Reduction in personal car use for travel to work; Increased public transport patronage and car-sharing	Ongoing	Low
Other LTP2 core strategic elements						
Comment:						
Continued monitoring will only be comprehensive and effective if prioritised by Calderdale MBC and all stakeholders and partners						

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SUMMARY OF ANTICIPATED REDUCTIONS IN VEHICLE NUMBERS and NO_x

Timescales	Low impact		Medium impact		High impact		Reduction in µg/m ³ NO _x
	Vehicle reduction	Reduction in µg/m ³ NO _x	Vehicle reduction	Reduction in µg/m ³ NO _x	Vehicle reduction	Reduction in µg/m ³ NO _x	
Ongoing (2007/08)	65 cars	1.9					1.9
Short term (2008/09 – 09/10)	47 cars 1 HGV	1.55					1.55
Medium term (2009/10 – 12/13)	16 cars 3 HGV	2.0	50 cars 3HGV	2.5			4.5
Long term (2013/14 and onwards)	15 cars 1HGV	0.6	78 cars 10 HGV	8.1	50 cars 6 HGV	10.75	19.45

Total **27.4**



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তাহলে দয়া করে যোগাযোগ করুন :

01422 392139

اگر آپ کو یہ معلومات کسی دوسری زبان
یا شکل میں چاہیے تو رابطہ کریں:

01422 392139



2001-2002
Local Health Strategies
2003-2004
Transforming Secondary Education