

*The Air Quality Strategy for England, Scotland,
Wales and Northern Ireland*

*Joint Air Quality Action Plan for Haven Bridge
and Bargate Bridge Air Quality Management
Areas*

*Boston Borough Council
May 2006*

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1 THE NEED FOR AN AIR QUALITY ACTION PLAN

1.1 *The UK Air Quality Strategy*

In 1997, Government produced The National Air Quality Strategy (NAQS) in line with the requirements of the Government White Paper '*This Common Inheritance*'. The NAQS set down the current process known as Local Air Quality Management (LAQM) within the UK. Through the preceding Environment Act, 1995, this placed a statutory duty on local authorities throughout the UK to periodically review and assess air quality within their areas.

The NAQS set to protect human health against adverse effects of seven priority pollutants. It proposed to set standards and objectives for these pollutants based on the recommendations of the Expert Panel on Air Quality Standards (EPAQS) and the workings of the Committee on the Medical Effects of Air Pollution (COMEAP). The pollutants identified as being of concern are:

- Benzene
- 1,3 Butadiene
- Carbon Monoxide (CO)
- Lead (Pb)
- Nitrogen Dioxide (NO₂)
- Fine Particulates (PM₁₀)
- Sulphur Dioxide (SO₂)

Air Quality Standards are set on medical and scientific evidence concerning the health effects of each of the above pollutants. Each standard includes an objective level for the pollutant and a target date by which the objective level must be achieved. Achievement of the Air Quality Standard should ensure that the pollutant does not pose any adverse health effects for future generations and ensures an appropriate level of safeguarding against increased emissions. Where problems in air quality are known to exist, and measures are outside the authority's powers, the authority must show that it is at least working towards the achievement of the objectives.

In 2000, Government reviewed the NAQS and set down a revised Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland. This set down a revised framework for air quality standards and objectives for the seven pollutants, which were subsequently set in Regulation in 2000 through the Air Quality [] Regulations 2000. These were subsequently amended in 2002 through the Air Quality [] (Amendment) Regulations 2002.

In February 2003 Government published its Addendum to the AQS which proposed new objectives for PM₁₀ in 2010 whilst also setting down new objectives for benzene and carbon monoxide.

In Europe the Air Quality Framework and Daughter Directives prescribe Limit Values for certain pollutants, which all member states must meet. LAQM has a key role to play in helping the UK meet its objectives under these Directives.

The key elements of the Environment Act 1995 concerning the current AQS are listed in Table 1.1.

Table 1.1: Major elements of the Environment Act 1995

Part IV Air Quality	Commentary
Section 80	Places a statutory duty on the Secretary of State (SoS) to produce a national air quality strategy.
Section 81	Obliges the Environment Agency to take account of the strategy.
Section 82	Requires local authorities to review air quality and to assess whether the air quality standards and objectives within their areas are likely to be exceeded.
Section 83	Requires a local authority, for any area where air quality standards are not being met, to issue an order designating it an air quality management area (AQMA).
Section 84	Imposes duties on a local authority with respect to AQMAs. The local authority must carry out further assessments and draw up an action plan specifying the measures to be implemented within the AQMA, and the time-scale for doing so, to move towards attainment of the air quality standards and objectives.
Section 85	Gives reserve powers to cause assessments to be made in any area and to give instructions to a local authority to take specified actions. Authorities have a duty to comply with these instructions.
Section 86	Provides for the role of County Councils to make recommendations to a district on the carrying out of an air quality assessment and the preparation of an action plan.
Section 87	Provides the SoS with wide ranging powers to make regulations concerning air quality. These include standards and objectives, the conferring of powers and duties, the prohibition and restriction of certain activities or vehicles, the obtaining of information, the levying of fines and penalties, the hearing of appeals and other criteria. The regulations must be approved by affirmative resolution of both Houses of Parliament.
Section 88	Provides powers to make guidance which local authorities must have regard to.

1.2 *Local Air Quality Management*

The current AQS provides the basis for implementation of Local Air Quality Management throughout the UK. It requires local authorities to carry out a review and assessment of air quality within its area to identify the current and future locations where air quality objectives are “not likely” to be achieved by their target dates. Previous technical guidance (1998 and 2000 versions) has provided a means by which local authorities can fulfil this duty. In January 2003, new technical guidance and policy guidance were issued by Defra for local authorities continuing with the process of review and assessment. The new guidance sets the framework for the requirements of review

and assessment for future years, taking account of experiences from the previous round of review and assessment.

Within the First Round of Review and Assessment it was recommended that local authorities dispose of this duty through undertaking a three-stage assessment, increasing in detail at each stage. The first stage of this process (Stage 1) includes undertaking a desktop review in order to identify all sources of pollution within the area. Using [then] Technical Guidance issued by Government significance is placed on sources of pollution both within the authority's area and those immediately outside the authority's area, that are likely to impact on air quality. Having identified those sources and areas that require further attention, simple screening assessments (Stage 2) or detailed monitoring and modelling programmes (Stage 3) are undertaken.

The Second Round of Review and Assessment provides a basis for local authorities to again update their previous air quality assessments. In doing so, local authorities should take into consideration changes in national air quality standards and objectives and revised Technical Guidance (LAQM.TG(03)), new emission sources, and any significant proposed planning developments due to take place before the relevant objective date.

Section 83(1) of the Environment Act 1995 requires local authorities to designate as Air Quality Management Areas (AQMAs) those areas where it is likely that the objective levels for any of the designated pollutants would not be achieved.

Section 84 of the Environment Act 1990 requires local authorities to make a further investigation of the air quality within any AQMAs that they may have declared to confirm the findings of the Stage 3/ detailed assessment reports. It additionally requires local authorities that have declared an AQMA to prepare an Air Quality Action Plan to reduce the levels of problem pollutants in the AQMAs.

This plan fulfils the authority's requirements under Section 84(2) of the Act with regards to putting measures in place to strive toward achievement of the current air quality objectives. At the time of writing, the Joint AQMA Action Plan is put down by the Council in order to show a commitment to the achievement of the annual mean objective for NO₂ to be achieved by 31 December 2005. The plan is submitted to show the Council's commitment to continued improvement in air quality in order to achieve the annual mean objective despite the achievement date having passed. It is Government's expectation that, where the relevant objective(s) is (are) not achieved by the date(s) set in Regulation that the Council continues to work toward achieving it (them).

It is hoped that the current review of the UK Air Quality Strategy (due out soon in consultation draft) will clarify the duties to be placed on local authorities where continued exceedence passed the achievement dates arise. The Council's current proposals to integrate the action plan into the Local Transport Plan is discussed in further detail below, in order to set out the additional achievements of the plan within the lifetime of the LTP over the period 2006 – 20011.

1.3 Integration of the Action Plan into the Local Transport Plan (2006-2011)

LAQM.PGA(05) provides an updated policy viewpoint for those authorities with AQMAs declared in their areas, for which local road traffic has been identified as the main emission source. Where this is the case, an authority may wish to integrate its action plan into the Local Transport Plan (2006 – 2011). Air Quality is included within the LTP Second Round (LTP2) as a shared priority – Safety, Congestion and Accessibility forming the other priority areas. Formula funding for the allocation of funds associated with schemes geared toward delivery of these shared priority areas currently favours those local authorities with declared AQMAs. Thus, where good integration and alignment of air quality priorities with the LTP2 occurs, additional funding may be allocated. In the case of Boston Borough Council (BBC), Lincolnshire County Council (LCC) is the relevant authority responsible for the delivery of LTP2.

The Council intends to fully integrate its action plan into the Local Transport Plan for 2006 – 2011 currently being finalised by Lincolnshire County Council. It is intended that future progress reporting on transport measures applicable within this action plan will be undertaken through the LTP Progress Report schedule.

An integral part of the LTP process for those authorities with AQMAs within their areas is the setting of targets in line with Mandatory Indicator LTP8. Guidance highlights that:

When setting targets to be achieved within the lifetime of the LTP for improvements in air quality in Air Quality Management Areas (AQMAs) an authority is expected to set realistic, yet stretching, targets for those pollutants that have triggered the declaration of the AQMA (Mandatory Indicator LTP8).

The requirements for Mandatory Indicator LTP8 are:

- *Set a baseline concentration(s) (2004) for those pollutants that have triggered the declaration of the AQMA(s)*
- *Set a target concentration(s) (2010) for those pollutants that have triggered the declaration of the AQMA(s)*
- *Set annual trajectories (intermediate outcomes) for annual assessment of the performance of the LTP. It is strongly recommended that authorities avoid the use of pollutant concentrations for intermediate outcomes due to the influence of meteorology on the dispersal of pollutants, which may lead to elevated levels of pollution, despite progress with reducing emissions within an AQMA.*

Prior to setting any targets for the two AQMAs within Boston, consideration has been made to what is achievable in realistic terms over the lifetime of the LTP when considered in the wider context of the following:

1. Underlying growth in traffic
2. Local topography and geography of the area
3. The existing network infrastructure
4. Emerging evidence that primary NO₂ levels are increasing (Air Quality Expert Group Report on Nitrogen Dioxide published April 2004)
5. Underlying trend of increasing background ozone levels (more NO_x to NO₂), which means that existing NO_x to NO₂ conversion rates unlikely to hold in future years ((Air Quality Expert Group Report on Nitrogen Dioxide published April 2004)

Authorities are recommended to use intermediate outcomes to establish the performance of the LTP on an annual basis on air quality, thereby avoiding any influence of meteorological conditions on pollutant concentrations. The use of intermediate outcomes is considered more fully in the LTP.

Appendix A provides a summary of the Targets sets for the two AQMAs, based on the impacts of existing national policy measures and what additional improvements in air quality may be realised by the impact of the measures within the action plan. Results show that the Borough is unlikely to meet the annual mean objective for NO₂ by 31 December 2005. However, improvements in air quality will be realised within the lifetime of the LTP, which will result in the achievement of the annual mean NO₂ Limit Value by 2010. This is considered further within Section 3.5: Time-scales.

2 BOSTON BOROUGH COUNCIL REVIEW AND ASSESSMENT

Boston Borough Council has declared two Air Quality Management Areas (AQMAs) under Section 83(1) of the Environment Act 1995. A previous Action Plan has been adopted by the Council for the improvement of air quality within the Haven Bridge AQMA only. This revised consultation draft Action Plan includes the provision of those measures previously deemed appropriate for the Haven Bridge AQMA, and proposes that these be extended to include the newly declared Bargate Bridge AQMA. The approach is appropriate as road traffic has been confirmed as the main emission source leading to the declaration of both AQMAs, and, as such, a simple extension of existing measures to recognise the additional benefits across both AQMAs appears logical. The location and detail of each of the AQMAs can be seen in Figures 2.1, 2.2 and 2.3.

The following sections consider the relative contribution to overall emissions within each of the AQMAs, and further aims to identify the required reduction in emissions (as NO_x) that would be required to be achieved to meet the annual mean objective for NO₂.

2.1 Source-Appportionment

Receptors were selected for relevant locations at the building façades within both AQMAs to represent the highest predicted modelled NO₂ concentrations based on verification using 2004 monitored data.

Modelling was undertaken to provide NO_x source apportionment for receptors within the AQMAs using emission factors for LDV and HDV vehicle classes, together with the corresponding percentage of the traffic flow. The percent contribution from each vehicle class has therefore been calculated. Table 2.1 shows source contributions of NO_x concentrations within the AQMAs.

The results of the source apportionment indicate that road traffic emissions are the main source of NO_x concentrations in the AQMAs (~83%). The HDV class vehicles are contributing disproportionately to NO_x concentrations in the AQMA areas; contributing almost half of NO_x concentrations (41 - 45%) from road traffic but being a relatively small proportion (~9%) of the vehicle fleet.

Table 2.1 Source apportionment of NO_x concentrations at building façades within the AQMAs

Location/ AQMA	NO _x concentrations 2005	%	µg/m ³
69 Bargate End, Bargate Bridge AQMA	Background	16.7	27.1
	Road traffic	83.3	135.1
	<i>HDV*</i>	41.2	66.7
	<i>LDV*</i>	42.1	68.3
95 Liquorpond Street, Haven Bridge AQMA	Background	17.5	27.1
	Road traffic	82.5	127.7
	<i>HDV*</i>	45.0	69.7
	<i>LDV*</i>	37.5	58.0

**As proportion of road traffic emissions contribution*

2.2 Reduction in NO_x required to achieve NO₂ objective

Modelling work, undertaken to determine the amount of NO₂ reduction (as NO_x) required to achieve the annual mean NO₂ objective at the worst-case receptors within each AQMA has been undertaken to inform the focus of attention of the action plan. In order to determine the amount of NO_x reduction required the annual mean objective of 40 µg/m³ NO₂ is calculated to be an equivalent NO_x concentration of 135.6 µg/m³ using LAQM.TG (03), taking into account background concentrations in 2005.

The following provides a summary of the required reductions in NO_x to be realised by the implementation of local measures through the action plan:

(1) Bargate Bridge AQMA

The maximum NO_x reduction required within the Bargate Bridge AQMA at the façade of the worst-case receptor is 26.5µg/m³ (equivalent to a 16.4% improvement in NO_x) in 2005 and NO₂ reduction is 2.1µg/m³ (equivalent to a 5.1% improvement in NO₂).

(2) Haven Bridge AQMA

The maximum NO_x reduction required within the Haven Bridge AQMA at the façade of the worst-case receptor is 19.2µg/m³ (equivalent to a 12.4% improvement in NO_x) in 2005 and NO₂ reduction is 1.3µg/m³ (equivalent to a 3% improvement in NO₂).

The Air Quality Action Plan aims to reduce the levels of NO_x/NO₂ within the AQMA by these amounts.

2.3 Policy Developments Applicable to Both AQMAs

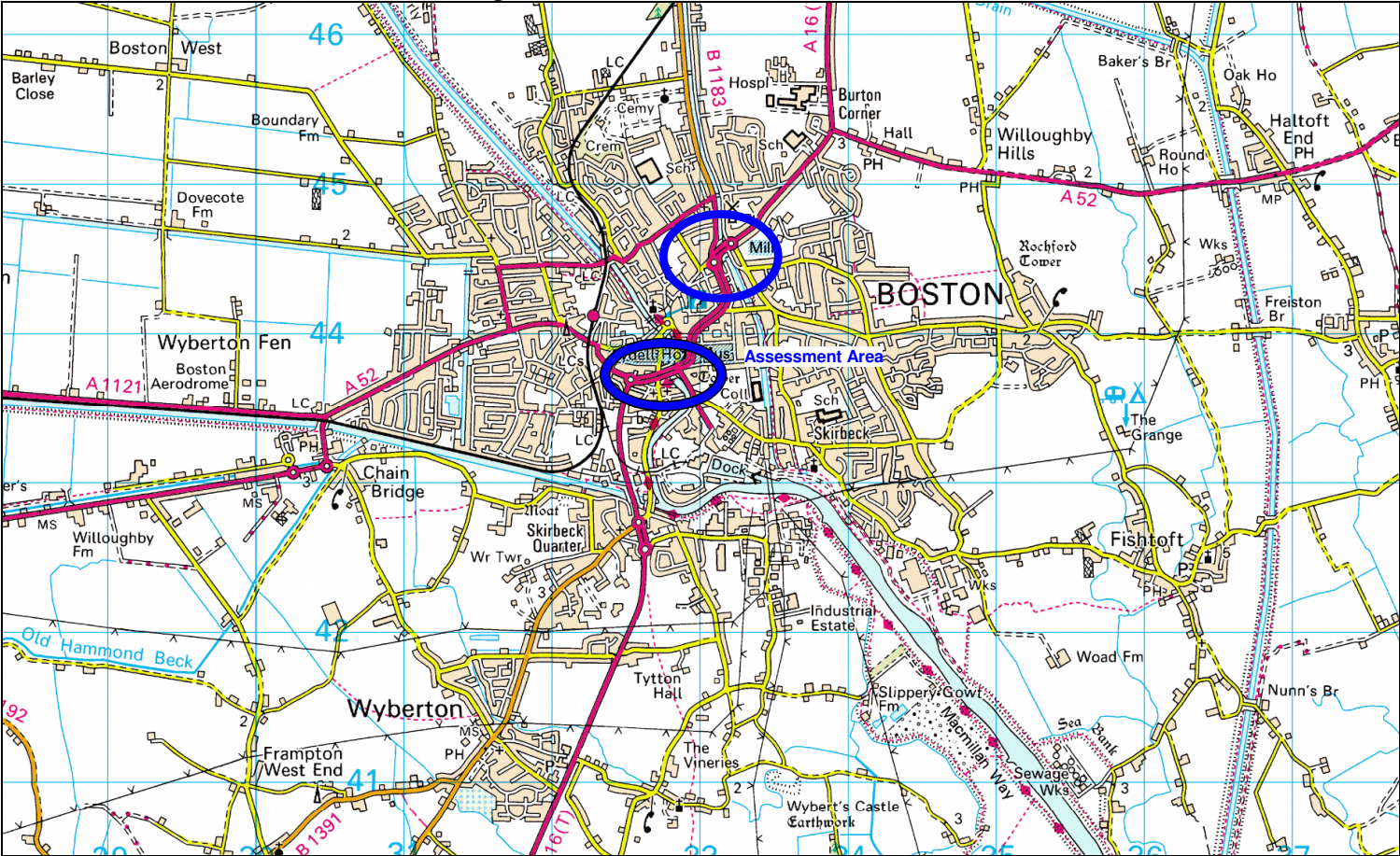
The results of the source-apportionment work are relevant to the formulation of the Air Quality Action Plan for Boston and show that the following are most likely to bring about improvements in air quality within the AQMA and lead to the achievement of the air quality objective for NO₂:

- An investigation into suitable traffic management options to be implemented on the strategic trunk road network accessing the town, to reduce congestion at key 'pinch-points' on the network, is being undertaken as part of the Boston Transport Study. The measure will result in the undertaking of an initial evaluation report, with LCC being subsequently responsible for any implementation;
- The implementation of an enhanced bus network along key strategic routes through the use of Quality Bus Partnerships. An enhanced service provision and the provision of better route information and bus schedules will invariably make buses a more attractive alternative for the public, leading to a change in modal shift away from private vehicle use;
- Implementation of travel plans and the promotion of sustainable forms of transport for key businesses and other organisations within the town; and
- Implementation of school travel plans to assist in the reduction of the 'school run' at morning peak-hour periods

This document provides a detailed consideration to the policies and measures that Boston Borough Council is considering for implementation within its Air Quality Action Plan. It builds upon information contained within the Lincolnshire County Council Local Transport Plan (LTP) and its 2003 Progress Report.

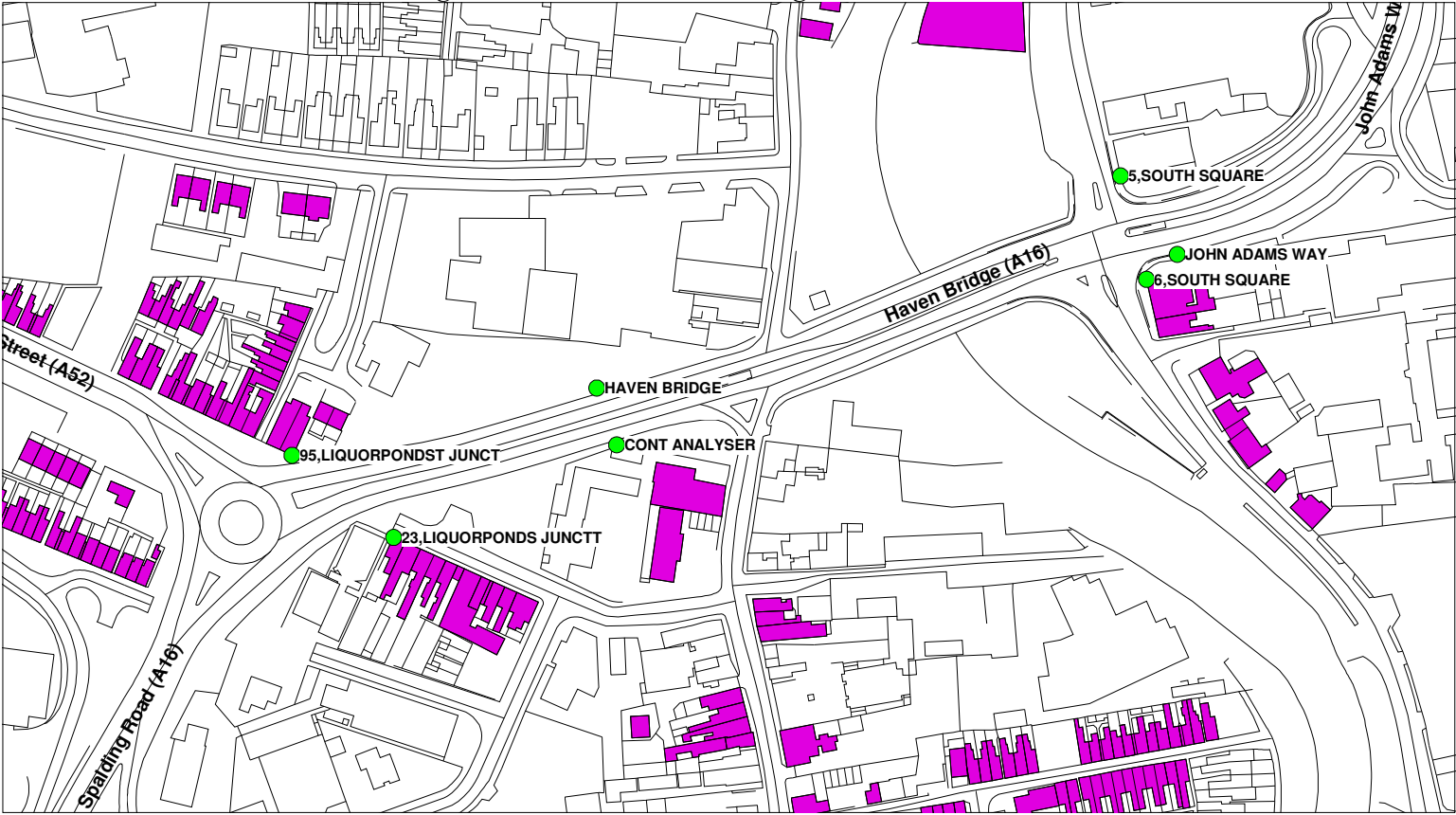
In determining the nature of the measures to be included within this action plan a Working Group was set up comprising relevant department representatives of the Council (Environmental Health, Planning and Regeneration) and also with the Transport Department of Lincolnshire County Council. In addition, external consultants (Casella Stanger) were included within the initial discussions on the measures to be included.

Figure 2.1 Macro-scale location of AQMAs



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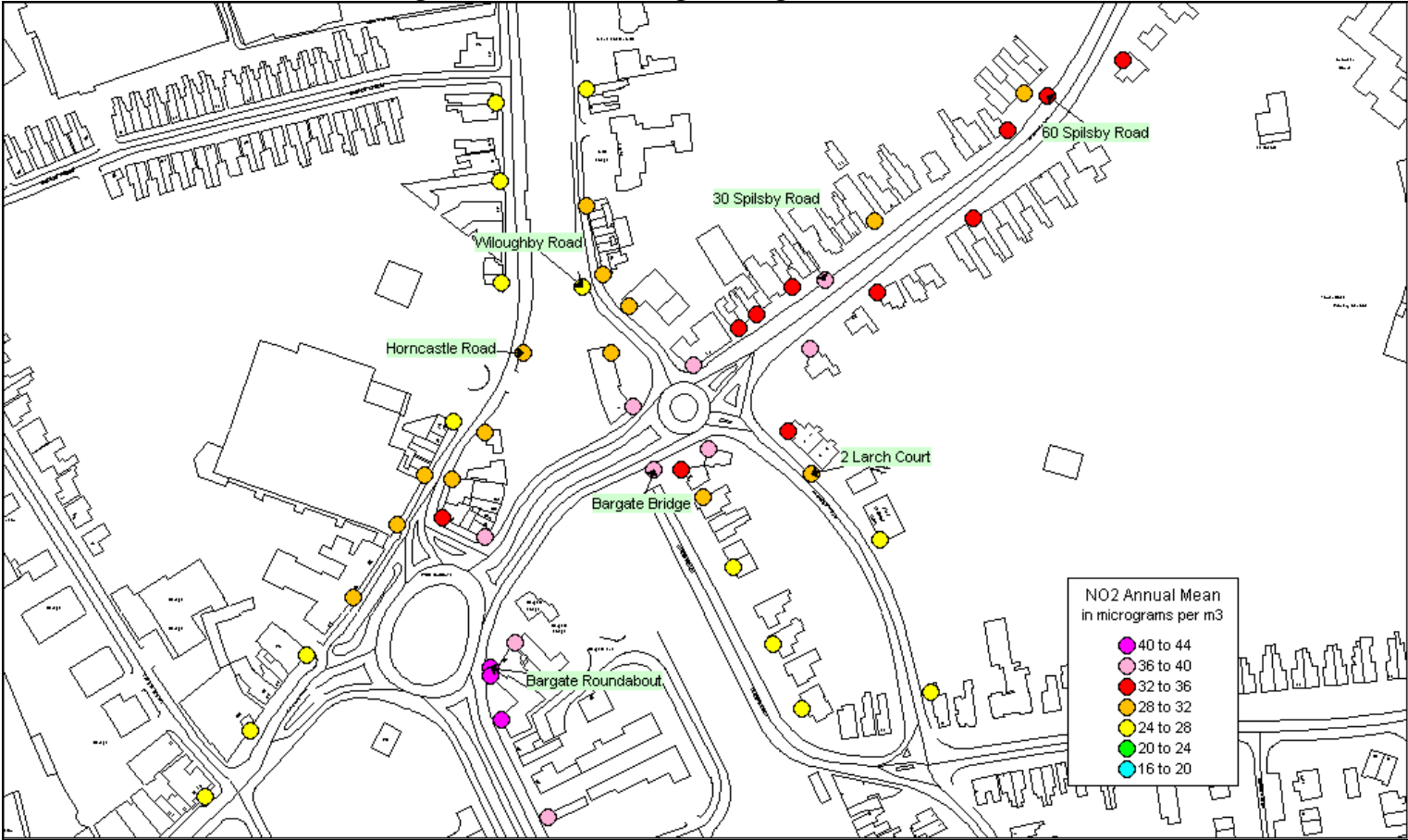
Figure 2.2 Location of Haven Bridge AQMA – local scale



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Note: :Location of Continuous Analyser no longer relevant.
Evident at time of declaration.

Figure 2.3 Location of Bargate Bridge AQMA – local scale



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Key Points:

- The AQMAs have been declared on the basis of exceedences of the annual mean NO₂ objective (2005);
- Consideration to sources of pollution show that it is road traffic that is the main source;
- Of the major roads sources, it is Heavy Duty Vehicles (HDVs) that make the most contribution to levels of NO₂ through NO_x emissions.
- A reduction in NO₂ of at least 2µg/m³ is required on the annual mean at the worst case receptor to achieve the objective;
- Policy measures aimed at reducing the number of local trips undertaken by residents, and aimed at reducing emissions from HDVs within the area are likely to achieve the greatest reductions in levels of NO₂;
- The action plan fulfils the duties of the Council under Section 84(2) of the Environment Act 1995, which requires the authority (having declared AQMAs) to move towards attainment of the relevant air quality objectives, despite the fact that the compliance date of 31 December 2005 has passed.

3 THE ACTION PLAN PROCESS

3.1 Aims of the Action Plan.

The immediate aim of the action plan is to set down and identify a number of appropriate measures that can be taken to improve air quality within the AQMA. The action plan should appraise each measure in terms of feasibility and benefits to air quality, whilst providing explicit consideration to time-scales with respect to implementation.

3.2 Structure of the Action Plan

Chapter 1 has previously given a brief overview of the legislative requirements for the formulation of an air quality action plan and the need to improve air quality within Boston town centre.

Chapter 2 provides an outline of the size and scope of the air quality problems in the AQMAs.

Chapter 3 provides the background to the action planning process and includes details with respect to the overall themes of this document and the process by which consideration to measures has been achieved.

Chapter 4 deals with existing and future actions that can be taken. The approach to policies has been to package policies according to the overall themes by which they operate. These include:

- Package 1: Major Infrastructure Developments;
- Package 2: Local Intervention Measures

The approach has been to first describe the policies in the context of air quality and then provide a tabular summary for specific details. Each action or proposal in the table includes an estimate of how long it will take, how costly it is, and what air quality benefit it will deliver. It also has details of which body (internal or external) will be responsible for implementing it. In many cases, this involves working closely with external partners to deliver improvements, for example, Lincolnshire City Council – who manage the strategic road network for Lincolnshire. Some Council initiatives and policies can impact directly or indirectly on air quality. These will have been subjected to Council consideration and in many cases directly to public consultation. The first part of the table of actions is based on existing BBC Policy. In addition to those actions that already form part of the Council's Policies several extra initiatives are also needed to reduce emissions. These new initiatives form the second part of each detailed tabular summary.

Section 5.4 provides details on the process of consultation undertaken by the BBC in determining the policy measures that should be included within the action plan.

Chapter 6 explains how BBC will monitor the effectiveness of this action plan.

3.3 Building upon existing strategies

In deriving Air Quality Action Plan (AQAP) for Boston Borough Council a number of existing strategies and policies have been incorporated. Notably, these include:

- Boston Borough Local Plan – First Deposit (March 2004);
- Lincolnshire County Council Local Transport Plan (July 2000);
- Lincolnshire County Council Local Transport Plan Annual Progress Report 2003;
- Boston Community Strategy (Under Review);
- The Boston Master Plan.
- Boston Corporate Plan, 2004-2009.

3.4 Impact assessment

For each proposal, or package of proposals, included in the draft AQAP some consideration to the impacts of the proposed measure(s) on air quality is included. The approach to ‘impact assessment’ within the draft Plan has been to, where possible, determine quantitatively the reduction in pollutant emissions or concentrations derived from the proposal. However, limitations to this approach are evident and quantitative analysis is confined to those proposals that lend themselves easily to such an approach through the use of complex dispersion models, and/or the use of emissions estimates. For example, where a proposed reduction in the volume of traffic is suggested a dispersion model can be used to determine the impacts on air quality within the affected area. Less practical to assess fully is a proposal that entails increasing the coverage of cycle lanes within an area, or increasing the number of ‘walk-to-schools’ initiatives. Consequently, where such ‘Smart Measures’ are proposed, an estimate of the improvements in air quality brought about by the package as a whole has been made, based on ‘best estimates’.

With regards to the proposed development of the Docks Link Road, changes in traffic flows lend themselves to detailed modelling and this has been undertaken using the ADMS-Roads model, previously used in the review and assessment work that has led to the declaration of the AQMA in Bargate Bridge.

3.5 Time-scales

Part IV of the Environment Act stipulates that a local authority must move towards achieving the air quality objectives within its area, where those objectives have been shown to be exceeded in the relevant future years. Under Section 84 of the Act the local authority, in drawing up its action plan, must give due consideration to the time-scales to which the objectives are required to be achieved. The current AQMA within the Borough is declared on the basis of predicted exceedences of the annual mean objective for NO₂ – the **date of achievement of this objective is 31 December 2005**.

Many of the existing measures are in place as a consequence of existing strategy implementation. New policy measures should give due regard to this date and time-scales for these measures have additionally been identified. It is stated from the outset that the

extent of the problem within the AQMA is such that no single policy measure is likely to solely achieve the required reduction in ambient levels of NO₂. As such, the achievement of the objective is dependent upon the cumulative impacts of a number of measures, the main one of which has been identified and is outside the authority of the Borough. **It is therefore unlikely that the proposals included within this action plan will achieve the necessary reductions in NO₂ within the time-scale of the objective date (i.e. 2005). However, it is likely that the longer-term improvements in air quality will be realised within the life-time of the second round of Local Transport Plans (LTPs), which require authorities to set out their transport objectives for the period 2006 – 2011.**

It is the additional objective of the plan to safeguard air quality in those existing areas not shown to be an issue, whilst additionally bringing about an improvement in air quality across the Borough both in the short-term and in the longer-term.

3.6 Funding

Many of the policy measures included within the Action Plan have already had funding allocated, or being sought through the latest Local Transport Plan (LTP2). New measures for which funding has yet to be sought are highlighted separately in order to establish the full additional funding burden of the policies specifically included for the Borough's statutory duties on air quality.

3.7 Responsibilities

The Borough is under statutory duty through Part IV of the Environment Act 1995 to improve air quality within an AQMA, where such an AQMA has been declared. This action plan sets out to identify those measures over which the Council has direct control, whilst additionally identifying those measures which are the responsibility of other parties. Within the Borough's actions, responsibilities have been additionally identified across relevant departments covering Environment, Planning, and Regeneration. Where necessary partnership working is required to realise the policy included more than one body has been identified.

The AQMA is declared on a strategic road link that form part of the Lincolnshire County Council network managed by Lincolnshire County Council. As such, Lincolnshire County Council is both a statutory consultee within the formulation of this action plan and also a necessary contributor to the success of its implementation. Support from Lincolnshire County Council is therefore sought as a Partner in the action plan.

3.8 Costs, benefits and feasibility

It is difficult to precisely quantify some of the effects of the proposals and it was decided to use broad descriptors for the Timescale, Cost and Air Quality Benefit. In approaching this aspect of the action plan the Borough Council has taken heed of current advice from the Defra Action Planning Helpdesk and also sought to refer to useful examples of action plans already submitted. It has been concluded that a simple matrix approach is best suited to the current needs based on the following descriptors:

Time-scale definitions (from January 2006)

Long = Long Term (5 - 10 years plus)
 Medium = Medium Term (2-5 years)
 Short = Short Term (within the next 2 years)

Yr1	Yr2	Yr3	Yr4	Yr5

Cost definitions (estimated at 2002 prices)

Very High = more than £1,000,000
 High = £100,00 - £999,999
 Medium = £50,000 – £99,999
 Low = less than £49,999

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£

Air Quality Benefit (up to 2005)

High = improvements greater than 2µg/m³
 Moderate = 1 - 2 µg/m³
 Reasonable = 0.2 – 1 µg/m³
 Negligible = less than 0.2 µg/m³

✓✓✓✓
✓✓✓
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Key Points:

- The action plan has aimed to identify a number of policy measures that could assist in the Borough moving toward the achievement of the annual mean objective for NO₂;
- The action plan has built upon existing measures contained within the Local Transport Plan;
- Where possible, the action plan has tried to assess the impacts on air quality of each proposed measure and additionally attempted to provide an assessment of the cumulative impacts of each package of measures;
- The action plan has indicated whether funding has been achieved through the identification of existing measures, alongside where additional funding is required through new measures;
- Time-scales and responsibilities for the implementation of each measure and/or package of measures are provided;
- The action plan has attempted to provide a measure of ranking the measures according to feasibility, cost and benefits;
- Support from Lincolnshire County Council is sought with respect to forming a Partnership working for the implementation of the actions included in this plan.
- The LTP process is the mechanism by which any major infrastructure developments will be considered.

4 POLICY PROPOSALS – A THEMATIC APPROACH

The proposals in the following section are submitted under the following themes:

- PACKAGE 1: Major Infrastructure Development;
- PACKAGE 2: Local Intervention Measures

Package 2 encompasses general themes of encouraging modal shifts in public behaviour, reductions in traffic, and raising awareness.

It is likely that with respect to Major Infrastructure developments within the area of Boston that a significant reduction in road traffic could in the longer term be achieved that would singularly achieve the annual mean NO₂ objective. However, this is outside the current time-scale for achievement date of 31 December 2005. As such, a series of smaller measures, each delivering part of the required improvement, is likely to be the most successful approach to achieving reductions in pollutant concentrations across the Borough in the short-term.

Under each theme (or package) a number of individual measures are proposed which aim to make a contribution to improving air quality within the Borough as a whole. A table has been included on the following pages for each of the existing policy actions and future proposals. The table aims to identify those departments within the Borough Council that would be responsible for the implementation of the policy, or whether the implementation relies on partnership working with external organisations. Moreover, for each policy the perceived (or calculated) air quality benefits are reported each measure alongside any readily identifiable non-air quality benefits (both positive and negative) that could impact on the community. These include such aspects as reduced congestion, reduced noise, costs to businesses, social exclusion and affordability. In addition, for each proposed policy measure an assessment of the way in which the measure will be perceived by relevant stakeholders has been made, alongside the costs and feasibility of implementation.

Annex B provides an overall tabular summary for each of the proposed measures included in each of the packages.

It is recognised from the outset that many of the existing and proposed policy measures contained within this plan would, in themselves, not provide a substantial benefit to air quality. It is therefore important that each package of measures is considered in terms of the cumulative impacts on air quality. In order to highlight this, a statement on the cumulative impacts of each package of measures (existing plus proposed) is made.

5 PROPOSED MEASURES

5.1 PACKAGE 1: Major Infrastructure Developments

The following measures have the over-arching theme of major infrastructure development and aim to provide alternative routes for traffic currently entering the AQMA. Time-scales for implementation are outside that of the current achievement date for the annual mean NO₂ objective, however, such schemes are likely to reduce significantly the amount of emissions within the AQMA and therefore lead to significant improvements in air quality. Actual impacts of schemes on air quality will be determined through the Environmental Impact Assessment process, to be carried out as part of separate Environmental Statements to be submitted in support of the applications for the schemes. However, a preliminary assessment of the benefits in air quality has been undertaken in support of the Action Plan, which is shown in Appendix A.

Of the two schemes considered here, completion of the Docks Link Road is envisaged within the lifetime of the 2nd LTP (2006/7 – 2010/11). The Outer Distributor Road is a longer term consideration that will form part of the Boston Transport Study , but notwithstanding this it has been included to assess potential benefits. The schemes have been assessed for a year of implementation of 2010, in line with consideration to completion within the 2nd LTP period and to allow consideration to the potential reductions in air quality achievable by the EU Limit target date 2010 through their implementation.

Boston Docks Link Road

Lincolnshire County Council is awaiting the final decision for the development of the new Boston Docks Link Road. A formal Environmental Impact Assessment was undertaken in support of the application and an Environmental Statement submitted. The document has undertaken a detailed consideration to air quality impacts of the proposed scheme and has considered the relationship between the scheme and the AQMA. The assessment concluded that traffic flows along Haven Bridge and John Adams Way will be reduced with the opening of the Docks Link Road. In addition, congestion will be reduced thereby increasing the speed of vehicles, which is likely to result in a reduction of emissions within the AQMA.

Policy AP 1:

The Council supports the building of the Boston Docks Link Road.

Responsibility	LCC / BBC
Air Quality Impacts	This option would significantly reduce traffic from within the AQMA with the likely result of significantly moving towards achieving the annual mean NO ₂ and a reduction of 2µg/m ³ .
Non Air Quality Impacts	Positive: economic regeneration Negative: none identified.
Perception	Likely to be positive for economic regeneration and by residents located within the AQMA.
Cost-effectiveness & Feasibility	Costs = Very High. Environmental Statement submitted and proposal on course for realisation. Costs covered by County – outside of the current LTP.

The Outer Distributor Road (Western bypass scheme)

The Outer Distributor Road is a longer term consideration that is being considered within the Boston Transport Study, but has been included to assess potential benefits.

Policy AP 2:

The Borough Council supports the longer-term vision for the provision of the Outer Distributor Road for Boston.

Responsibility	LCC
Air Quality Impacts	This option would significantly reduce levels of Heavy Good Vehicles (the most polluting vehicle class) within the AQMA and would ensure achievement of the annual mean NO ₂ with this measure alone.
Non Air Quality Impacts	Positive: economic regeneration, ease traffic congestion Negative: none identified.
Perception	Likely to be positive for economic regeneration and by residents located within the AQMA.
Cost-effectiveness & Feasibility	Costs = Very High. Environmental Statement not submitted. Costs not secured within current LTP

5.2 PACKAGE 2: Local Intervention Measures

Recent research carried out on behalf of DfT has shown that Smarter Choices (commonly referred to as “Softer Measures”) can lead to potentially significant reductions in peak-hour traffic flows within otherwise normally congested areas. The extent to which reductions can be achieved is solely dependent upon the ‘intensity’ of implementation (i.e. school travel plans at 25%, 50% or 100% of schools or all major employers in the area or 50% of employers within an area). The fundamental aim of Smarter Choices is to influence the way in which people travel, through the provision of more attractive alternatives. For example, Bus Quality Partnerships provide an obvious means by which large numbers of people can be made to change their mode of transport. The provision of modern smart clean buses, supported by clear and updated travel information can persuade a certain percentage of the population (those mostly with attitudes that are open to influence) out of their private vehicles. Flexible working hours and tele-working are less obvious way in which people’s decisions on transport methods can be influenced. The key objective of Smarter Options in the majority of cases is to reduce the peak-hour journeys made on the local road network, which typically lead to traffic volumes that exceed the road capacity, and hence cause congestion.

The success to which reductions can be achieved not only depends on the intensity with which campaigns to promote modal shift are employed, but also the under-pinning with policy measures that reduce the level of ‘opportunistic’ traffic movements. That is, measures are included, which remove the chance of traffic replacing that which has been removed from the road network. This fact acknowledges that a certain proportion of the travelling public remain ‘wed’ to their cars and will never be influenced to travel by other means (other than perhaps through the implementation of more draconian measures). To this end, road-user charging, reduced parking provision or higher priced parking, provide the means by which stronger influences on attitudes may be asserted – policies which complement the Smarter Choices approach.

In deciding on which policy measures are most applicable to Boston the following Smarter Choices have been deemed acceptable:

- Workplace travel plans
- Personalised travel plans
- School travel plans
- Enhanced provision of public transport information

Details of these separate elements form consistent themes in the following ‘local’ policy measures.

Boston Transport Study

The Boston Masterplan - Strategy (2004) has identified Transport Infrastructure and Congestion as one of the key issues (Priority 4). Lincolnshire County Council Executive has agreed to the undertaking of a study into the transport problems experienced by Boston and to set down the strategic framework for future transport requirements. This agreement was achieved on 7 December 2004 and Jacobs Babbie has since been undertaking the work and will report their initial findings in Spring 2006. The aim of the Transport Strategy is:

- To provide a framework for better management of movements into and through Boston in the period up to 2021;
- To address the problems associated with existing and anticipated levels of congestion in Boston;
- To address the impact of existing and anticipated traffic movements on the environment in Boston;
- To improve safety;
- To improve accessibility;
- To support a sustained economic growth for Boston and to assist in meeting the regeneration aspirations of Boston and its surroundings

The Boston Transport Study will inform the resulting Transport Strategy, which will comprise the following:

- Identification of the problems;
- Objectives to be achieved;
- A ‘package’ of options;
- Desirable outcomes
- Programme of short “quick-wins” and longer-term interventions.

This action plan anticipates some of the required content of the Transport Strategy in terms of the ‘package’ of options and the likely content of the programme of ‘quick-wins’.

Policy AP 3:	
The Council supports the development of a Transport Strategy for Boston.	
Responsibility	LCC / BBC
Air Quality Impacts	Subject to outcome of the feasibility study and implementation of measures.
Non Air Quality Impacts	Positive: economic regeneration, safer roads, improved visual amenity of town centre Negative: possible loss of housing
Perception	Likely to be positive for economic regeneration and by residents located within the AQMA.
Cost-effectiveness & Feasibility	Costs = Medium. Funds secured for feasibility study. Outcome to be reported.

A Community Travel Zone (CTZ) for Boston

Community Travel Zones are considered in the LTP with specific reference to the pilot study carried out in Sleaford. A CTZ aims to reduce the number of car journeys of less than two miles through the promotion of walking, cycling and use of public transport (particularly during peak hours). The CTZ complements those proposals listed above falling under the jurisdiction of the Borough Council and fits wholly with the profile of emissions within the AQMA on trip origin-destination profiles. The LTP proposes 3 such zones for Boston.

Policy AP 4:

The Council supports the expansion of the CTZ within Boston in order to contain traffic growth and promote sustainable forms of transport.

Responsibility	LCC
Air Quality Impacts	Likely to be negligible. The benefit of this policy lies with the promotion and raising awareness of sustainable forms of transport.
Non Air Quality Impacts	Positive: healthier living – walking and cycling exercise Negative: infringement of human rights with respect to vehicle use, possible social exclusion for disabled or impaired members of the public.
Perception	Likely to be received well by those members of the public willing to accept change.
Cost-effectiveness & Feasibility	Costs = Medium. Funds secured with proposed implementation March 2006.

Provision of alternative fuel supplies within the Borough

One of the principle means of encouraging fleet operators and private vehicle users to switch over to cleaner fuels is to increase their availability. Currently there is limited provision of alternative fuel supplied within the Borough resulting in those with alternative fuelled vehicles having to drive outside of the Borough to seek fuel. This increases the number of miles required for re-fuelling and therefore reduces the advantage gained through lower emissions attributed to cleaner fuel usage.

Policy AP7:

The Borough Council will seek the provision of Liquid Petroleum Gas (LPG) pumps at new filling stations through the planning process and encourage the provision of fuel alternatives at existing filling stations through partnership working with suppliers.

Responsibility	BBC
Air Quality Impacts	This option would provide additional fuel choices for residents within the Borough and reduce vehicle emissions. It is unlikely that the air quality benefits would be significant from the policy as a stand-alone entity.
Non Air Quality Impacts	Positive: increased consumer choice Negative: none identified
Perception	Positive
Cost-effectiveness & Feasibility	Costs = Low. Costs to suppliers likely to be minimal as infrastructure already in place. Feasibility is high as the infrastructure is in place through existing petrol filling stations but dependent upon designated officer time.

Securing the potential for rail freight

Regeneration of the Southern Enterprise Zone and increased handling at the Port of Boston represent potential adverse impacts with respect to freight movements that could be alleviated through the use of alternative options. Currently, rail freight represents only a small proportion of freight movements within the County. The County has committed in the LTP to work with partners to realise the potential for rail freight within the County.

Policy AP10:

The Borough Council aims, through the Local Plan, to explore the development of a rail-freight interchange.

Responsibility	BBC / LCC
Air Quality Impacts	Negligible for current levels but likely to ensure that no significant worsening of air quality takes place as a consequence of economic growth for the area.
Non Air Quality Impacts	Positive: less congestion, safer roads Negative: possible increased noise with loading and unloading operations
Perception	Positive.
Cost-effectiveness & Feasibility	Costs = Low. Subject to the outcome of a feasibility study for which additional funds will be required.

Investigating the need for a Transport Officer within the Borough

A designated senior officer within the Borough Council could provide the necessary links with County on transport issues and benefit the Council and local businesses through an integrated approach to transport issues.

Policy AP11:

The Borough Council will designate a senior officer within the Borough Council to take an over-arching responsibility for transport-related issues within the Borough Council and for those between the Borough Council and the County Council.

Responsibility	BBC
Air Quality Impacts	Direct impacts are negligible. Indirect impacts through improved discussion and liaison could be considerable.
Non Air Quality Impacts	Positive: improved dialogue and integrated approaches to transport issues Negative: none identified
Perception	Positive.
Cost-effectiveness & Feasibility	Costs = Low. Feasibility dependent upon funding.

Feasibility

Controlled Parking Zones (CPZ) in residential areas;

A CPZ controls those cars that are permitted to park within any one area. It provides a means to local authorities of controlling the level of inbound traffic to an area from locations outside and reduces the likelihood of problems existing with congestion, particularly around public transport intersections such as train stations, etc.

Policy AP12:

The Borough Council will develop a framework detailing considerations to CPZs within the Borough as part of the Boston Transport Study (see AP3).

Responsibility

LCC /BBC

Air Quality Impacts

The direct air quality impacts are likely to be negligible as a result of stand-alone policy.

Non Air Quality Impacts

Positive: improved environmental surroundings
 Negative: none identified

Perception

Positive by residents.

Cost-effectiveness & Feasibility

Costs = Low. Feasibility high on basis of other strategies and policies in place.

Land Use Planning

Effective land use planning with specific measures aimed at reducing the dependency on private vehicle use where new developments are proposed can assist in reducing pollution within an area. It is well recognised that through the use of appropriate planning and land use policies that an integrated approach to transport can be achieved.

Policy AP13:

The Borough Council will require the provision of new pedestrian and cycle links through development sites and encourage these links to integrate into existing routes.

Policy AP14:

The Borough Council will work to discourage development within the town-centre that places an emphasis on private vehicle use over public transport.

Policy AP15:

The Borough Council will require detailed air quality assessments of proposed developments where a proposed development is likely to have a significant impact on local air quality.

Policy AP16:

The Borough Council will (where necessary) use Planning Conditions or Section 106 Agreements to ensure that impacts of development on air quality are

determined. Such agreements are likely to include consideration of monitoring requirements and on the methodologies employed to determine impact.

Responsibility	BBC (Planning and Regulatory Services)
Air Quality Impacts	These options would curtail any inherent increase in traffic due to development, whilst simultaneously encouraging uptake of other forms of transport. Air quality impact on current (2003) levels likely to be negligible but ensures no worsening of air quality due to development in the future.
Non Air Quality Impacts	Positive: health benefits to be obtained from walking and cycling; reduced traffic growth for future years. Negative: could be seen as stifling development.
Perception	Positive by members of the public but may be slightly negative by developers.
Cost-effectiveness & Feasibility	Costs = Low. Feasibility high.

Sustainable Travel Plans

The Borough believes that there are benefits to be obtained in shifting to more sustainable transport modes. The Borough Council has appointed a travel plan co-ordinator to manage its own staff travel plan. The co-ordinator will work closely with major employers in the Borough to assist them in developing their own travel plans.

Policy AP18:
The Borough Council aims to implement a staff travel plan. A reduction target in private vehicle use of 20% has been set in order to assess the success of the travel plan.

Policy AP19:
The County Council is committed to establishing travel plans with large new employers within the Borough on a case-by-case basis.

Responsibility	LCC
Air Quality Impacts	The direct air quality impacts are likely to be reasonable as a result of travel plans within the Council land also with local employers, due to reductions in levels of traffic.
Non Air Quality Impacts	Positive: health benefits and increased sense of well-being, possible cost savings on individual travel expenditure Negative: possible increased journey times where service is poor
Perception	Positive.
Cost-effectiveness &	Costs = Medium. Costs to local businesses for set-up and

Feasibility	operation of travel schemes, although this may be off-set by increased in productivity. Uptake by local businesses wholly dependent upon buy-in. Success could be variable.
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Walk to Schools initiatives

It is well established that the way in which school pupils now arrive at school has changes significantly over the last decade. Not least, the so-called ‘school run’ can make a significant contribution to AM and PM peak hour traffic. As such, any initiatives aimed at reducing the reliance on private vehicle use aimed at encouraging a modal shift to alternative travel options may benefit the population and bring about additional health benefits.

Policy AP20:

The Borough Council will seek to promote walking as a healthy alternative to private vehicle use for short journeys within the town-centre.

Responsibility	Health Improvement Group BAP
Air Quality Impacts	The direct air quality impacts are likely to be negligible for the policy as a stand-alone entity. However, the policy has strength in the promotion of sustainable forms of transport.
Non Air Quality Impacts	Positive: health benefits to be obtained from walking Negative: security issues for streets where surroundings are not lit appropriately
Perception	Positive.
Cost-effectiveness & Feasibility	Cost = Low. Feasibility high.

Inland Waterway Distribution

‘Sustainable Distribution: A Strategy’ (1999) was one of the documents that spun out of the 1998 Integrated White Paper on Transport. The Strategy contains a number of proposed actions related to fiscal measures, international issues, strategic planning, rail freight, interchange, inland waterways and coastal shipping amongst others.

Improvements to strategic planing included closer consideration to freight. The Council endorses advice in Planning Policy Guidance note 13 that local authorities should encourage the carriage of freight by rail or water. The Council believes that current network of inland water channels may offer further potential for the distribution of freight from the Port of Boston.

Policy AP22:

The Council will seek to have included in the new Local Transport Plan the potential of the local inland waterway network for supplementing existing road distribution of freight.

Responsibility	British Waterways/ EA/LCC
Air Quality Impacts	The direct air quality impacts are likely to be negligible as a result of stand-alone policy.

Non Air Quality Impacts	Positive: safer roads Negative: increased activity adjacent to environmentally sensitive areas; costs to operators for switching from road to water transport modes
Perception	Positive.
Cost-effectiveness & Feasibility	Costs = Medium. Costs to existing operators to change will be high, whilst costs to new operators will be medium. Feasibility high.

Local Authority Pollution Control (LAPC)

The Environmental Protection Act, 1990, provides the necessary controls over industries with significant air pollution potential. Local authorities were given responsibility for smaller industries (known as Part B processes), whilst the Environment Agency act as regulator for larger industrial processes (known as Part A processes).

The results of the review and assessment process have highlighted that there are no significant industrial processes (large or small) within the Borough that lead to any direct exceedence of air quality standards. However, the Borough Council will continue to use its powers of authority to maintain the relevant level of regulation of industrial processes within the Borough. Where necessary, industrial process owners will be encourage to use Best Available Techniques (BAT) to further reduce any potential impacts on air quality, where adverse emission releases occur.

Environmental Protection Act 1990

Bonfires do not fall within the legislation of the Clean Air Act 1956 as they do not provide a means of creating domestic heat but merely a manner in which disposal of unwanted goods and waste can be achieved. They are an unnecessary source of air pollution within the Borough and can be regulated only through enactment of the Environmental Protection Act 1990, where a nuisance has been shown to arise.

Policy AP23:

The Borough Council will discourage the use of bonfires for waste disposal and distribute information on the effects of bonfires on air quality through leaflets and through the Council’s web-site. The Council will consider the introduction of green waste kerbside collection scheme.

Responsibility	BBC (Environmental Services)
Air Quality Impacts	The direct air quality impacts are likely to be reasonable for localised hot-spots where routine bonfires take place. Contribution to overall air quality within the Borough is likely to be negligible.
Non Air Quality Impacts	Positive: reduced likelihood of nuisance occurrence Negative: none identified
Perception	Positive by residents.
Cost-effectiveness & Feasibility	Costs = Low. Costs are small based on existing duties of Council’s Planning and Regulatory Services department. Feasibility high.

Continued provision of air quality data

The Borough has an extensive monitoring programme for NO₂ across Boston.

Two methods are used for monitoring nitrogen dioxide. A continuous monitor is sited within the Haven Bridge AQMA and gives continuous pollution readings 24 hours a day every day of the year. Elsewhere in the Borough NO₂ is monitored using diffusion tubes. These diffusion tubes give monthly average nitrogen dioxide concentrations. The sites for the diffusion tubes have been chosen to be representative of the worst case exposure for people likely to be affected by high nitrogen dioxide levels close to or inside the AQMA. The location of the diffusion tubes is reviewed annually. Monitoring is discontinued at sites where the results have shown that the nitrogen dioxide objective levels are being met consistently. New sites are chosen to give more information on areas where nitrogen dioxide levels are known to be high or where modelling predicts that they could be high enough to breach the objective level.

The monitoring programme will continue for the foreseeable future and the results will be published in the Reports of the next full round of Review and Assessment, which commenced in 2003. Any improvements resulting from this Action Plan will be reflected in the future monitoring results.

Policy AP24:

The Borough Council is committed to maintaining its existing level of monitoring and, where necessary, expand the diffusion tube network to take into consideration changes at the local level that may impact on air quality.

<p>Responsibility</p> <p>Air Quality Impacts</p> <p>Non Air Quality Impacts</p> <p>Perception</p> <p>Cost-effectiveness & Feasibility</p>	<p>BBC (Planning and Regulatory Services)</p> <p>None.</p> <p>Positive: Promotion of environmental issues.</p> <p>Negative: Could present a picture of worsening air quality despite all efforts by the Council to improve air quality through its action plan.</p> <p>Positive.</p> <p>Monitoring already in place. Estimated running costs of existing network ~ £15K per annum. Replacement of equipment ~ £6K - £9K per continuous monitor.</p>
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5.3 Measures considered but dismissed on grounds of cost or feasibility

The following section provides details of those additional measures considered by the Working Group but dismissed on the grounds of applicability, cost and feasibility. Their inclusion provides further transparency in the workings of the Group and the way in which the measures included within the plan have been derived.

A workplace parking levy

Based on charging workers for parking at their place of work, the implementation of a workplace parking levy could reduce the number of private vehicles entering Boston. The proposal is likely to be controversial and unpopular with voters and has therefore been dismissed on the ground of feasibility.

Roadside Emissions Testing

Under new powers of authority (Roadside Vehicle Emissions (Fixed Penalty) Regulations 2002) local authorities are able to undertake roadside emissions testing of vehicles. The aim is to identify those vehicles that make a disproportionate contribution to emissions through poor maintenance with on-the-spot fines for those that fail. The scheme of a formal roadside emissions testing programme is not considered viable for stand-alone authorities and has therefore been dismissed as a possibility for inclusion in the current action plan.

Low Emission Zone

A Low Emission Zone (LEZ) is a geographic zone defined for an area where vehicles of an acceptable emissions standard (normally Euro III) can enter and move around. The concept is held widely as a way of achieving air quality objectives within large urban area where economies of scale can be achieved with respect to set-up and operating costs. Further consideration to the implementation of an LEZ within Boston is dismissed on the grounds of cost alone.

Park & Ride Schemes

The possibility of a Park & Ride scheme married with parking controls within the centre of Boston could provide a means of reducing traffic congestion within the town-centre and the number of vehicles passing through the AQMA.

This option has undergone a qualitative appraisal by the Boston Transport Study Team and subsequently has been rejected.

Reduction in town-centre car parking

The Boston BC adopted Local Plan supports the aims of reducing travel needs and promoting modes of transport other than cars. The Borough Council has already developed a number of transport related themes to achieve this including:

- The application of car parking standards
- A gradual reduction in long-stay car parking in the town-centre in favour of short-stay car parking.

Further proposals aimed at reducing further car parking allocation within the town-centre of Boston is deemed too controversial for inclusion within the current plan.

Environmental Management Systems

An Environmental Management System (EMS) is a recognised approach for an organisation to reduce the impact of its operations on the environment. It contains a 'significant impacts' register covering all environmental effects on land, air and water. An EMS aims to set Key Performance Indicators (KPIs) to reduce the operational impacts on the environment. Such a system can lead to improvements in the local environment. As a key employer in the area it is recognised that Council staff represent a potentially

significant number of traffic movements on the local road network. This is recognised through the recent development of a Sustainable Travel Plan for the Council. As such, it is not deemed necessary that the Borough Council aims for formal accreditation for EMS implementation – in this case, in accordance with BS EN ISO 14001: 1996.

Freight Quality Partnerships

The development of a Freight Quality Partnership (FQP) was considered by the working party in respect of working in partnership with local freight operators and improving the efficient utilisation of vehicles within their fleet and with the view of highlighting the consequences of poor parking practices within the vicinity of delivery points, which can lead to local congestion. The impacts of FQPs on air quality are non-quantifiable. Given the nature of the through traffic component of HGV movements within the two AQMAs, it was deemed unlikely that significant benefits in air quality would be achieved. Consequently, it was felt that insufficient resources existed to justify the progression of FQPs within the remit of the air quality action plan.

5.4 Outcome of Consultation – the influence of engagement with relevant stakeholders

The Borough Council has undertaken an extensive consultation programme on the draft version of the air quality action plan (previously submitted for the Haven Bridge AQMA only) in order to gain the views of statutory consultees, relevant stakeholders and the public. The consultation period took place over a 7 week period and was advertised both in the local newspaper and on the Council's website. As a revision to an existing plan it is anticipated that further consultation on the revised Joint-AQMA plan will be required. However, it is likely that such responses would be similar to those obtained previously. Further details of the initial response to consultation of the Haven Bridge Action Plan are provided below.

Respondents to the consultation were asked three questions within the consultation questionnaire:

- 1) Which of the proposed measures contained within the draft action plan would be the best options to Boston Borough Council to implement in respect of improving air quality?
- 2) Which of the proposed measures contained within the draft action plan would be the worst options open to Boston Borough Council to implement in respect of improving air quality?
- 3) Do you have any other comments or idea in respect of what the Borough Council may do to improve air quality?

A total of 29 responses to the consultation were received. In addition, four statutory consultees responded with comments to the draft action plan, including: Boston Borough Council; Lincolnshire County Council; East Lincolnshire Primary Care Trust, and the Department for the Environment, Food and Rural Affairs.

In summary, in response to question (1) above, the following were identified as the best possible options to improve air quality:

- AP13 – The Borough Council will require the provision of new pedestrian and cycle links through development sites and encourage these links to integrate into existing routes (15 responses);
- AP3 – The Borough Council supports the development of a Transport Strategy for Boston (through the Transport Study) (13 responses);
- AP20 – The Borough Council will seek to promote walking as an alternative to private vehicle use for short journeys within the town-centre (13 responses);
- AP2 – The Borough Council supports the building of the Boston Southern Economic Corridor (12 responses);
- AP9 – The Borough Council will investigate the merits of introducing Park & Ride Schemes within Boston with a view to reducing volumes of traffic within the town-centre (7 responses);
- AP19 – The Borough Council is committed to establishing travel plans with large new employers within the Borough on a case-by-case basis (7 responses);
- AP1 – the Borough Council supports the building of the Boston Docks Link Road (6 responses).

The following measures were identified (by respondents) as those that appeared to be the worst options open to the Borough Council in respect of improving air quality:

- AP2 – The Borough Council supports the building of the Boston Southern Economic Corridor (9 responses);
- AP1 – The Borough Council supports the building of the Boston Docks Link Road (8 responses);
- AP22 – The Borough Council will seek to have included in the Local Transport Plan the potential of the local inland waterway network for supplementing existing road distribution of freight (7 responses);
- AP10 – The Borough Council aims, through the Local Plan, to explore the development of a railfreight interchange as part of the Southern Enterprise Zone for the Borough (6 responses);
- AP14 – The Borough Council will work to discourage development within the town-centre that places an emphasis on private vehicle use over public transport (6 responses);
- AP23 – The Borough Council will discourage the use of bonfires for waste disposal and distribute information on the effects of bonfires on air quality through leaflets and through the Council’s website (6 responses).

As can be seen from the list of ‘best’ and ‘worst’ options, measures AP1 and AP2 appear in both lists. The consultation has shown that respondents have a strong opinion on both of these infrastructure schemes, which remains divided. Neither of these roads is aimed specifically at easing congestion in the town and local opinion is currently divided with regards to whether small schemes such as the two link roads would assist in providing a solution to the town’s congestion problems, or whether, local lobbying for a bypass for the town should have a higher emphasis.

Following the results of the consultation exercise the following proposed measures have been dropped by the Borough Council due to problems with feasibility, escalating costs, funding, or unpopularity.

Cleaner fuels initiative for Borough and County Council service vehicles

The Borough Council currently has in its possession two Community Transport buses fuelled on Liquid Petroleum Gas (LPG). The main issue in respect of this proposed measure was to be seen to lead by example on reducing emissions from vehicles used by the Borough Council. For the Borough the provision of the two existing LPG buses provides sufficient evidence for this to occur. For the County, it has been deemed impractical for such a county-wide scheme to be implemented. As such, the measure has since been dropped.

Supplementary Planning Guidance to developers with respect to requests for air quality assessments for developments within the centre of Boston town-centre, or other areas where air quality is known to be a potential health issue.

This measure has been removed from the plan as a result of staff shortages, which would result in a delay to the production of any guidance to developers. The Borough Council propose to review the need for any guidance pending the outcome of development and planning control resource requirements.

Promote the work of Energy Savings Trust's PowerShift and CleanUp programmes

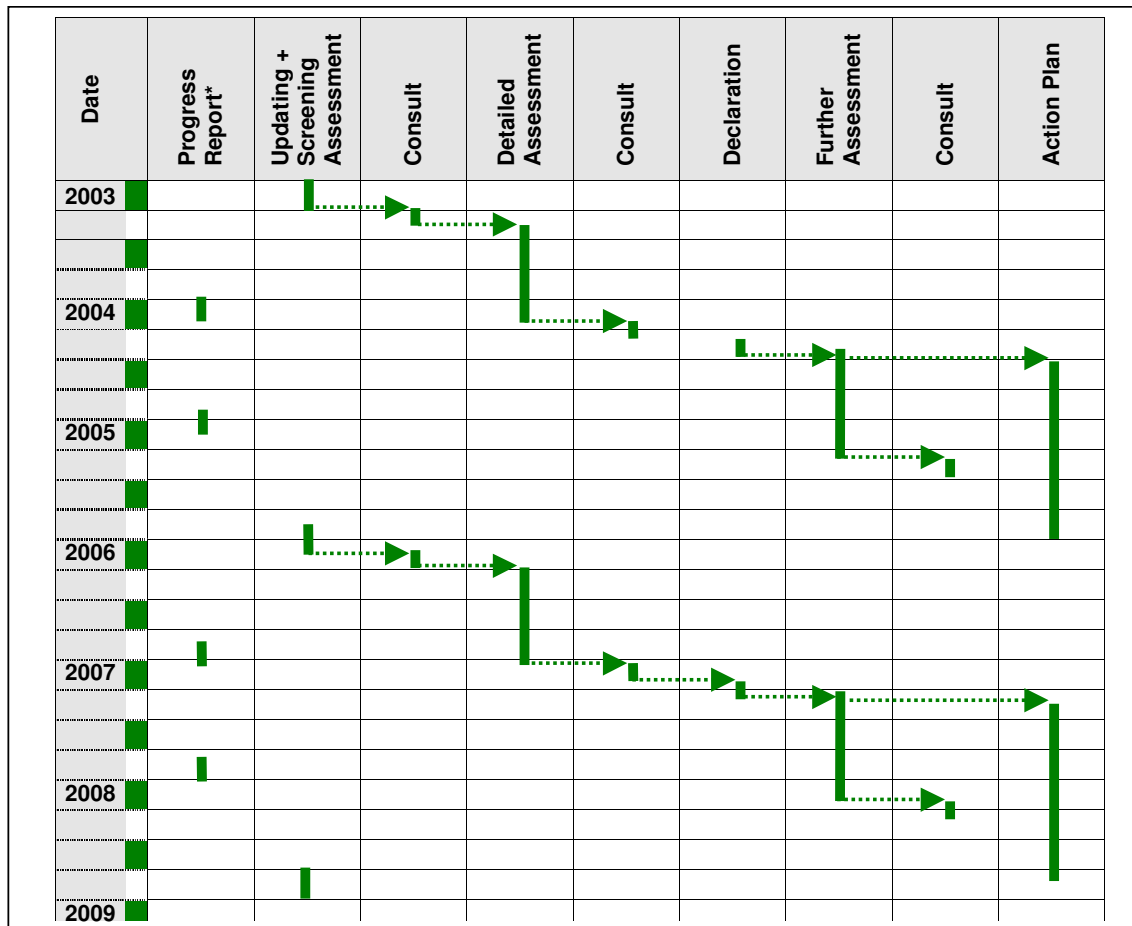
The Energy Savings Trust's funding programmes 'Powershift' and 'CleanUp' is currently on hold pending further negotiations between DfT and the European Union on new grants. The Council has therefore removed the original proposal (AP21) from this final action plan. The Borough Council will monitor the position of the funding status of new grants and provide any proposals related to local promotion of the schemes in future Progress Reports.

6 IMPLEMENTATION AND MONITORING

6.1 Future Monitoring of Implementation

Latest Policy Guidance (LAQM.PG(03)) issued to local authorities undertaking their continued duties on air quality has set out the future monitoring requirements of technical and policy issues. The exact timetable is shown in Figure 6.1.

Figure 6.1 Time-table for further reporting on LAQM issues, including updates on action plans.



The guidance on progress reporting indicates minimum reporting requirements expected by Defra and the Devolved Administrations. For action plan policies it is envisaged that a tabular summary of progress to date against the relevant policy would be enough. Where delays in achieving the implementation of the policy against the relevant time-scale have been encountered the local authority should indicate why delays have occurred, whilst additionally highlighting the revised time-table to which the policy measure would be assessed for future reporting.

6.2 *Monitoring the Effectiveness of the Local Transport Plan*

Many of the policies contained within this action plan are contained within the Local Transport Plan. In determining the effectiveness of the plan it is proposed that a number of follow-up assessments be undertaken. Those most relevant to the air quality action plan are shown below and include a comprehensive data collection programme. This includes a large number of traffic surveys (both manual and automated), cycle counts, journey time surveys, parking surveys and personal travel surveys.

Manual traffic surveys

Manual surveys are very flexible in terms of when and where they are done and the precise information that is collected. Most of those carried out are manual classified counts - a comprehensive programme consisting of regular fixed counts in the Spring and Autumn of each year.

Automatic traffic surveys

These monitor traffic continuously. They provide data over a long period of time that can be averaged and is therefore not distorted by one-off circumstances. This data does not give a break down of specific vehicle types.

Cycle automatic traffic counters

These operate continuously and provide an ongoing source of data on numbers of cyclists on these routes.

In addition to count surveys, the County Council propose to undertake journey-time surveys for buses.

Bus journey times

A programme of biannual 'on bus' surveys provides measurements of bus delays on each key transport corridor into and out of the Borough in both morning and afternoon peaks and between peaks. Results are compared against those of an unimpeded run so that it is possible to identify delay to a very localised level. This is particularly useful for measuring the impact of individual transport schemes.

The County Council will seek additional funds through its Local Transport Plan to undertake additional surveys aimed at monitoring the effectiveness of the measures contained herein. This includes consideration to traffic reduction targets, modal shifts in transport, improved journey times on buses and improvements in future air quality.

7 CONSULTATION

7.1 Council decision making

The Environment Committee of the Borough Council has approved the content of the previous action plan submitted in relation to the Haven Bridge AQMA only. It is anticipated that the revised plan will be submitted to the Environment Committee for approval in due course, following the outcome of further consultation with the following consultees and interested parties:

- Secretary of State – Defra
- Internal Departments within Boston Borough Council
- Lincolnshire County Council
- East Lincolnshire Primary Care Trust

GLOSSARY OF TERMS AND ABBREVIATIONS

AQMA	Air Quality Management Area
BAT	Best Available Techniques
BSP	Borough Spending Plan
CERC	Cambridge Environment Research Consultants Ltd
CFV	Clean Fuel Vehicles
CPZ	Controlled Parking Zone
CNG	Compressed Natural Gas – same as the gas many use for cooking but stored in a compressed form
Defra (DETR)	Department for Environment, Food and Rural Affairs (formerly Department of the Environment, Transport and the Regions (DETR)).
EA	Environment Agency
EST	Energy Savings Trust
Euro Standards	Europe wide vehicle standards that set progressively stricter emission limits for years 1996, 2000, 2006 and 2008 respectively. For example, Euro III and Euro IV.
FQP(s)	Freight Quality Partnership(s)
HGV(s)	Heavy Goods Vehicle(s)
LAPC	Local Authority Pollution Control
LAQM	Local Air Quality Management
LGV(s)	Light Good Vehicle(s)
LNG	Liquefied Natural Gas – a mixture of propane and butane, currently the most widely used cleaner fuel in the UK.
LP	Local Plan
Modal Shift	Change of method of transport from one to another e.g. moving from car use to other forms of transport such as walking, cycling or public transport
NAQS (AQS)	National Air Quality Strategy (Air Quality Strategy)

RPC	Reduced Pollution Certificate
SoS	Secretary of State (for the Environment)
t/yr (<i>t/km²/yr</i>)	tonnes per year - the amount of pollutant emitted within the period of one year (<i>also on an area basis (km²)</i>)
µg/m³ (<i>mg/m³</i>)	microgram per cubic metre (<i>milligrams per cubic metre</i>) For example, a nitrogen dioxide concentration of 1 µg/m ³ (<i>mg/m³</i>) means that one cubic metre of air contains one millionth (<i>one thousandth</i>) of a gram of nitrogen dioxide

REFERENCES AND FURTHER READING

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APPENDIX A: BOSTON AQMA BASELINE AND TARGETS

In setting the baseline and target for Boston AQMA areas, consideration has been made to the modelled worst case receptors in the area from the most recent Further Assessment (2005), in addition to recent monitoring results. Continuous monitoring of NO₂ concentrations is undertaken in the Haven Bridge AQMA, supported by 5 passive diffusion tube sites, and there are 6 diffusion tube sites within the Bargate Bridge AQMA. These monitoring sites provide a useful means of monitoring progress with the achievement of the Objective, although it should be noted that with respect to mandatory indicator LTP8, annual trajectories should be based on intermediate outcome indicators and not monitoring data (due to the meteorological variability influence on pollutant concentrations).

The maximum concentrations of annual mean NO₂ monitored and modelled in the AQMA areas are shown below in Table 1, with projections to 2010 taking into account reductions in NO₂ concentrations expected through national policies¹. The target set for Boston, takes into account the national policies in addition to what could realistically be achieved through the action plan measures proposed (which combined are expected to have a 'reasonable' impact) without the implementation of major infrastructure development. With the development of the Docks Link Road, this target could be more stretching.

AQMA Area	Location	Modelled/ Monitored	NO ₂ annual mean 2004 (in µg/m ³) Baseline	NO ₂ annual mean 2010 (in µg/m ³) Baseline^a	NO ₂ annual mean 2010 (in µg/m ³) Target
Haven Bridge	Haven Bridge continuous monitoring station	Monitored	40.8	33.3	32.3
Haven Bridge	John Adams Way (South) Roadside Diffusion Tube	Monitored	47.3	38.7	37.7
Haven Bridge	Receptor, Liquorpond Street	Modelled	42.4	34.7	33.7
Bargate Bridge ^b	Receptor, Bargate End	Modelled	43.3	35.4	34.4

Notes: a - Reductions through national policies included; b - Monitoring sites at Bargate End not included as short term data only currently available.

¹ Use of the latest update to LAQM.TG(03) projection factors (January 2006)

APPENDIX B: SUMMARY OF PROPOSED MEASURES:

	Description of Action	Dept/ Organisation Responsible	Time-scale (0 – 5 years)				Air Quality Benefit	Funding source	Cost
Package 3.1: Major Infrastructure Developments									
<i>Existing Measures</i>									
AP1	Boston Docks Link Road	LCC / BBC					✓✓✓✓	LTP/County	££££
AP2	Outer Distribution Road (aspiration)	LCC / BBC					✓✓✓✓	LTP/County	££££
Package 3.2: Local Intervention Measures									
<i>New (required) / Existing Measures</i>									
AP3	Boston Transport Study	LCC / BBC					✓✓✓	Secured	£££
AP4	Expansion of Community Travel Zone	LCC					✓✓	(required)	£££
AP7	Increased LPG provision	BBC					✓	(required)	££
									£
AP10	Through the Local Plan the Council will explore the development of a rail-freight interchange.	LCC / BBC					✓	(required)	£££
AP11	Designate a senior officer to take responsibility for transport-related issues within the Borough.	BBC					✓	(required)	£
AP12	Controlled Parking Zone Framework	BBC					✓	(required)	£
AP13	Encouraging walking and cycling routes for new development	BBC					✓	BBC	£
AP14	Discouraging development within the town-centre than places an emphasis on private vehicle use over public transport.	BBC					✓	BBC	£

APPENDIX B: SUMMARY OF PROPOSED MEASURES:

	Description of Action	Dept/ Organisation Responsible	Time-scale (0 – 5 years)				Air Quality Benefit	Funding source	Cost
AP15	Request detailed air quality assessments for proposed development that is likely to have a significant impact on local air quality	BBC					✓	BBC	£
AP16	Use of Planning Conditions or S106 Agreements	BBC					✓	BBC	£
AP18	Production of a Council Sustainable Travel Plan	BBC					✓	BBC	£
AP19	Promotion of Sustainable Travel Plans for large employers (more than 500 employees)	BBC					✓	(required)	£
AP20	Promotion of walking as a healthy alternative to car use for short journeys within the town-centre	BBC					✓	BBC	£
AP22	Investigation of inland waterways as complementary distribution methods for freight	BBC					✓	(required)	£
AP23	Discourage use of bonfires for disposal of waste	BBC					✓	BBC	£
AP24	Maintenance of current monitoring stations and networks	BBC					✓	BBC	£

APPENDIX C : UK AIR QUALITY STANDARDS AND OBJECTIVES

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene All authorities	16.25 µg/m ³	running annual mean	31.12.2003
Authorities in England and Wales only	5.00 µg/m ³	annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m ³	running annual mean	31.12.2003
Carbon monoxide Authorities in England, Wales and Northern Ireland only ^a	10.0 mg/m ³	maximum daily 8-hour mean	31.12.2003
Lead	0.5 µg/m ³	annual mean	31.12.2004
	0.25 µg/m ³	annual mean	31.12.2008
Nitrogen dioxide^c	200 µg/m ³ not to be exceeded more than 18 times a year	1 hour mean	31.12.2005
	40 µg/m ³	annual mean	31.12.2005
Particles (PM₁₀) (gravimetric)^d All authorities	50 µg/m ³ not to be exceeded more than 35 times a year	24 hour mean	31.12.2004
	40 µg/m ³	annual mean	31.12.2004
Sulphur dioxide	350 µg/m ³ not to be exceeded more than 24 times a year	1 hour mean	31.12.2004
	125 µg/m ³ not to be exceeded more than 3 times a year	24 hour mean	31.12.2004
	266 µg/m ³ not to be exceeded more than 35 times a year	15 minute mean	31.12.2005

- In Northern Ireland none of the objectives are currently in regulation. Air Quality (Northern Ireland) Regulations are scheduled for consultation early in 2003.
- The Air Quality Objective in Scotland has been defined in Regulations as the running 8-hour mean, in practice this is equivalent to the maximum daily running 8-hour mean.
- The objectives for nitrogen dioxide are provisional.
- Measured using the European gravimetric transfer sampler or equivalent.
- These 2010 Air Quality Objectives for PM₁₀ apply in Scotland only, as set out in the Air Quality (Scotland) Amendment Regulations 2002.

The 2010 objectives for PM₁₀ are not currently included in the Regulations for the purposes of LAQM in England, Wales and Northern Ireland. Consequently, authorities outside of Scotland have no obligation to review and assess air quality against them but some consideration of these longer-term objectives will be given in order to assist in long term planning. Where potential problems with these objectives are highlighted, they should be given additional consideration in future LAQM assessments and progress reports.