

Air Quality Action Plan: Chepstow, Monmouthshire

July 2011



Experts in air quality
management & assessment

Document Control

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1 Introduction and Aims of the Plan

Introduction

- 1.1 Air Quality Consultants (AQC) has been commissioned by Monmouthshire County Council to prepare an initial draft Air Quality Action Plan (AQAP) for Chepstow.
- 1.2 Part IV of the Environment Act, 1995, places a statutory duty on local authorities to periodically review and assess air quality within their area. The concept of Local Air Quality Management (LAQM) and the process of 'review and assessment' were established in the 1997 National Air Quality Strategy (NAQS)¹. In 2000, the Government reviewed the NAQS and set down the revised Air Quality Strategy for England, Scotland, Wales and Northern Ireland² (AQS). This established a revised framework with air quality objectives for seven pollutants, which were subsequently prescribed in the Air Quality Regulations 2000³. These were subsequently amended in 2002⁴. Since then, the UK Air Quality Strategy has been further reviewed⁵, but the objectives relevant for LAQM remain unchanged.
- 1.3 For each pollutant, local authorities have to consider whether the objective is likely to be achieved. Where it appears likely that an air quality objective is not being met, local authorities must declare an Air Quality Management Area (AQMA). Following the declaration of an AQMA, the authority must then carry out a further assessment of existing and likely future air quality and develop an AQAP that sets out the local measures to be implemented in pursuit of the air quality objectives.
- 1.4 Local Air Quality Management Policy Guidance Wales LAQM.PG(09) (W)⁶ published by the Welsh Assembly Government, provides guidance on the development of action plans. Action planning is viewed as the most important and significant aspect of the LAQM process, playing a key role in helping the UK Government deliver the air quality objectives and the EU limit values. The AQAP is expected to include the following:

¹ DoE (1997) The United Kingdom National Air Quality Strategy The Stationery Office

² DETR (2000) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland – Working together for Clean Air, The Stationery Office

³ DETR (2000) The Air Quality Regulations 2000, The Stationery Office

⁴ Defra (2002) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Addendum, The Stationery Office

⁵ Defra (2007) Air Quality Strategy for England, Scotland, Wales and Northern Ireland. (Cmd paper No 7169). <http://www.defra.gov.uk/environment/airquality/strategy/index.htm>

⁶ Welsh LAQM Policy Guidance (April 2009) <http://wales.gov.uk/docs/desh/policy/090421airqualitypolicyen.doc>

- quantification of the source contributions to the predicted exceedences of the objectives, to allow the action plan measures to be effectively targeted;
- evidence that all available options have been considered taking into account cost-effectiveness and feasibility;
- how the local authority will use its powers and also work in conjunction with other organisations in pursuit of the air quality objectives;
- clear timescales over which the local authority and other organisations and agencies propose to implement measures within the action plan;
- where possible, quantification of the expected impacts of the proposed measures and, where appropriate, an indication as to whether the measures will be sufficient to meet the air quality objectives; and
- how the local authority intends to monitor and evaluate the effectiveness of the action plan.

1.5 From April 2003, local authorities and local health boards in Wales have had a joint statutory responsibility to prepare and implement Health, Social Care and Well-Being (HSCWB) Strategies. The first round of Strategies covered the period 2005-2008. Amended guidance was issued (March 2007) to cover Strategies over the period of 2008-2011 including revisions to the regulations. There was a move to integrate Air Quality Action Plans into the 3 year cyclic HSCWB Strategies under the local government plan rationalisation agenda. However, the latest Welsh LAQM Policy Guidance⁶ recommends that where local authorities have existing AQMAs, they are only required to detail that declaration within their HSCWB Strategy (including dates, area covered, pollutants/ objectives covered etc.).

1.6 The National Society for Clean Air (NSCA)⁷ has also published two guidance documents entitled 'Air Quality Action Plans (2000)⁸' and 'Air Quality: Planning for Action (2001)⁹'. These guidance documents have also been taken into account in the development of this draft Action Plan.

Status of this report

1.7 This report sets out an initial draft of the Air Quality Action Plan (AQAP) for the Chepstow Air Quality Management Area (AQMA) in Monmouthshire. It describes the processes that are in

⁷ Now called Environmental Protection UK

⁸ <http://www.environmental-protection.org.uk/assets/library/documents/AQActionPlansInterim.pdf>

⁹ <http://www.environmental-protection.org.uk/assets/library/documents/AQActionPlansLAGuide.pdf>

place, and sets out the measures that are currently being considered to deliver improvements to air quality within the area. A qualitative evaluation of these measures has been prepared, but will require further work in close consultation with policy planners, development control officers and transport planners. As far as possible, the document includes an analysis of the measures that could be implemented together with an indication of the improvements that are expected. However, at this stage, confirmation of timescales and funding for the measures is not included.

2 Overview of Air Quality and Transport in Monmouthshire

- 2.1 Routine monitoring of nitrogen dioxide concentrations at Hardwick Hill, Chepstow has recorded exceedences of the annual mean objective at locations of relevant exposure. Monmouthshire County Council therefore decided to proceed immediately to declaring an AQMA for nitrogen dioxide at this location. The declaration was made in April 2007. The Chepstow AQMA encompasses properties either side of the A48 between the roundabout with the A466 to the west, and extending east just beyond the junction with the B4293 at Hardwick Terrace, as shown in Figure 1. An AQMA has also been declared for Bridge Street in Usk. An AQAP has already been drafted for Usk¹⁰ and therefore this report deals specifically with air quality in Chepstow.

¹⁰ Usk Air Quality Steering Group, 2009. Air Quality Action Plan for Usk, Monmouthshire. September 2009.

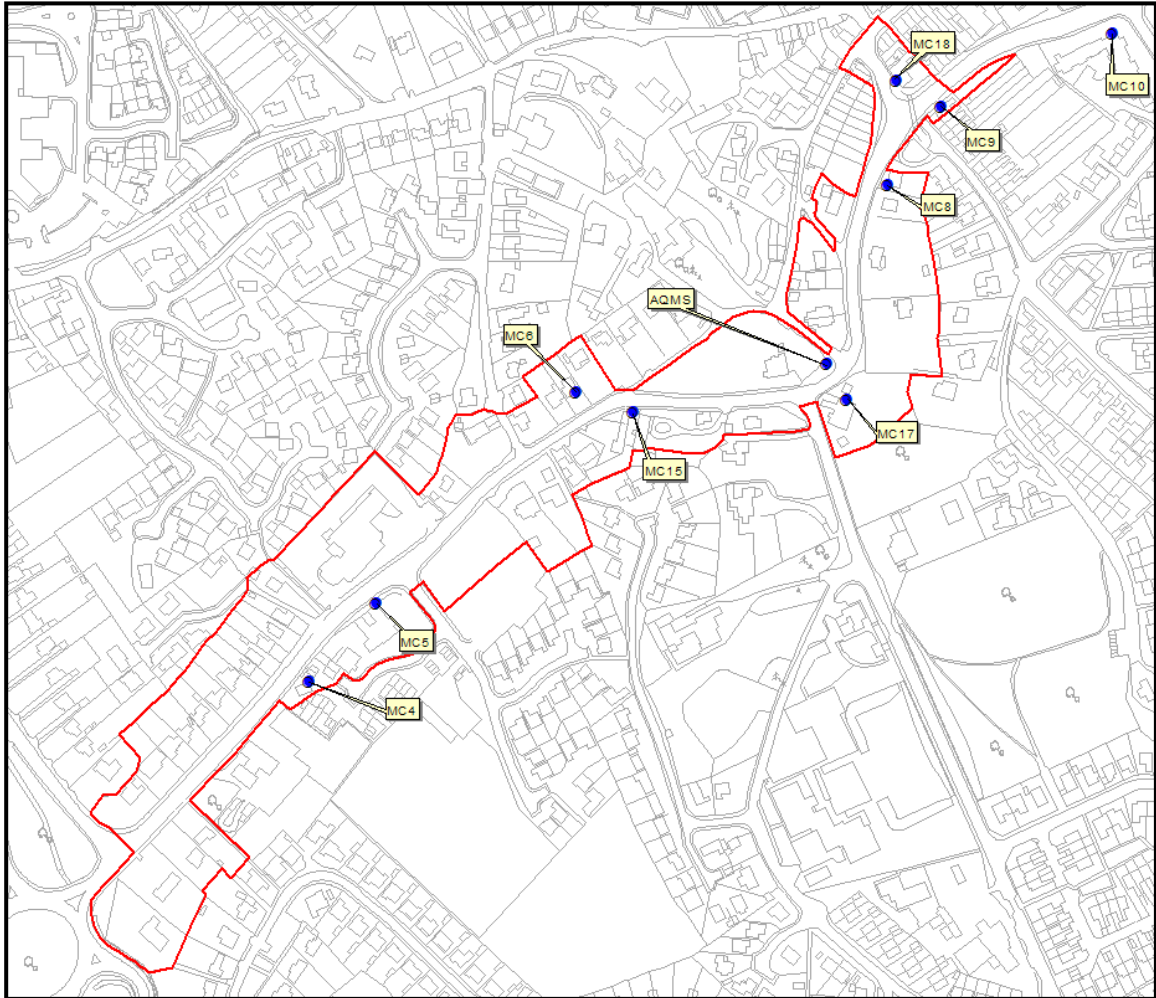


Figure 1: Chepstow AQMA (red line). Blue Dots Show Monitoring Locations. © Crown Copyright. Monmouthshire County Council. Licence no. 100019405



Figure 2: Hardwick Hill showing real time monitoring site



Figure 3: Steep section of Hardwick Hill where exceedences measured at relevant locations

Air Quality within the Chepstow AQMA

- 2.2 Following the declaration of an AQMA, authorities are required to carry out a Further Assessment. This is intended to confirm the conclusions of the Detailed Assessment, and provide information on source apportionment to assist the development of the Action Plan.
- 2.3 The Further Assessment¹¹ was based on monitoring carried out in 2007. This confirmed that there was a risk of exceeding the annual mean objective for nitrogen dioxide on Hardwick Hill. Both monitoring and modelling studies indicated that concentrations were above the objective. The exceedences were not widespread and focussed on the steeper section of the road. Contour plots of predicted annual mean concentrations showed exceedences of the annual mean nitrogen dioxide at the façades of eight residential properties, all of which lie within the existing AQMA boundary.
- 2.4 Recent monitoring data, provided in Figure 4, indicates that concentrations in 2009 were broadly similar to those in 2007; concentrations in 2008 were slightly higher¹². For the last 3 years, concentrations at Site MC15, which is adjacent to the steeper section of road, have been well above the objective (49-57 $\mu\text{g}/\text{m}^3$) (see Figure 1 for monitoring locations). In addition, marginal exceedences of the objective have been recorded at MC8 and at the

¹¹ Monmouthshire County Council 2008. Further Assessment of Air Quality in the Chepstow AQMA

¹² Monmouthshire County Council 2010. 2010 Air Quality Progress Report.

automatic monitor (AQMS). Elsewhere, concentrations are well below the objective. This monitoring confirms that exceedences of the objective are confined to locations within a few metres of the narrow steep section of Hardwick Hill.

- 2.5 It is important to note that 2010 is the year of attainment for the EU Limit Values for nitrogen dioxide. These are set at the same level as the UK objectives. Therefore, if measured annual mean concentrations in 2010 are above $40 \mu\text{g}/\text{m}^3$, the annual mean Limit Value will be exceeded in the AQMA. The Welsh Assembly Government has a duty to achieve these Limit Values. If these are not achieved then the UK Government could potentially be fined by the EU and these fines could be passed on to the Welsh Assembly Government.

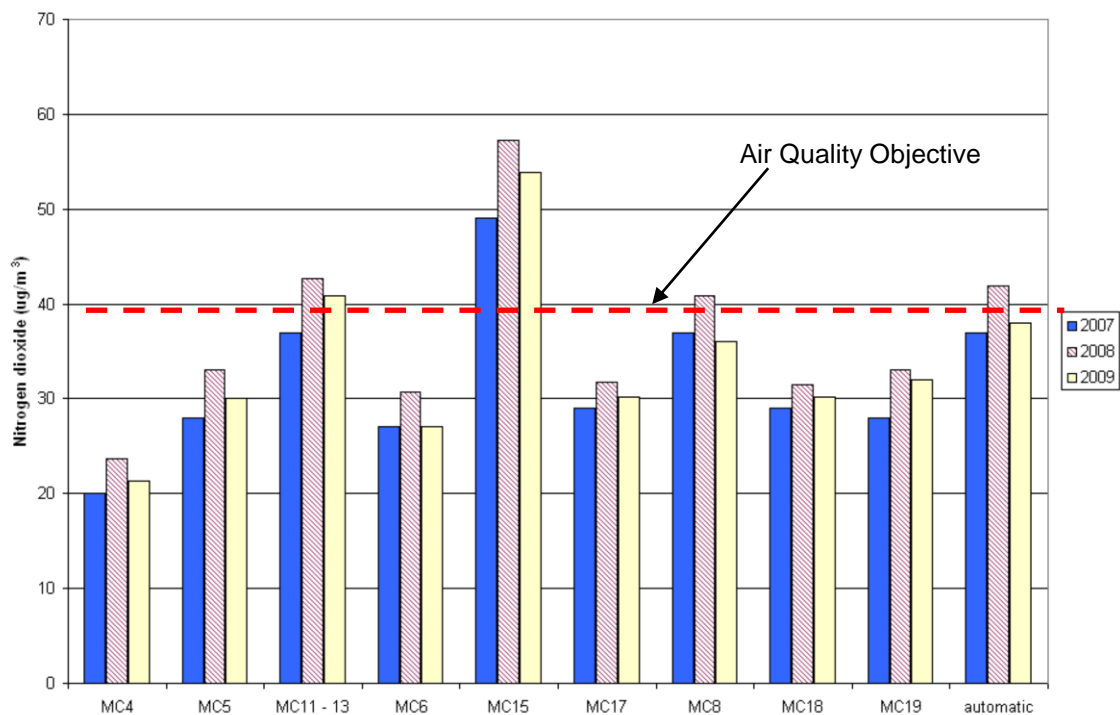


Figure 4: Measured Annual Mean Nitrogen Dioxide Concentrations in Chepstow AQMA (MC11-13 collocated with automatic monitor)

- 2.6 Source apportionment studies show that emissions from cars and HGVs contribute the largest proportion to the locally-generated road component (Figure 5). It also highlights that HGVs make a significantly higher local contribution to nitrogen dioxide concentrations than might be expected from the vehicle numbers and proportions. This highlights the importance of keeping all sources under consideration when contemplating measures to include within the Action Plan.
- 2.7 A reduction in the volume of traffic within the AQMA would result in a decrease in the concentrations of nitrogen dioxide. Based on predicted concentrations, a reduction in total vehicle emissions of 10% would have been required to achieve the annual mean air quality objective at the worst-case receptor locations in 2007. As discussed above, measured concentrations in 2008 were slightly higher and therefore total vehicle emissions may need to be reduced by more than 10% to achieve the annual mean objective at all relevant receptors.

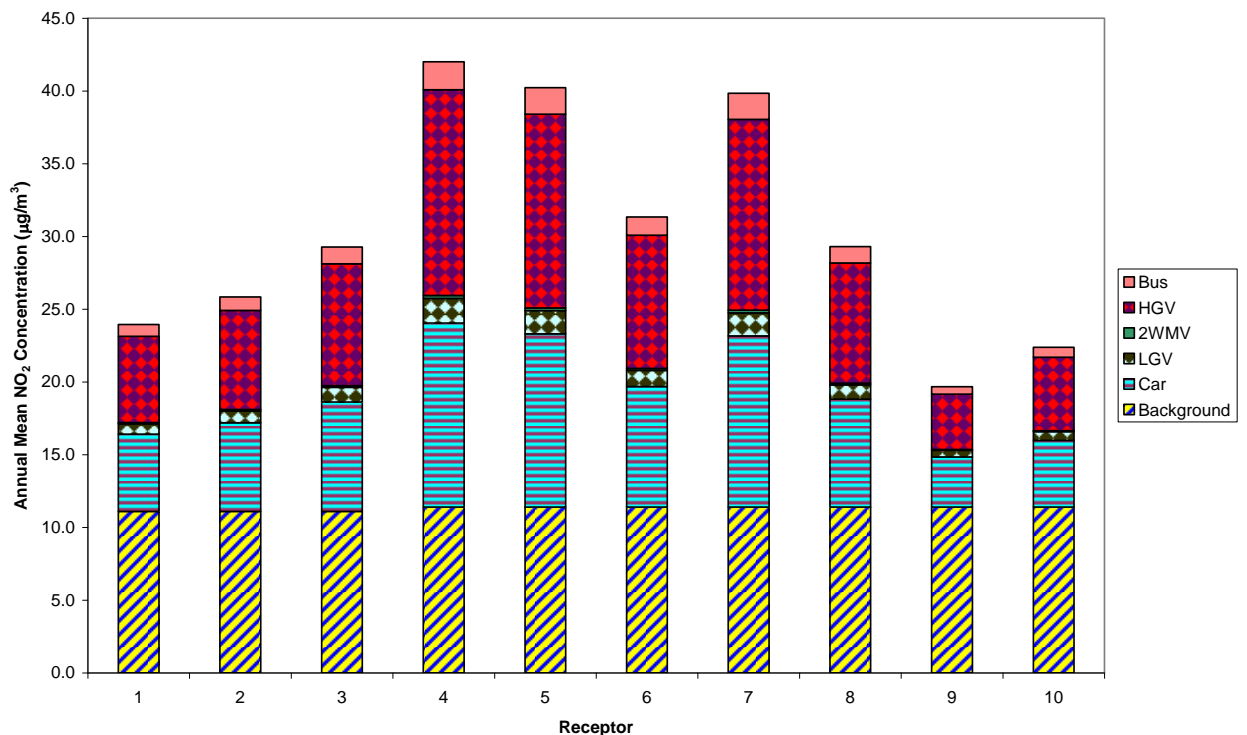


Figure 5: Relative Contribution of Each Source Type to the Total Modelled Annual Mean Nitrogen Dioxide Concentration ($\mu\text{g}/\text{m}^3$) at Worst Case Receptor Locations within the Chepstow AQMA. (Receptor locations all at relevant roadside locations within AQMA, apart from Receptor 10. Exact locations shown in Further Assessment¹¹)

Transport

2.8 Based on traffic data for 2010, 12-hour (7am-7pm) traffic flows on the A48 (Hardwick Hill) are around 24,500 vehicles per day, of which around 5% are HGV's or buses¹³. A report completed for the Welsh Assembly Government in 2004¹⁴ noted that, 'during the am peak the highway area in this area of Chepstow, although not saturated, is close to capacity'. It also noted that during the same period, queues regularly form westbound between the A48-A466 (High Beech) roundabout and the Station Road (Tesco) traffic lights, i.e. along the length of the AQMA. Another study carried out on behalf of Monmouthshire County Council²³ determined that the Congestion Reference Flow is being exceeded. For Hardwick Hill, this is

¹³ A48 Traffic Study. Capita Symonds. August 2010

¹⁴ A48 Chepstow-Priory Street-Station Road. Highway Engineering & Design Services Ltd. June 2004.

calculated to be a one-way flow of 9805, which is the flow at which the carriageway is likely to be 'congested' in peak periods on an average day.

- 2.9 The A48 in Chepstow is a part of the national road network, which is operated by Transport Wales. Therefore any actions that require changes to the A48 will be the responsibility of the Welsh Assembly Government. The status of the road within the national road network, limits the actions available, as restrictions cannot be implemented on the national road network.
- 2.10 The possibility of de-trunking this section of the A48 has been discussed in the past. If this does proceed, responsibility for the management and maintenance of the road would be passed to Monmouthshire County Council.
- 2.11 It is important to note that traffic movements on the A48 in Chepstow will be influenced by a number of factors. These include the growing number of Monmouthshire residents who commute to work to locations outside the County, in locations such as Cardiff and Bristol, and extensive housing growth in Gloucestershire, in areas such as Lydney. Traffic movements as a result of these changes will have a direct effect on flows on the A48, and will thus influence air quality in the AQMA. At the beginning of the Action Plan process there was little information on the make-up of the traffic passing through the AQMA and the reasons for the journeys being made. Therefore, as part of this process, an origin and destination survey has been completed to ensure that the Action Plan measures can be effectively targeted.
- 2.12 The A48 Traffic Study¹³, carried out by Capita Symonds, was completed in August 2010. This comprised of a registration survey on the A48 through Chepstow using video cameras and roadside interviews. Consideration was also given to historic data for the Severn Bridge. The key conclusions of the study were:
- Confirmation of anecdotal evidence that the westbound toll on the Severn Bridges is influencing the route choice, particularly for Other (heavy) Goods Vehicles (OGVs), meaning that OGV drivers travel westbound (uphill) through the AQMA to avoid the toll;
 - 54% of OGV movements are through trips, that do not stop in Chepstow;
 - 53% of car/Light Goods Vehicle (LGV) movements on the A48 are travelling to/from Chepstow and 20% are side road to side road trips (only 27% are through trips);
 - At the roadside interview location (on the A48 to the east of Chepstow), 83% of all vehicle trips and 65% of OGV trips originated from the Lydney/Ross-on-Wye/Cinderford area.

2.13 These results indicate that measures that can target those movements identified above could be the most effective. Such measures include:

- Reducing through OGV movements
- Improving access to and around Chepstow without the need to travel by private car;
- Reducing both car/LGV and OGV movements along the A48 in Gloucestershire.

3 Existing Policies and Strategies Relevant to Air Quality

- 3.1 This section examines a number of specific policies in place that have an important role to play in delivering air quality improvements in Chepstow. It is important to take account of national, regional and local planning, transport and economic policy, as it provides the context in which specific options for improving local air quality can be implemented.

Transport Policy

Wales Transport Strategy

- 3.2 The Wales Transport Strategy (WTS)¹⁵ sets out a goal to 'promote sustainable transport networks that safeguard the environment while strengthening our country's economic and social life'. It sets out a series of high-level outcomes and the steps to their delivery. This strategy underpins transport policy at the regional (i.e. South East Wales Regional Transport Plan) and local level.
- 3.3 One of the high-level outcomes identified is to, 'reduce the contribution of transport to air pollution and other harmful emissions'. There are two indicators set out by which achievement of these outcomes can be measured. These are:
- Emissions of harmful air pollutants attributed to the transport sector
 - Number of Air Quality Management Areas where transport is the primary cause
- 3.4 The document also sets out how these outcomes will be delivered. This includes aiming to reduce the environmental impacts of transport by taking action to reduce the effects on noise, severance, air and water pollution and biodiversity.

National Transport Plan

- 3.5 The National Transport Plan¹⁶ sits alongside the Regional Transport Plans in delivering the Wales Transport Strategy. Relevant measures incorporated in the plan are discussed in the next section.

¹⁵ Welsh Assembly Government 2008, One Wales: Connecting the Nation, The Wales Transport Strategy. April 2008

¹⁶ National Transport Plan. Welsh Assembly Government. March 2010.

South East Wales Regional Transport Plan (SEWRTP)

- 3.6 SEWTA (the South East Wales Transport Alliance), established in 2003, is a consortium of the 10 South East Wales local authorities, brought together to undertake some of their functions in relation to public transport and other transport matters. SEWTA produced an Outline Regional Transport Plan in 2007 on behalf of all the local authorities, which set out to address congestion and carbon emissions, as well as deliver the Welsh Assembly's aspirations for its Spatial Plan and Transport Strategy. The Draft Regional Transport Plan (RTP) was consulted on in 2008¹⁷.
- 3.7 The final South East Wales Regional Transport Plan (SEWRTP) was submitted to the Welsh Assembly on 30th September 2009¹⁸ <http://www.sewta.gov.uk/strategy.htm>. It's vision is;
'a modern, accessible, integrated and sustainable transport system for South East Wales which increases opportunity, promotes prosperity for all and protects the environment; where walking, cycling, public transport, and sustainable freight provide real travel alternatives.'
- 3.8 Within the document Chepstow is identified as one of the 14 'key settlements', around which high capacity transport links will need to be developed. No specific highways schemes are proposed for Chepstow, however, provision for rail and cycling schemes is allocated.
- 3.9 The aims and objectives of the SEWRTP are consistent with those of this Action Plan. It will be one of the major potential sources of funding for measures identified within the Action Plan.

Local Planning Framework

- 3.10 Land-use planning policy in Wales is established within the policy document Planning Policy Wales¹⁹ (PPW) and its updates which provide the strategic policy framework for the effective preparation of local planning authority development plans. PPW is supported by a series of Technical Advice Notes (TANs) and National Assembly for Wales Circulars. Local planning authorities have to take PPW, TANs and Circulars into account when developing Development Plans.
- 3.11 All local planning authorities in Wales are required to prepare Development Plans for their area, and in 2006 Monmouthshire's Adopted Unitary Development Plan (June 2006)²⁰

¹⁷ <http://www.sewta.gov.uk/>

¹⁸ <http://www.sewta.gov.uk/strategy.htm>

¹⁹ Planning Policy Wales (Welsh Assembly Government). March 2002.

²⁰ Monmouthshire's Adopted Unitary Development Plan, June 2006.

established the planning framework for 2006-2011. This report replaced both the Gwent Structure Plan (1991-2006) and Monmouth Borough Local Plan (1991-2006).

- 3.12 The environmental objective within the UDP is to '*encourage development in locations that seek to protect Monmouthshire's population from risks to their health and safety and minimise any detrimental environmental effects.*' A specific policy relates to pollution (ENV5), and states that '*all development proposals will be required to ensure that technical measures relevant to the activity are undertaken to prevent or minimise pollution.*' There is no specific reference to the local air quality management regime. Policy ENV5 is designed to ensure that development requiring planning permission, as far as possible, does not cause significant deterioration in existing environmental standards.
- 3.13 In 2004, the planning system in England and Wales underwent a significant change, with the Planning and Compulsory Purchase Act 2004 (the 'Act') replacing much of the Town and Country Planning Act 1990. The provisions in the Act intend to provide a more flexible plan-making system locally and regionally, with more community involvement and an improved development control process. The Act places a duty on the National Assembly for Wales to prepare a spatial plan. It abolishes Structure Plans and Local Plans, replacing them with Local Development Plans (LDPs), although the statutory status of Structure Plans, Unitary Development Plans, Local Plans or Structure Plans will be retained until LDPs are in place.
- 3.14 With respect to planning policy guidance, TAN (Technical Advice Note) 18 on transport²¹ makes reference to local air quality and the need for Air Quality Action Plans to be prepared for any Air Quality Management Areas declared.
- 3.15 In relation to the new requirements of the Planning and Compulsory Purchase Act 2004, the draft Preferred Strategy²² is the first formal consultation stage in the local development plan (LDP) process. It builds on the earlier Issues and Vision and Options participation stages, undertaken in August 2008 and December 2008/January 2009, and sets out the overall level of growth, broad locations for development and key areas of change/ protection in Monmouthshire. The outcomes were that development should be focused on key settlements (including Chepstow). The Preferred Strategy includes allocation for 400 new homes in Chepstow, with most of these being located on land at Lower Chepstow (brownfield sites at Maybe Bridge (formerly Fairfield Mabey) and Osbourne International). However, these sites need to be evaluated in detail as there are a number of issues to resolve, including flooding and transport implications. At the moment it is still early in the

²¹ Planning Policy Wales Technical Advice Note 18: Transport. Welsh Assembly Government, March 2007.

²² http://www.monmouthshire.gov.uk/downloads/Preferred_Strategy_Complete.pdf

process and plans would need to be consulted on and further work undertaken on feasibility etc.

- 3.16 A Strategic Transport Study of the LDP proposals has been carried out²³. This determined that within Chepstow the proposals in the LDP would lead to an additional 94 to 562 movements in the AM peak and 109 to 655 movements in the PM peak, depending on the strategy adopted and the rate of growth. Many of these would use the A48 Hardwick Hill.
- 3.17 Currently a Draft Deposit Local Development Plan has been completed and will be reported to Full Council on 1st July 2011 with a view to go out to public consultation in the Autumn.

Community Strategies

- 3.18 Part 1 of the Local Government Act 2000 placed a duty on each principal council in England and Wales to prepare a community strategy to promote and improve the economic, social and environmental well-being of their areas and to contribute to the achievement of sustainable development in the UK. Community strategies are intended to bring together all those who can contribute to the future of communities within a local authority area, to agree on the key priorities for the area and pursue them in partnership.
- 3.19 Monmouthshire's first Community Strategy 'Our Country, Our Future' was published in August 2004 and was revised in 2008²⁴. The Strategy describes the long term vision and priorities for the County up to 2020. It also contains an action plan that describes the steps that need to be taken over the next three years to deliver the priorities. The Strategy provides the overarching strategic framework for all other plans and strategies in the Authority. A number of underpinning policy aims are set out that will run throughout the Strategy.
- 3.20 Authority's work and help determine future priorities and actions:
- Social Justice – working towards a fair and equal society where everyone is treated the same;
 - Community Cohesion – to build strong and supportive communities that are able to work together;
 - Localisation – ensuring that whenever possible public services are provided close to where people live.

²³ Monmouthshire County Council Local Development Plan Strategic Transport Study. Capita Symonds. February 2009.

²⁴ http://www.monmouthshire.gov.uk/site/scripts/documents_info.php?documentID=221&pageNumber=4

Health, Social Care and Well-Being Strategies

3.21 Monmouthshire's Health, Social Care and Well-Being strategy 2011-14 forms part of a joint integrated plan developed with strategic partnerships in Monmouthshire including the Monmouthshire Locality Office of the Aneurin Bevan Health Board, Gwent Police, and Gwent Association of Voluntary Organisations. The document sets out an outcome based approach for protecting and improving health and wellbeing in Monmouthshire, which has been developed into four high-level outcome statements:

- People are able to live independently if they choose to do so and are able to exercise more control over their lives
- People are encouraged to manage their own health needs
- People who are vulnerable are protected from harm
- People feel included in their communities and can achieve their own potential

Climate Change and Sustainable Energy Strategy

3.22 This draft Action Plan recognises the importance of considering air quality in the context of other environmental areas, in particular climate change. As such, the measures proposed in this Action Plan take into account any significant impacts on climate change (both positive and negative) within the evaluation of specific measures (see Section 5).

3.23 In February 2008, the Climate Change and Sustainable Energy Strategy²⁵ was adopted. The Strategy summarises the work undertaken on climate change so far and sets out what needs to happen over the 5 years period from 2008-2013. In order that the objectives in the Climate Change and Sustainable Energy Strategy actually happen, detailed Action Plans have been produced for each of the themes in the Strategy, which include targets, timescales and responsibilities.

3.24 A number of action planning groups have been established to work towards progress with aspects of the Strategy, namely Housing, Transport, Monmouthshire County Council Estates, and Community Groups in each of Monmouthshire's three main towns (Abergavenny, Monmouth and Chepstow). Each group reports progress every 6-months. Further information is available on the Monmouthshire County website²⁶.

²⁵ http://www.monmouthshire.gov.uk/site/scripts/documents_info.php?documentID=705&pageNumber=1

²⁶ <http://www.monmouthshiregreenweb.co.uk/EPBmon/energyandclimatechangestrat.html>

3.25 In addition Monmouthshire County Council is now part of the Carbon Trust's Local Authority Carbon Management Programme and adopted a Carbon Management Plan in June 2009, which sets out plans to reduce Monmouthshire County Council's carbon dioxide emissions.

4 Specific measures for delivering air quality improvements in Chepstow

4.1 The drafting of this Action Plan has been driven by a Steering Group. Members of the Steering Group include Monmouthshire County Council Environmental Health, Transport, Development Plans and the Chepstow Area Committee officers, along with local Councillors and the local Friends of the Earth Group and officers from neighbouring Forest of Dean District Council and Gloucestershire County Council. Participants at the steering group meetings identified the initial list of potential measures to be considered for inclusion in the Action Plan. These initial measures were then supplemented by suggestions from two stakeholder workshops held on 21st October 2009 (further details are provided in Appendix 1). This chapter briefly describes each of these measures, prior to their evaluation in Chapter 5.

4.2 The measures are split into five 'categories' for ease of presentation. Suggestions from steering group meetings and both stakeholder workshops have been amalgamated, and where necessary refined. The categories are:

- Traffic Management
- Lowering Emissions
- Promotion of Alternatives
- Planning
- Education and Information.

4.3 For each proposed measure, this chapter identifies whether it has been discounted, or whether it will be taken forward for inclusion in the Action Plan. For those measures to be taken forward, some will require extra feasibility work prior to any final decision. This is also highlighted in this chapter.

Traffic Management

Road Tolling

4.4 Road pricing can be used to deter motor vehicles in areas of towns. Durham implemented a road pricing scheme in 2002 in a small area of the historic part of the city. The Durham

Road User Charge Zone aims to reduce traffic congestion, reduce pollution and improve air quality in the heavily pedestrianised historic streets of Durham peninsula. Durham has seen a reduction of 85% in vehicular traffic, from over 2000 to approximately 200 vehicles a day.

4.5 A report was commissioned in 2006 by Friends of the Earth (Cymru) to investigate the feasibility of road charging on the A48 in Chepstow²⁷. This concluded that 'several negative factors would currently count against a charging scheme being introduced in Chepstow', including:

- 'The provisions of the Transport Act 2000 have yet to be introduced by the National Assembly';
- 'Reducing congestion must be the primary objective of any road charging scheme, which would prove difficult to demonstrate given current traffic flows'²⁸;
- 'Public attitudes have been shown to be firmly against the introduction of a toll onto an existing road, even when the proceeds would be directly reinvested'.

4.6 The report also highlighted that improvements in public transport provision would be required in tandem with a road charging scheme. Since publication of the FoE report, the Local Transport Act 2008 (Commencement No.1 and Transitional Provisions) (Wales) Order 2009²⁹ has been introduced. This implements the provisions of the Transport Act 2000 and thus provides the legislation necessary to introduce road charging schemes. However, it is likely that it would continue to be strongly opposed by the majority of local residents and businesses. In addition, it is unlikely that funding would be available. There was very little support for this option at the stakeholder workshop.

This proposal has been discounted at this stage.

Bypass

4.7 The possibility of a bypass for Chepstow has been investigated a number of times over the years. Most recently Monmouthshire County Council supported the Chepstow A48 (T) outer bypass in the LTP 2000. However, it is not allocated in the Monmouthshire Development

²⁷ Owen Clark, Prof. Stuart Cole & Andrew Olden (2006) Chepstow Road Charging Study, on behalf of Friends of the Earth (Cymru). July 2006.

²⁸ This is no longer the case, as demonstrated by the Strategic Transport Study of the LDP²³

²⁹ <http://wales.gov.uk/publications/accessinfo/dnnewhomepage/transportdrs2/transportdrs2009/loctransptact08ord09/?lang=en>

Plan. In addition, there is no allocation within the Regional Transport Plan or the National Transport Plan³⁰.

- 4.8 This option had by far the greatest support at the stakeholder workshops, but there was also a reasonable amount of opposition. A bypass would significantly improve air quality within the AQMA and would also improve safety and living conditions for those living on Hardwick Hill. However, there would be negative impacts for people living alongside the bypass route. As the exceedence area only affects a small number of properties on Hardwick Hill, the costs of a bypass would almost certainly outweigh the benefits. In addition there could be a negative impact on the economy of the town if through traffic is reduced.
- 4.9 The costs of a bypass would be large and would take a long time to implement (10 years or more). The A48 at Hardwick Hill is not part of the 'core' or 'strategic' networks and therefore would be a low priority for funding of this type of scheme. The only possible source of funding would be from a developer as part of a planning application. In order to make this viable the development would need to be very large (1,000's of houses). There may be potential to investigate this option in relation to the large-scale development being promoted in Lydney (over the border in Gloucestershire).

This proposal will be subject to further investigation as part of the Action Plan.

De-trunking A48 Hardwick Hill

- 4.10 The status of the A48 Hardwick Hill as part of the national (trunk) road network, maintained by Transport Wales, limits the measures that can be taken to improve air quality. It would be difficult to justify an environmental weight limit on a trunk road. The National Transport Plan³⁰ includes an intervention to review the classification of the trunk road network. Transport Wales have indicated that they would consider de-trunking this section of road which would involve handing responsibility for maintenance to Monmouthshire County Council. This would then enable Monmouthshire County Council to consider additional measures, such as an environmental weight limit.
- 4.11 Monmouthshire County Council could require a number of measures be completed by Transport Wales to be completed before the hand-over is completed. This could be a potential source of funding for some of the other measures discussed below.
- 4.12 Following presentation of the Action Plan to the Lower Wye Area Committee on 8th June 2011, concern was raised by a Member regarding De-Trunking. It came to light that the

³⁰ National Transport Plan. Welsh Assembly Government. March 2010.

Member had raised a motion at Council on 13th October 2005. An extract of the meeting as follows, and it would be essential that these views are taken into account:

**EXTRACT OF COUNCIL MEETING – 13TH OCTOBER 2005
NOTICE OF MOTION - A466/A48**

12.- The following motion was moved by County Councillor P.A.D. Hobson,

Monmouthshire County Council notes the intention of the Welsh Assembly Government's to de-trunk the A466 from the Severn Bridge/M48 junction to the High Beech Roundabout and the A48 from the roundabout through Chepstow, turning at Bulwark Corner and continuing through the town to the border with Gloucestershire.

This council further notes that de-trunking of the road will pass the responsibility for maintenance and management of the route from the Welsh Assembly Government to the County Council.

This Council further recognises that the financial liability for any future by-pass of Chepstow would then fall upon local council tax payers.

This Council opposes the de-trunking of the A466/A48 at Chepstow, until the Welsh Assembly Government has constructed a by-pass around Chepstow and upgraded the existing A48 trunk through the town ready for a handover of responsibilities to take place.

During the debate members expressed concern on the following points:

- The need for a Public Inquiry over this issue.
- The need for the Council to consider the implications of this motion.
- The likely route of any proposed by-pass.
- The need to consider the status of the A48 on the English side of the River Wye.
- Although this issue was included in the Welsh Assembly Government's Draft Programme it had not yet been formally timetabled. The Council would be consulted by the Assembly when proposals were formally tabled.

Upon being put to the vote the following votes were cast:

For the Motion	-	18
Against the Motion	-	2
Abstentions	-	6

We resolved that the motion as set out above, be adopted.

This proposal will be subject to further investigation as part of the Action Plan.

Change the alignment.

- 4.13 Transport Wales have previously investigated potential for re-aligning Hardwick Hill to reduce the bend and thus improve road safety and vehicle flow up the hill. The scheme that was prepared required land-take from some properties near to the road and was strongly opposed by local residents. It is therefore unlikely that this proposal would be feasible.

This proposal has been discounted at this stage.

Redesign High Beech Roundabout.

- 4.14 There was a lot of support at the stakeholder workshop for improvements to the High Beech roundabout that would reduce the amount of queuing traffic on Hardwick Hill. This included the suggestion that a left slip road be introduced for vehicles traveling from Hardwick Hill. Any measure that reduced congestion on Hardwick Hill would be likely to improve air quality within the AQMA. However, queue lengths would need to be investigated to determine if this really would have any significant impact upon the AQMA. Funding has already been obtained from WAG to investigate potential options. If justified, this measure could be a requirement of the handover from Transport Wales.

This proposal will be subject to further investigation as part of the Action Plan.

Installing signals at the junctions of Bulwark Road and Moor Street

- 4.15 Safety issues on the A48 junctions with Bulwark Road and Moor Street have been highlighted by stakeholders and improving this to a signaled junction has been discussed. This measure could potentially increase concentrations of air pollutants at some locations as there is likely to be an increase in queuing traffic on the steep part of Hardwick Hill. As this plan is focused on reducing emissions and thereby improving air quality, this measure is discounted.

This proposal has been discounted at this stage.

Redesign Bulwark Road/Hardwick Hill junction

- 4.16 This junction is located at a bend in the road, within the steep section of Hardwick Hill where the highest concentrations are measured. There was a large amount of support at the stakeholder workshop for redesigning the Bulwark Road/Hardwick Hill junction, which could also be beneficial for road safety. A ban on right-hand turns out of the junction has been proposed in the Welsh Assembly Road Safety Programme. This will require vehicles wanting to turn right to travel up to the High Beech roundabout and back down the hill again, effectively increasing traffic movements and thus emissions within the AQMA. However, the diversion could also lead to some drivers choosing alternative routes and therefore emissions may not actually increase in the AQMA. Overall, the effect on air quality is likely to be imperceptible. Installing traffic lights would increase the requirement for vehicles to accelerate and decelerate on the hill, increasing emissions and therefore any proposals to do this would be opposed by Environmental Health. Due to the reasons outlined above, this measure has been discounted at this stage.

This proposal has been discounted at this stage.

Redesign Hardwick Terrace/Hardwick Hill junction.

- 4.17 This junction suffers from similar problems to the Bulwark Road junction, with one of the major issues being safety. Optimising this junction could improve vehicle flow and thus reduce emissions within the AQMA. Installing traffic lights is likely to worsen rather than improve air quality on Hardwick Hill, as a result of increasing stop/start driving. An assessment of this junction has already been carried out on behalf of WAG. This determined that there is very little scope for re-designing the junction due to engineering constraints. Therefore this proposal has been discounted at this stage.

This proposal has been discounted at this stage.

Remove Tesco (Upper Church Street) traffic lights.

- 4.18 It was noted at the stakeholder workshop that when these traffic lights were not operating, traffic appeared to flow more freely on Hardwick Hill. It was therefore suggested that the possibility of removing these lights be investigated. However, this observed effect may have been temporary as people are more cautious when approaching traffic signals that are not working. As soon as people start to assume a right of way, this effect would probably disappear and there would be road safety issues.

This proposal has been discounted at this stage.

Amend MOVA system at Tesco (Upper Church Street) traffic lights.

- 4.19 In March 2010 Transport Wales installed a MOVA system at the Tesco (Upper Church Street) traffic lights. This is a more advanced system for controlling the lights, which improves vehicle flow through the junction. There were initial problems when the system was first installed, which have now been rectified. The situation at this junction will be monitored and if further changes are required to the system, they will be discussed with Transport Wales.

This proposal will be subject to further investigation as part of the Action Plan.

Stop lorries following unsuitable routes specified by satellite navigation systems.

- 4.20 A number of stakeholders felt that lorries were following unsuitable routes, being directed by satellite navigation systems. This has led to congestion in the town, including the AQMA, when large vehicles have got stuck. It is possible to liaise with providers of map data and

satellite navigation systems to ensure that routes unsuitable for certain types of vehicles are highlighted. The feasibility of providing a specific mechanism to do this will be investigated as a part of the Action Plan.

This proposal will be subject to further investigation as part of the Action Plan.

Enforcing the speed limit on Hardwick Hill.

- 4.21 The speed limit on Hardwick Hill is currently 30 mph. At the stakeholder workshop it was suggested that better enforcement of the speed limited could be considered as a measure. However, for the majority of the day vehicles are complying with this limit and better enforcement would probably not have a significant impact on air quality within the AQMA.

This proposal has been discounted at this stage.

Weight or emissions limit for HGV's

- 4.22 The heaviest goods vehicles are likely to have the largest emissions and may also cause congestion, increasing emissions from other vehicles. By applying weight limits, this may reduce emissions from both the HGV sector and other sectors of traffic. This was the second most popular option (after a bypass) at the stakeholder workshop.
- 4.23 It was agreed in the initial steering group meeting that an origin destination study would be key to understanding freight issues and which of the options might be most effective. This study has now been completed¹³. It demonstrates that 54% of Other (heavy) Goods Vehicles (OGV) on the A48 are through trips and therefore do not necessarily need to travel through the AQMA. It also showed that around 100 more OGVs per day are travelling westbound than eastbound, i.e. avoiding the toll on the Severn Bridge.
- 4.24 An environmental weight limit will be difficult to introduce whilst the A48 remains a trunk road. Therefore the possibility of de-trunking this section needs to be investigated before further work can be carried out on this measure. It likely that there would be some opposition to an environmental weight limit from businesses in Lydney and an inquiry might be necessary. The process of de-trunking the road and then putting a weight limit in place would take several years and therefore this is a long-term measure.
- 4.25 Weight restrictions and emissions limits are difficult to enforce. A Lorry Watch scheme is currently running in Gloucestershire whereby local residents, police and trading standards are working together to enforce HGV restrictions. Where a resident spots an unauthorised HGV, this is reported to trading standards. Often this investigation stops the particular HGV contravening the system again. This sort of scheme is likely to be popular with residents, but this would need to be put in place following a weight limit order.

This proposal will be subject to further investigation as part of the Action Plan.

Restriction of times HGV's could use Hardwick Hill

- 4.26 There was a suggestion at the stakeholder workshop to reduce the movements of HGV's through the AQMA during peak times when congestion is greatest. This would improve air quality to a degree, as traffic can drive more smoothly when traffic flows are lowest, with less acceleration and deceleration leading to a reduction in emissions. In addition, restricting HGVs at certain times could encourage drivers to use alternative routes, and thus reduce the number of HGVs travelling through the AQMA.

- 4.27 There was support for this measure at the workshop. However, it would be difficult to enforce and could potentially lead to increased night noise for residents, particularly as a result of air brakes as lorries descend the hill. However, this will be investigated further, as part of the Action Plan.

This proposal will be subject to further investigation as part of the Action Plan.

Provision of distribution hubs.

- 4.28 The A48 Traffic Study concluded that around 35% of OGV trips along the A48 are traveling to side roads in Chepstow. A distribution hub on the edge of the town could be provided. This would allow all vehicles taking goods for delivery in the town centre to be dropped off at the hub. A single smaller vehicle would then be used to deliver goods within the town centre. This would reduce the number and size of lorries using Hardwick Hill.

This proposal will be subject to further investigation as part of the Action Plan.

Congestion charging in other towns/cities

- 4.29 It was noted at the stakeholder workshops that congestion charging in cities such as Bristol and Cardiff would reduce the number of commuters from Chepstow and the neighbouring areas travelling to these cities by car. However, this would be difficult for Monmouthshire County Council to influence and therefore has been discounted at this stage.

This proposal has been discounted at this stage.

Change toll system at Severn Bridge

- 4.30 There is a charge when travelling from England to Wales on the Severn Bridge but not when travelling from Wales to England. The A48 Traffic Study has confirmed that around 100 more OGVs travel uphill on Hardwick Hill than downhill, as they are using the route to avoid the toll. It was suggested at the stakeholder meeting that changing the toll system, i.e. charging to leave rather than enter Wales, would reverse this tendency, which could reduce emissions. However, there are concerns about the weight of queues on the bridge on the Wales side.

- 4.31 The concession period for the Severn Bridge toll is due for review in 2017 and the toll arrangements could potentially be changed. WAG are expected to lobby for removal of the bridge toll. This would reduce traffic on Hardwick Hill and thus have a positive impact on the AQMA.

This proposal will be subject to further investigation as part of the Action Plan.

Remove Severn Bridge

- 4.32 The removal of the Severn Bridge was suggested at the stakeholder workshop to reduce movements through Hardwick Hill towards the bridge. This is not a feasible option and it attracted the most amount of opposition and has therefore been discounted at this stage.

This proposal has been discounted at this stage.

Reducing Emissions

Climate Change and Sustainable Energy Strategy

- 4.33 The Council has a Climate Change and Sustainable Energy Strategy. Reducing emissions of climate change gases will normally reduce emissions of nitrogen oxides, which in turn will reduce concentrations of nitrogen dioxide. There are sub-groups for Housing, Transport and the Council's own estate, as well as groups for major towns, including Chepstow. These groups report progress on relevant actions twice a year.
- 4.34 The impact of many of these actions upon air quality in the AQMA, whilst beneficial, will be small in the short term. However, it will be important for there to be good communication between the groups responsible for the Climate Change and Energy Strategy and this Action Plan, in order to identify areas where the groups can work together, pool resources and ensure that work is not duplicated.
- 4.35 There are some existing measures within the Climate Change and Energy Strategy that are directly relevant to this Action Plan and these are discussed elsewhere in the document.

This proposal will be subject to further investigation as part of the Action Plan.

Promotion of Alternatives

Bus Park and Ride/Share

- 4.36 There are no formal Park and Ride facilities in Chepstow. It is considered that two schemes would be necessary, one along the A48 (to bring people into Chepstow) and one for longer journeys (e.g. into Bristol – discussed below). This would be an expensive option. A Park

and Ride site to the west of the AQMA could reduce the number of car trips travelling through the AQMA from the west but this would only have a positive impact on air quality, if the reduction in emissions from these vehicles was greater than emissions from the additional buses.

- 4.37 There was support for bus Park and Ride at the stakeholder workshops. However, the size of Chepstow is insufficient to support a dedicated Park and Ride buses for trips travelling into the town.
- 4.38 Provision is made for a Park and Ride site to facilitate longer journeys, for example into Bristol and Newport, in the South East Wales Regional Transport Plan. An agreement has been reached with the racecourse, near to the High Beech Roundabout, to allow parking at the site on non-race days. This would allow people to park and then car share. This would be most beneficial in reducing longer journeys across the Severn Bridge and towards Newport and thus this aspect would not have a significant impact on the AQMA. However, if scheduled bus services can be diverted to stop at the site, then people could use this to avoid driving into Chepstow via Hardwick Hill and therefore reduce car emissions in the AQMA without increasing bus emissions.

This proposal will be subject to further investigation as part of the Action Plan.

Rail Park and Ride

- 4.39 There are proposals within the South East Wales Regional Transport Plan to promote the use of Chepstow and Severn Tunnel Junction railway stations as Park & Ride facilities. Whilst the encouragement of modal shift is an aim of the Action Plan, it will be important to monitor proposals to ensure that they do not increase traffic on Hardwick Hill and thus have a negative impact upon the AQMA.

This proposal will be subject to further investigation as part of the Action Plan.

Support rail freight

- 4.40 The National Transport Plan promotes increased freight movements by rail. This includes continued provision of Freight Facilities Grants to support transfer of freight from road to rail. There are also proposals within the South East Wales Regional Transport Plan to promote the use of rail freight. As part of the Action Plan MCC will also seek to support increased transfer of freight from road to rail.

This proposal will be subject to further investigation as part of the Action Plan.

Encouraging car sharing schemes.

- 4.41 Car sharing refers to the practice of drivers sharing the journey with someone else who would otherwise have driven. Websites such as www.sewtacarshare.com provide a useful database for finding and offering lifts both on a regular basis, but also for one-off journeys and events. This could be particularly beneficial in Chepstow, where a high number of people commute to work outside of the town. There is particular incentive for people working in Bristol to car-share to reduce the costs of using the Severn Toll Bridge.
- 4.42 There are ad-hoc schemes where people park in laybys on the A48 and share cars over the Bridge (these wouldn't be beneficial for the Hardwick Hill as sharing occurs once the cars have passed through the AQMA). Monmouthshire County Council could promote car sharing through established websites, or set up their own scheme within the Council.

This proposal will be subject to further investigation as part of the Action Plan.

Improving rail services to the town

- 4.43 Chepstow station is located after Lydney on the line between Gloucester and Severn Tunnel Junction. Trains to Gloucester/Birmingham and Newport/Cardiff are approximately hourly at peak times and approximately 2-hourly outside peak hours. Journeys to Bristol are a similar frequency and require a change at Severn Tunnel Junction, which leads to journey times of an hour or more. This does not compare favourably with journey times by car.
- 4.44 It is apparent that increased train services, would be required to make train travel a viable alternative for the high number of people commuting out of the area by car. Improvements to this service could reduce the number of through commuters from Lydney as well as the Chepstow area and housing growth in Lydney could support the required changes. There are currently signalling issues that make it impossible to travel directly to Bristol, however, it is understood that these could be resolved. Increasing the number of through trains stopping at Chepstow could increase the number of services between Gloucester/Birmingham and Newport/Cardiff. There was a great deal of support for this at the stakeholder workshop.
- 4.45 The South East Wales Regional Transport Plan includes provision of increased services at Chepstow station within its Prioritised Investment Programme. It will be important for Monmouthshire County Council to monitor progress and lobby the relevant bodies to ensure that this is implemented.

This proposal will be subject to further investigation as part of the Action Plan.

Upgrading the railway station

- 4.46 Chepstow railway station is less than 400m from the town centre. It has limited facilities, with no waiting room, shop, taxi rank, bus stop or cycle facilities and the café has limited opening hours. In addition, there is no disabled access to the westbound platform. These issues were all discussed at the stakeholder workshop, as it is recognised that these limited facilities deter people from using the station, particularly as the waiting time between trains can be so large. Upgrading these facilities would make train travel more attractive.
- 4.47 A package of measures to improve stations across the region is included in the South East Wales Regional Transport Plan. It will be important for Monmouthshire County Council to monitor progress and lobby the relevant bodies to ensure that Chepstow station receives this investment.

This proposal will be subject to further investigation as part of the Action Plan.

Improving bus services

- 4.48 There was a lot of support for improvements to bus services within the town. Areas that were highlighted were; improvements to frequency, flexibility and reliability of services, better information and integration with train services and reductions in cost. Of these issues, reliability was felt to be one of the greatest barriers to people using public transport.
- 4.49 Chepstow is not on any of the bus corridors identified in the South East Wales Regional Transport Plan for priority bus capital investment, so any investment would be required at a local, rather than regional level.

This proposal will be subject to further investigation as part of the Action Plan.

Improving public transport integration

- 4.50 There are proposals within the South East Wales Regional Transport Plan to improve public transport integration. These include improving bus access at Chepstow railway station, providing a single format for public transport information across the region and a better integrated ticket system. The Council will need to ensure that these proposals are carried forward and enhanced where necessary.

This proposal will be subject to further investigation as part of the Action Plan.

Travel Plans

- 4.51 Monmouthshire County Council has a travel plan for staff based at County Hall but not those based in Chepstow. A travel plan aimed specifically at these staff could reduce emissions within the AQMA.
- 4.52 The Transport group for the Climate Change and Sustainable Energy Strategy have a target to explore the viability of a self funding Green Travel Plan officer, to assist developers. This would also have a beneficial impact on the AQMA.
- 4.53 The Council could offer travel planning advice to any large employers in Chepstow.

This proposal will be subject to further investigation as part of the Action Plan.

Measures relating to reducing schools traffic

- 4.54 Safer routes to school schemes are already underway and are supported by Sustrans (which include School Travel Plans). A successful Safer Routes in Communities (SRiC) bid has allowed a number of measures to be introduced. This includes providing a safer walking

route from the Bulwark side of town, crossing the A48(T). Targets for schools traffic are also included in the (SRiC) scheme.

- 4.55 School traffic has been highlighted in relation to Thornwell Junior School. Laybys next to the school are often used for local parking and hence not available for school waiting. There are also cross border issues with children going to Wyedean School in Gloucestershire (and vice versa).
- 4.56 A suggestion was made at the stakeholder workshop that a shuttle bus could be provided from schools to the town centre and/or rail station to allow parents to walk to school with the children and then continue their journey to work on the shuttle bus.

This proposal will be subject to further investigation as part of the Action Plan.

Improving cycling facilities

- 4.57 Improving facilities for cyclists, both those that make cycling safer and provision of amenities such as showers and secure storage at destinations encourages more people to cycle and thus reduces trips by car.
- 4.58 Hardwick Hill is steep and narrow in parts, which makes it unattractive to cyclists. Provision of a segregated route or clear signage of an alternative route would be beneficial. One of the suggestions at the stakeholder workshop was the provision of bike racks on the back of buses, which would allow cyclists to catch the bus up the hill and then continue their journey.
- 4.59 Safe Routes in Communities funding has been secured (£630,000) for measures to improve walking and cycling routes in Chepstow.
- 4.60 Transition Chepstow are in the process of developing a walking/cycling map of the town. This would particularly assist people in identifying safe routes for cycling around the area.
- 4.61 Sustrans have submitted a planning application for the Wye Valley Cycle Route. This would follow the disused railway line between Chepstow, Brockweir and Tintern. The route would provide an opportunity for people to cycle on car-free routes, which would encourage more people to cycle in the area. This could have a beneficial impact on reducing car journeys in the AQMA.

This proposal will be subject to further investigation as part of the Action Plan.

Chepstow Integrated Transport Study

4.62 Capita have recently been commissioned by SEWTA to carry out a study of integrated transport in Chepstow. This will consider many of the options discussed above and is an opportunity to identify additional measures that may contribute to improving air quality in the town. It will be an important part of this Action Plan to ensure that the potential impacts on the AQMA are taken into consideration within this study.

This proposal will be subject to further investigation as part of the Action Plan.

Planning

Promote sustainable transport within new developments

4.63 New developments provide an opportunity to improve access to sustainable transport. All sites allocated within the LDP need to have good access to sustainable transport and services. Opportunities to promote sustainable transport within new developments include safe walking and cycle routes, travel plans and information packs. In addition, contributions for improving public transport provision may be sought from developers. Therefore possible mechanisms for maximising these opportunities will be investigated as part of the Action Plan.

This proposal will be subject to further investigation as part of the Action Plan.

Town Centre developments

4.64 It is generally accepted that provision of mixed-use developments within town centres is more sustainable. Placing housing near to shops, services and public transport links reduces the need to travel and thus traffic movements. However, at the stakeholder workshops there appeared to be opposition to the principle of town centre development, which was seen as likely to increase the number of traffic movements in and out of the town via the AQMA. This highlights the need for appropriate assessment of the air quality impacts of future developments to determine such impacts and ensure that adequate mitigation is provided, where necessary.

This proposal will be subject to further investigation as part of the Action Plan.

Out of town developments

4.65 As discussed above, some attendees at the stakeholder workshop supported out of town, as opposed to town centre development. This would actually increase traffic movements within the AQMA, as more people would need to travel by car to use shops and services within the

town centre. This is contrary to national policy to reduce reliance on private car and therefore will not be considered further.

This proposal has been discounted at this stage.

LDP Policies

- 4.66 It is imperative that appropriate policies covering air quality are included in the Local Development Plan, as new developments must be considered in relation to these policies. The presence of a suitable policy, or policies, will be particularly useful where a refusal of planning permission leads to an appeal and subsequent public inquiry. Therefore appropriate policies should be developed in Monmouthshire County Council's Local Development Plan.

This proposal will be subject to further investigation as part of the Action Plan.

Developments in adjoining areas

- 4.67 A large amount of development (around 5,000 dwellings and employment uses) is proposed within the adjoining Forest of Dean, much of which will be focussed in the Lydney and Cinderford areas. The A48 Traffic Study demonstrated that 83% of traffic travelling to the A48 originated from the Lydney / Ross-on-Wye / Cinderford area. Traffic from these developments could therefore have an impact upon the AQMA. It will therefore be important to ensure that these effects are quantified and that measures are put in place to minimise these impacts. This will require cross boundary working to ensure that these impacts are managed appropriately.

This proposal will be subject to further investigation as part of the Action Plan.

Council integration on planning issues

- 4.68 It is important to ensure that there is integration within the Council on air quality and planning issues. A mechanism should be in place to ensure that all policies or development applications that could affect the AQMA are adequately assessed.

This proposal will be subject to further investigation as part of the Action Plan.

Education and Information

Origin and Destination Survey

- 4.69 At the beginning of the Action Plan process, the origins and destinations of vehicles travelling through the AQMA were not fully understood. Although anecdotal evidence suggested that there are a high number of lorries avoiding the Severn Bridge toll and commuters to Bristol and Cardiff an origin and destination survey was completed¹³ in order to inform this study. This has provided a greater understanding of the issues and enabled measures within the Action Plan to be appropriately targeted.

This action is now complete.

Education of HGV operators

- 4.70 It was suggested at the stakeholder workshop that HGV operators should be educated about the impact of their choice of route upon the AQMA. This could usefully be carried out following the origin and destination survey and in conjunction some of the other measures proposed to reduce lorry emissions within the AQMA.

This proposal will be subject to further investigation as part of the Action Plan.

Provide information for residents on alternative options

- 4.71 It is important to educate residents about the existence of the AQMA and provide information about alternative transport options, including the health benefits of walking and cycling. Provision of a leaflet setting out all relevant bus and rail timetables could be particularly useful.

This proposal will be subject to further investigation as part of the Action Plan.

Other

Engage Welsh Assembly Government Transport Department

- 4.72 At the beginning of the Action Plan process, there had been little discussion between Monmouthshire County Council and the Welsh Assembly Government about the AQMA. The development of this Action Plan has been catalyst for initialising discussions with the

Welsh Assembly Government and the measures proposed have taken into account these consultations.

This action is now complete.

NOx reducing paint

- 4.73 As the exceedence of the air quality objective is confined to a small area, it may be appropriate to paint surfaces between the road and sensitive receptors with NOx reducing paint. However, studies into the effectiveness of this measure have shown conflicting conclusions³¹. Therefore this proposal has been discounted.

This proposal has been discounted at this stage.

Improve cross-boundary working

- 4.74 Improving cross-boundary working is particularly important in Chepstow, which borders not only another local authority (Forest of Dean) but also another country (England). The development of this Action Plan has already improved cross-boundary working, as officers from Forest of Dean District Council and Gloucester County Council have been involved in the Steering Group. The aim now is to continue dialogue with officers responsible for air quality, transport and planning to ensure that developments and changes in one area do not have negative impacts in another, in particular within the Chepstow and Lydney AQMA's. Two areas where this could be beneficial are reducing HGV traffic through the AQMA and joint lobbying for improved rail services that would affect commuters in both Chepstow and the Forest of Dean.

This proposal will be subject to further investigation as part of the Action Plan.

Cut down trees

- 4.75 A measure that was suggested at the stakeholder workshop and that received some support was to cut down trees to improve air flow. A comment made at the workshop was that this would decrease NOx, which is not actually the case and therefore this measure has been discounted at this stage.

This proposal has been discounted at this stage.

³¹ Local Measures for NO₂ Hotspots in London. Transport for London, March 2010.

Flatten gradient/provide tunnel

- 4.76 At the stakeholder workshop it was suggested that flattening the gradient of Hardwick Hill would reduce emissions, as vehicles would not be under increased load travelling up the hill. However, this is unlikely to be feasible and therefore has been discounted at this stage.

This proposal has been discounted at this stage.

Do nothing

- 4.77 A suggested measure raised during the stakeholder workshops was to do nothing, on the basis that government projections anticipate that air quality will improve in the future as a result of changes in vehicle technology. Recently however, a disparity between the road transport emission projections and measured annual mean concentrations of nitrogen oxides and nitrogen dioxide has been identified. Across the UK, there has been little evidence of a significant downward trend in nitrogen dioxide concentrations over the past 8 years; this pattern is mirrored by the local monitoring data presented in Figure 4, which indicates that there are no clear trends in monitoring results for the past three years. These empirical data contrast with the expected decline due to the progressive introduction of new vehicles operating to more stringent standards. The precise reason for this disparity is not fully understood, and is currently under investigation, but it is thought to be related to the actual on-road performance of diesel road vehicles when compared with calculations based on the Euro standards. Recent guidance issued by Defra suggests that the Euro standards will deliver only marginal, if any, reductions in nitrogen dioxide concentrations until the Euro 6 emission standards begin, as is currently forecast, to play a major role (i.e. *circa* post-2015). Measured nitrogen dioxide concentrations are around $55 \mu\text{g}/\text{m}^3$ at the worst-case location, which well above the objective of $40 \mu\text{g}/\text{m}^3$. If an Action Plan is not implemented, the objectives will continue to be exceeded for the foreseeable future. A “Do nothing” scenario is not a viable option, and is one that would run counter to the legislation requiring local authorities to develop an Action Plan in pursuit of meeting the objectives. This option was unanimously opposed at the stakeholder workshop and therefore has been discounted at this stage.

This proposal has been discounted.

5 Evaluation of options

5.1 The identified measures have been set out in Table 1, and evaluated against four specific criteria:

- air quality impact (i.e. reduction in emissions or concentrations);
- cost of measure;
- feasibility or practicability of option (including the wider non-air quality impacts); and
- timescale for implementation.

Air Quality Impact

5.2 Air quality impacts have been classified using a score of 1 to 5 to represent 'low' to 'high' impact. The higher the score, the greater the improvement to air quality (i.e. a reduction in nitrogen dioxide concentrations). For each measure, the expected reduction in annual mean nitrogen dioxide concentration has been determined based on professional judgement, drawing wherever possible on experience gained from other studies. The following classification scheme has been used:

Low (Score 1): *imperceptible* (a step in the right direction). Improvements unlikely to be detected within the uncertainties of monitoring and modelling;

Medium (Score 3): *perceptible* (a demonstrable improvement in air quality). An improvement of up to $2\mu\text{g}/\text{m}^3$, which could be demonstrated by a modelling scenario. Improvement is not likely to be shown by monitoring due to confounding factors of the weather;

High (Score 5): *significant*. Improvement of more than $2\mu\text{g}/\text{m}^3$. Can be clearly demonstrated by modelling or monitoring (a significant improvement is likely to be delivered by a package of options rather than by a single intervention).

Cost

5.3 The implementation of the measures set out in this draft Action Plan are dependent on securing a sufficient and consistent level of funding both to support any additional staff that may be required, and to deliver the programme. In line with current Government guidance, it is not necessary to carry out a detailed cost-benefit analysis. Rather the aim is to provide a broad indication of costs so that the proposed measures can be ranked according to the cost

and the expected improvement to air quality. A score of 1 to 5 represents “very high” to “very low” costs, as follows:

- **‘Very Low’ (Score 5)** cost is taken to be £5K and under,
- **‘Low’ (Score 4)** cost is taken to be £5 - £50K,
- **‘Medium’ (Score 3)** cost is £50 - 150K,
- **‘High’ (Score 2)** cost is £150K - £2 million and
- **‘Very High’ (Score 1)** cost is over £2 million.

Feasibility

5.4 The feasibility of individual measures is not straightforward to quantify. The following factors have been taken into consideration:

- Alignment / synergies with other Monmouthshire County Council initiatives, strategic initiatives, regional planning strategies or Regional Transport Plans;
- Wider non-air quality impacts (social, environmental or economic);
- Stakeholder acceptance / “political” feasibility; and
- Source of funding available or possible.

The Feasibility has been scored as 1 to 5, representing “low” to “high” feasibility:

- **Low feasibility (Score 1)**
- **Medium feasibility (Score 3)**
- **High feasibility (Score 5)**

Ranking of measures

5.5 In order to give a ranking to the options, a combined assessment of air quality impact, cost and feasibility is required. As the primary focus of the Action Plan is to improve local air quality conditions, this needs to be given particular emphasis. Therefore, the overall ranking has been calculated by doubling the air quality impact score, and adding this to the scores for cost and feasibility i.e.:

(AQ impact score x 2) + cost score + feasibility score = ranking score

- 5.6 This ranking allows a relative view of the various measures to be undertaken. However, the final selection of measures to be incorporated into the Action Plan **will not rely solely on this ranking**, but will also be influenced by other criteria such as whether it is likely to be included for funding within other Council budgets, whether the wider benefits mean that it is implemented even though the air quality benefits may not be as good as another measure.

Timescale

- 5.6 The timescale for the implementation of measures has also been considered. The following classifications have been used; **Short-term** relates to those measures that can be implemented within 1-2 years; **Medium-term** relates to those implemented within 3-5 years; **Long-term** options are those which are 6+ years (i.e. those potentially subject to feasibility studies at this stage, and be considered for implementation in future rounds of Local Transport Plans).
- 5.7 These timescales are also indicated on the following tables, and their consideration will also influence the measures chosen for the Action Plan.
- 5.8 Timescales for those measures to be taken forward have been refined in section 6 with more specific timescales included where possible.

Table 1: Evaluation of Proposed Measures

Proposed Measure	Impact on air quality Score: 1-Low 5-High	Cost Score: 1-Very high 5-Very low	Feasibility Score: 1-Low 5-High	Responsible authorities WAG-Welsh Assembly Government MCC-Monmouthshire County Council SEWTA – South East Wales Transport Alliance	Timescale	Ranking Score
Limit weight or emissions of HGVs (requires A48 to be de-trunked)	4	3	3	WAG/MCC	Medium	14
Amend MOVA at Tesco (Upper Street) traffic lights	3	4	4	WAG	Short	14
Lobby for change in toll system at Severn Bridge	3	5	3	WAG	Long	14
Encourage car sharing	2	5	5	MCC	Short	14
Monitor developments in adjoining areas	2	5	5	MCC	Short	14
Improve council integration on planning issues	2	5	5	MCC	Short	14
Education of HGV operators	2	5	5	MCC	Short	14
Improve cross-boundary working	2	5	5	MCC	Short	14
Include LDP Policy covering air quality	2	5	5	MCC	Short	14
Redesign High Beech roundabout	3	4	3	WAG	Short	13
Target schools traffic	2	4	5	MCC	Short	13
Promote sustainable transport as part of new	2	5	4	MCC	Short	13

Proposed Measure	Impact on air quality Score: 1-Low 5-High	Cost Score: 1-Very high 5-Very low	Feasibility Score: 1-Low 5-High	Responsible authorities WAG-Welsh Assembly Government MCC-Monmouthshire County Council SEWTA – South East Wales Transport Alliance	Timescale	Ranking Score
developments						
Promote town centre developments	2	5	4	MCC	Short	13
Bypass	5	1	1	WAG	Long	12
Restrict HGVs at certain times	3	3	3	WAG/MCC	Medium	12
Promote rail freight	2	4	4	WAG/MCC	Short/medium	12
Improve rail services to the town	2	4	4	WAG/MCC/ rail authority	Medium	12
Distribution hub	2	4	4	MCC	Medium	12
Bus Park & Ride/Share	2	3	5	WAG	Long	12
Rail Park & Ride	2	3	5	WAG/MCC/ rail authority	Medium	12
Support the Climate Change and Sustainable Energy Strategy	1	5	5	MCC	Short	12
Travel Plans	1	5	5	MCC	Short	12
Improve bus services	2	3	4	MCC	Medium	11
Improve public transport integration	2	3	4	WAG/MCC	Medium	11
Origin and Destination	1	4	5	WAG/MCC	Short	11

Proposed Measure	Impact on air quality Score: 1-Low 5-High	Cost Score: 1-Very high 5-Very low	Feasibility Score: 1-Low 5-High	Responsible authorities WAG-Welsh Assembly Government MCC-Monmouthshire County Council SEWTA – South East Wales Transport Alliance	Timescale	Ranking Score
Survey						
Provide information for residents	1	4	5	MCC	Short	11
Target HGVs using unsuitable sat nav routes	1	5	4	MCC	Short	11
Upgrade the railway station	1	4	4	WAG/MCC/ rail authority	Medium	10
Improve cycling facilities	1	4	4	MCC	Medium	10
Chepstow Integrated Transport Study	1	2	5	SEWTA	Short	9

6 Consultation

- 6.1 Under Schedule 11 of the Environment Act, local authorities are required to consult on their draft Air Quality Action Plan. It is important for the success of the Action Plan to have involvement of all local stakeholders.
- 6.2 The Action Plan has been drafted through a partnership approach between Environmental Health, Transport, Development Plans and the Chepstow Area Committee. A Steering Group has been established consisting of;

- Monmouthshire County Council officers responsible for air quality, planning and transport and the area general manager;
- Local Councillors;
- Chepstow Town Council;
- Friends of the Earth;
- Forest of Dean District Council officers responsible for air quality;
- Gloucestershire County Council officers responsible for transport and planning;

6.3 Discussions have also been held with the Route Manager for the A48 from the Welsh Assembly Government. The Steering Group identified an initial list of options and decided that stakeholder workshops were required to allow consultation with a broader audience at an early stage. These workshops were carried out during the afternoon and evening of October 21st 2009 (further details provided in Appendix 1).

6.4 The evaluation of options, including those identified during the stakeholder workshops, was carried out by the Steering Group. Following this evaluation, a draft Action Plan was prepared for wider public consultation.

6.5 The Draft Action Plan (April 2011) made available for wider public consultation on Monmouthshire County Council's Website and in Chepstow town Library. The plan was advertised on Monmouthshire County Councils website homepage and with posters in Chesptow town and the Air Quality Management Area. In addition the consultation was publicised via emails to all neighbouring local authorities, the Welsh Assembly Government, Aneurin Bevan Local Health Board, Gwent Police, Public Health Wales and the Environment Agency. No adverse comments were received or additional actions proposed.

6.6 The Action Plan was presented to the Lower Wye Area Committee meeting on 8th June 2011. The following points from the minutes of the meeting were noted and should be taken into consideration:

- Members welcomed the report, especially as it had been submitted almost immediately after consultation.
- Concerns were expressed regarding de-trunking of the A48/A466 as they were part of the trunk roads funded by the Welsh Assembly Government. It was understood that if the road was de-trunked, any future by pass would be funded by Monmouthshire County Council.

- Further clarity was required regarding a motion raised at full Council in 2005/06, it was perceived that it was official policy and in the constitution of the authority to oppose de-trunking.
- Some members were surprised at the consequences of de-trunking and considered the effect on tax payers, regarding costs of maintaining a highway.
- Some members of the committee queried how de-trunking would be of benefit to the authority. It was suggested that the core of the roundabout could be reduced and more lanes introduced to improve traffic flow.
- A query was raised that if the A466/A48 was de-trunked would Monmouthshire County Council be responsible. We were informed that the Welsh Assembly Government would be responsible for costs but may pass charges onto the authority.
- A member suggested that traffic should be prevented from turning right, traveling up Hardwick Hill, to ensure more effective flow. Traffic should be encouraged to turn at the Highbeech roundabout.
- It was suggested that in order to assist with work required on Hardwick Hill, assistance could be obtained from the Officer who contributed to solving traffic problems at the Coldra Roundabout, Newport.
- We were advised that the Town Council were concerned regarding high levels of traffic on Highbeech roundabout and it was expected that it may increase due to developments at the Fairfield Mabey site.
- Members were informed that Fairfield had been considered as a candidate site under the LDP. An Air Quality Assessment had been undertaken which identified whether additional houses would increase the air quality problem, the assessment had been queried and amended several times by the environmental officers – comments had been considered by the development plan team.
- The Officer clarified that actions within the report were proposals and had not been discounted at this stage, however, further investigation was required, there was no certainty regarding the effect of any actions.
- The committee expressed a degree of unanimity regarding the report. However, some concerns were expressed regarding pollution from buses, diverted traffic and a requirement for more collaborative thinking with the LDP. It was recognised that any proposed developments would affect traffic on Hardwick Hill.
- It was highlighted that there had been a requirement to produce the report and officers had to put forward proposals, this had been done effectively within appropriate responsibilities.
- Members commended the hard work that had gone into compiling the report.
- The committee agreed to accept the report, with the caveat that members do not accept the section which related to de-trunking of the A466/A48.

With regard to the opposition amongst the area committee to de-trunking a motion was raised at Council on 13th October 2005 by Councillor Hobson, with 18 votes out of 26 in favour of the motion to oppose the de-trunking of the A446/A48 at Chesptow until the Welsh Assembly Government has constructed a by-pass around Chesptow and upgraded the existing A48 through the town.

However Highways is an responsibility of Cabinet and therefore the motion did not constitute policy.

For further information see paragraph 4.12 of this Action Plan

7 Implementation and Monitoring

- 7.1 To implement the Action Plan measures Monmouthshire County Council will work jointly with all relevant partners, particularly the Welsh Assembly Government, planners and transport operators. To secure the necessary air quality improvements there must be involvement by all local stakeholders and Monmouthshire County Council to ensure this happens. The technical working group will continue to meet as measures are implemented, both to ensure implementation progresses and to amend the Action Plan in future if necessary.
- 7.2 Ultimately the delivery of this Action Plan is dependent on adequate levels of resourcing, both for capital costs and staffing. At this stage, there are a number of funding sources which could be investigated:
- **Regional Transport Plan Funding.** The main potential source of funding for measures to improve air quality is the Regional Transport Plan (RTP). The RTP including funding allocation for the next 5 years (2010 to 2015) has already been submitted to the Welsh Assembly. This includes funding for rail and cycling schemes, as described in section 4. If high cost long-term measures, such as a bypass, are to be implemented, they will need to be included in the RTP.
 - **Welsh Assembly Government** – The Welsh Assembly Government have provided funding to investigate an improvement scheme at High Beech Roundabout. There may also be other measures that need to be funded before the A48 can be de-trunked.
 - **European projects** – European funding is often a way to gain funding for innovation in transport planning. This funding source could be explored for the implementation of some innovative travel awareness campaigns for example.

- **Section 106 Agreements.** Particularly where development proposals are likely to give rise to, or contribute to, exceedences of air quality objectives, payments for air quality mitigation measures can be justified. Some authorities are working towards a formula for use in development control decisions within their AQMAs (for example based on number of car-parking spaces, trips generated by the development, or similar). The guidance on using the planning system to reduce transport emissions³² provides further examples of funding strategies.
- **Safer Routes in Communities.** £630,000 of funding has been secured for Safer Routes in Communities to improve walking and cycling routes in Chepstow. This includes schemes relating to schools traffic and a safer route from Bulwark to the town centre, crossing the A48.
- **Partnership funding** brings a wider stakeholder involvement to the action planning process, and may provide funding from transport operators, haulage companies and local businesses and retailers.

7.3 The implementation and effectiveness of the AQAP will be carefully monitored through the monitoring of nitrogen dioxide concentrations at relevant locations within the Chepstow AQMA. In addition, other indicators such as traffic flow, proportions of different categories of vehicles, use of public transport and levels of cycling will be incorporated (through the RTP monitoring process). There will be regular reviews of the Action Planning proposals, which will be reported on an annual basis to the Welsh Assembly Government and the public. These reviews will include both direct air quality monitoring information, as well as information on proxy measures for monitoring specific proposals (for example, number of school travel plans implemented or increases in bus patronage). The following tables include, where possible, targets for each measure and a more refined timescale for implementation.

Table 2: Measures to be included in the Air Quality Action Plan

Proposed Measure	Target	Timescale
Chepstow Integrated Transport Study	Ensure that impact on AQMA is considered in evaluation process	2011/12
	Implement measures identified within the study	Post 2012

³² Low Emissions Strategies. Using the planning system to reduce transport emissions. Good Practice Guidance. Defra. January 2010.

Proposed Measure	Target	Timescale
Limit HGV weight or emissions	Investigate potential for de-trunking Hardwick Hill with WAG	2011/12
	De-trunk Hardwick Hill	2013/14
	Investigate possible mechanisms for implementation	2011/12
	Implement limit and introduce lorry watch scheme (if required)	2014/15
Amend MOVA at Tesco (Upper Street) traffic lights	Monitor performance of junction	On-going
	Amend MOVA system	As required
Encourage car sharing	Include SEWTA carshare website in all relevant Council literature	2011/12
	Include SEWTA carshare website in all Travel Plans	2011/12
Monitor developments in adjoining areas	Establish contacts with relevant officers	2010/11
	Establish mechanism for reviewing and commenting on relevant applications in adjoining areas	2011/12
Improve council integration on planning issues	Establish mechanism for AQ impacts of policies and applications to be considered	2011/12
Education of HGV operators	Investigate possible cross-boundary measures with Gloucestershire/Forest of Dean	2011/12
	Combine with implementation of other HGV measures?	2012/13
Improve cross-boundary working	Identify relevant contacts in air quality, transport and planning	2010/11
	Set up mechanism for consultation	2011/12
	Set up working groups for specific schemes; - HGV reduction - rail improvements	2012/13 2012/13
Include LDP Policy covering air quality	Contribute to suitably worded policy to be included in LDP	2011/12
Redesign High Beech roundabout	Obtain funding from WAG to investigate options	Complete
	Investigate options	2011/12
	Implement preferred option	2012/13
Target schools traffic	Implement and support Safer Routes to Schools	On-going
	Achieve all targets set out in SRiC scheme	On-going
	Implement safer route between Bulwark and town, crossing A48	On-going

Proposed Measure	Target	Timescale
Promote sustainable transport as part of new developments	Investigate possible mechanisms for; ensuring that new developments promote sustainable transport; and securing contributions to sustainable transport.	2011/12
Promote town centre developments	Include town centre developments in LDP Ensure air quality assessments carried out and appropriate mitigation measures secured	On-going 2011 onwards
Rail Park & Ride	Ensure facilities upgraded as per proposals in SEWRTP Promote in MCC literature Monitor impact on Hardwick Hill	2013 2011/12 Post-2013
Support the Climate Change and Sustainable Energy Strategy	Ensure relevant AQAP Actions included in future CC&SES Ensure that AQAP measures do not conflict with CC&SES and vice versa Identify specific contacts with responsibility for CC&SES and AQAP to ensure that there is effective communication between the two groups.	2011/12 2011/12 2010/11
Travel Plans	Complete travel plan for MCC employees in Chepstow Explore viability of a self funding Green Travel Plan officer, to assist developers. Identify other organisations that may benefit from travel plan advice	2011/12 2011/12 2012/13
Bypass	Monitor large developments in MCC and adjoining areas to determine if may only be acceptable if contributions to bypass made. Investigate feasibility and costs Protect route on Council owned land Include in RTP, if feasible	On-going 2013/14 2011/12 2014
Improve bus services	Investigate which services would be beneficial for AQMA Review possible improvements to increase patronage	2012/13 2012/13

Proposed Measure	Target	Timescale
Improve public transport integration	Promote integrated tickets	2011/12
	Implement single format for timetable information (as per SEWRTP)	2012/13
	Improve bus access at railway station	2012/13
Origin and Destination Survey	Carry out O and D survey	Complete
	Review AQAP in light of results	Complete
Provide information for residents	Provide information to residents on progress of Air Quality Action Plan	2011/12
	Investigate methods for disseminating air quality and public transport information to local residents	2012/13
Target HGVs using unsuitable sat nav routes	Investigate route for reporting unsuitable routes and identify person responsible for reporting	2011/12
Improve rail services to the town	Monitor large developments in MCC and adjoining areas to determine if may only be acceptable if contributions to rail improvements made.	On-going
	Lobby relevant bodies to bring forward improvements	2011/12
	Monitor progress of proposals in SEWRTP	2013
Upgrade the railway station	Lobby relevant bodies to bring forward improvements	2011/12
	Monitor progress of proposals in SEWRTP	2013
Improve cycling facilities	Support the Wye Valley Cycle Route	2011/12
	Support Transition Chepstow in developing walking/cycling map for Chepstow	2011/12
	Investigate provision of bike racks for buses using Hardwick Hill	2012/13
	Investigate whether there is adequate cycle storage at Tesco and in town centre	2012/13
Bus Park & Ride/Share	Promote use of racecourse for Park and Ride into Chepstow	2012
Distribution hub	Investigate feasibility for Chepstow	2013/14
Lobby for change in toll system at Severn Bridge	Lobby for removal of toll at Severn Bridge	2017
Promote rail freight	Support WAG and SEWTA in promoting rail freight as identified in the NTP and SEWRTP	On-going

7.4 **To summarise initial actions will involve:**

- Investigate potential for de-trunking A48 Hardwick Hill;
- Establish contacts with relevant officers in adjoining authorities; and
- Establish mechanism for air quality impacts of planning applications in and near the AQMA to be considered.

In the financial year 2011/12 MCC aim to:

- Ensure air quality impacts adequately considered in the Chepstow Integrated Transport Study;
- Investigate possible cross-boundary measures to reduce HGV's with adjoining local authorities;
- Include policy covering air quality in Local Development Plan;
- Support the Climate Change and Sustainable Energy Strategy;
- Complete Travel Plan for MCC employees in Chepstow;
- Investigate potential for improvement of bus services, particularly those that would be beneficial for the AQMA;
- Investigate potential changes to relevant junctions;
- Investigate possible mechanisms for; ensuring that new developments promote sustainable transport; and securing contributions to sustainable transport.
- Investigate measures to target school traffic.

Longer term measures include:

- Limit HGV weight or emissions, following de-trunking of A48;
- Ensure rail measures included in the SEWRTP are implemented; and
- Lobby for removal of toll at Severn Bridge;
- Investigate feasibility of bypass.

8 Expected Impact of the Air Quality Action Plan

8.1 At this stage, it has not been possible to quantify emissions reductions for specific actions. The document has, however, where possible, included targets for particular measures. Many

of the more ambitious measures (with a greater impact) will require more feasibility work before a decision is made jointly with Welsh Assembly Government and Monmouthshire County Council. Based on professional judgement, and the improvements in air quality required at locations in Chepstow it is considered, without at least some of these more ambitious measures that the air quality objectives will not be met in the foreseeable future.

9 Summary and Conclusions

- 9.1 This Air Quality Action Plan sets out a series of measures on which various stakeholders, including the public, have been consulted. These measures have been refined and prioritised and categorised into those which can be implemented and those which need further work or feasibility studies, with the aim to implement them in the longer term. The measures chosen will be implemented in partnership with key stakeholders, namely Monmouthshire County Council, the Welsh Assembly Government, planners and transport operators.
- 9.2 The measures highlighted in this Air Quality Action Plan should reduce concentrations of nitrogen dioxide at the relevant sensitive receptors, although it is too early to say exactly what impact they will have on improving air quality. The Council is continuing to monitor air quality at several locations within the AQMA. The results of the monitoring will be made available through the annual review and assessment reports along with proxy measures for quantifying improvements.

10 Glossary

Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal.
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides.
Exceedence	A period of time when the concentration of a pollutant is greater than the appropriate air quality objective. This applies to specified locations.
AQMA	Air Quality Management Area

NO₂	Nitrogen dioxide.
NO	Nitric oxide.
NO_x	Nitrogen oxides (taken to be NO ₂ + NO).
µg/m³	Microgrammes per cubic metre.
HDV	Heavy Duty Vehicles (> 3.5 tonnes, excluding buses or coaches)
LDV	Light Duty Vehicles (< 3.5 tonnes)
OGV	Other Goods Vehicles (>3.5 tonnes, heavy goods vehicles including buses or coaches)



Hardwick Hill, Chepstow: Outcomes of Stakeholder Meeting 21st October 2009

Document Control

Client	Monmouthshire County Council	Principal Contact	Paul White
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Document Status and Review Schedule

Issue No.	Report No.	Date	Status	Reviewed by
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A1 Introduction

A1.1 Two stakeholder workshops were run as part of the Air Quality Action Planning process being carried out for the Air Quality Management Area (AQMA) along Hardwick Hill in Chepstow (Monmouthshire). This note sets out the outcomes of these meetings, which were both held on the 21st October 2009. The objectives of the meetings were to:

- Inform relevant stakeholders and representatives of the AQMA and statutory duties of Monmouthshire County Council;
- Brainstorm relevant measures to improve air quality along Hardwick Hill, Chepstow; and
- Provide an initial evaluation of these measures from a variety of stakeholders.

A1.2 The participants of the afternoon meeting were divided up into three smaller groups. All groups were tasked with identifying measures to be included in the action plan, and then to start thinking about pros and cons of those measures. Finally each delegate was given 20 green dots and 20 red dots to be used to indicate whether they supported or were opposed to each of the specific measures identified by all three groups. The delegates were invited to distribute their dots in any way they wished (e.g. 20 dots on one measure, or 1 dot on 20 measures etc). Table 1 summarise the outcomes of the afternoon group work, with the measures grouped into five categories: traffic management; lowering emissions; promotion of alternatives /planning; education and information; and others. The measures as written down by each group are presented, which is why some entries appear repetitive.

A1.3 In the evening meeting the attendees did not want to form small groups and therefore they worked as one group to identify measures to be included in the action plan, and then discussed these measures. The evening delegates also did not want to use the dots to provide support or opposition for specific measures. Table 2 summarise the key outcomes of the evening group work.

A2 Outcomes

Table 1: Afternoon meeting:

Measure	Pros	Cons	'Score' + = support - = oppose
<i>Traffic Management</i>			
Bypass	Remove a lot of traffic. High improvement in air quality/ less pollution Increase house prices Improve health Improve safety Improve public transport Lower road maintenance	Cost Financial impact on town Cooperation Moving the problem WAG Logistics	96+ 19-
Weight limit or HGV limit	Reduce HGV pollution Income generation Improve safety and noise Allow other traffic to flow Inexpensive and quick	Impact on business Police enforcement	13+
One way restrictions (turn left) out of Bulwark only	Keep traffic flowing Reduce pollution	Extended journey Bulwark residents	12+
Restrict lorries -Time restrictions -Delivery times	Less traffic Reduce HGVs at peak times	Enforcement Night noise	8+ 9-
Re-design High Beech roundabout	Improve vehicle flow	Cost Intent	8+

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Measure	Pros	Cons	'Score' + = support - = oppose
- left slip roads			
Redesign Bulwark Corner	Improve flow	Cost Difficult to achieve	7+
Remove Tesco lights (trial)	Improve flow	Cost Difficult to achieve	7+
Bulwark junction – add right turn lane (use wide pavement area)	Improve flow		6+
Improve/reduce aggressive traffic calming measures to encourage less traffic on Hardwick Hill	Encourage alternative route	Impact on Bulwark residents	6+ 3-
Stop lorries using unsuitable Sat Nav routes			3+
Ban dirty lorries Warnings of inspections	Peak oil consideration		3+
Car free housing estates	Less Traffic More pleasant environment	Difficult to achieve Parking standards	3+ 8-
Redesign Moor Street junction	Improve flow	Cost Difficult to achieve	2+
Impose 30mph limit and speed indicators	Generate revenue	Cost	2+
ANPR (automatic number plate recognition) TRO (Traffic Regulation Order)	High air quality impact Reduce traffic	Cost	2+
Congestion charge	Income Reduce pollution	Admin Policing Tourism	2+ 1-

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Measure	Pros	Cons	'Score' + = support - = oppose
		Economics	
Low speed (constant speed)	Less pollution	Enforcement	1+ 1-
Tolls	Remove HGVs	Difficult to get agreement	1+ 2-
Congestion charging in neighbouring cities	Reduce commuting	Can't influence	1+ 4-
Remove Severn Bridge		Economic impact Impact on tourism	1+ 23-
Lowering Emissions			
Technology to clean air e.g. paint	Immediate impact Interim solution whilst other measures are implemented	Cost Experimental Short term	11+ 1-
Covered roads			
Cleaner fuels			
Promotion of alternatives/ planning			
Buses and trains -Improve frequency of trains and buses -Improve timetable of trains and buses -Trains to Bristol -Improve stations, bus stops and information	Encourage and enable train and bus travel	Cost Will not remove lorries	17+ 1-

Measure	Pros	Cons	'Score' + = support - = oppose
-Disabled access -Improve Image			
Buses - Later buses - Grass routes buses - Flexible bus service	Reduction in cars Benefit community Increase bus use	Currently not integrated Cost Will not remove lorries	10+
School time shuttle buses for parents to catch to work Free parking for train users	Reduce rush hour traffic	Funding	10+
Car sharing schemes - encourage in new developments	Less cars	Organisation Somewhere to park	9+
Cheaper public transport	Improve use	Viable	8+
Chepstow to Bristol trains and to Birmingham	Better public transport	Will not stop lorries	7+
Cycle routes and promote/sign them	Encourages cycling	Not enough space Big hills	7+ 4-
Integrated transport -Connections			6+
Increase number of trains stopping in Chepstow	Better public transport	Will not stop lorries	6+
Park and Ride	Less cars	Somewhere to park Location needs to be correct	6+
Safer routes to school	Less traffic Improve health	Education Cost	5+
Limit housing development	Prevent problem worsening	Against National Policy	3+

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Measure	Pros	Cons	'Score' + = support - = oppose
Build outside town centre	Build close to M4 links Less construction traffic		1-
Distribution hubs			2+
<i>Education and information</i>			
Origin/Destination study	Vital information	Short term impacts Technical problems	7+
Education for businesses who send HGVs			3+
Developments in Lydney – do they have a traffic impact on Chepstow?	Find out the effects		4+
Education for residents regarding alternative options			1+
Education -Walk instead of car -cycling	Less traffic	Difficult to change habits	1+ 1-
Council integration for planning issues	Find out the effects		
<i>Other</i>			
Cut Down trees	Improve air flow	Increase NO _x ^a	10+ 12-
Flatten gradient/tunnel	Stop engines struggling up hill	Cost Practicality	1-
<i>Do nothing</i>		Short term will not decrease	13-

Measure	Pros	Cons	‘Score’ + = support - = oppose
		pollution	

^aThis is unlikely to occur in practice.

Table 2: Evening meeting:

Measure	Pros	Cons	Popularity
<i>Traffic Management</i>			
Bypass	Remove traffic		Most popular
Restrict HGVs -Time restrictions – night only -Weight restrictions	Big improvement in air quality Safety	Noise – air brakes	Popular
Change toll on Severn Bridge -pay to leave Wales -stop people on the bridge	Will lead to more lorries going down Hardwick Hill than up (emissions greatest when going up)	Lack of space for toll on Wales side Queuing on the bridge	
<i>Promotion of alternatives/ planning</i>			
Bike racks on buses	Ride bus up the hill and cycle down		
Trains to Bristol and Birmingham			Popular
Park and Ride/Park and Share -Park at racecourse -Website – national/local			
Car park created at Fairfield Maybe – use for train			
<i>Education and information</i>			
Origin and destination study	To provide evidence for other measures		Popular
<i>Other</i>			
Integrated transport			
Pressure on WAG member			

-Lobbying			
-Support of Town Council			

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A3 Invitees and Attendees

Afternoon meeting:

Delegate	Representing
Clive Shakeshelf	Friends of the Earth
Margret Davis	Friends of the Earth
George Morgan	Resident
Grace Evan	Resident - Hardwick Hill
Lon Worth	Resident
William Worth	Resident
Barbara Obridge	Resident
Dee Seack	Resident
David Dovey	Councillor
Val Smith	Mon. C.C
Geoff Smith	Public
Kaye Alan Oakes	Resident
Eileen Grassby	Resident
Henry Hodges	Chepstow Town Council
Jacqui Sullivan	County Cllr
Steve Sullivan	Town Cllr
Delyth Lewis	Resident

Evening meeting:

Air Quality Consultants Ltd
 23 Coldharbour Road, Bristol BS6 7JT Tel: 0117 974 1086
 12 Airedale Road, London SW12 8SF Tel: 0208 673 4313
aqc@aqconsultants.co.uk

Delegate	Representing
R. Slaymaker	\
Dave Berry	Transition Chepstow
Len Daysh	Resident
Lindsay Reid	Resident
Hillary Beach	Chepstow Town Council + resident
Chris Oliver	Resident
J + G Harris	Resident
J + K Ruthmill	Resident
Hilary Mataeson	Resident
Kay Flatten	Resident

Unable/ refused invitation

Delegate	Representing
	WAG

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