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Air Quality Action Plan for Newcastle City Centre AQMA

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EXECUTIVE SUMMARY

This report has been prepared to fulfil the statutory obligation under section 84(2) of the Environment Act 1995 for local authorities who have declared part of their area an air quality management area to produce an action plan. The action plan sets out the measures that Newcastle City Council intends to introduce to improve air quality in pursuit of the National Air Quality objectives.

Newcastle City Council in June 2003 identified the City Centre as an area where the nitrogen dioxide annual air quality objective was likely to be exceeded and the area was declared an air quality management area. Subsequently, in the Detailed '*Review and Assessment Report'* (January 2005) three other areas of possible exceedence of the nitrogen dioxide air quality annual objective were identified at Quayside, Jesmond Road and Blue House roundabout. The City Council therefore declared these three additional areas Air Quality Management Areas (AQMAs).

Findings to date indicate that the four air quality management areas are very closely linked and that the extent of the exceedence for the annual nitrogen objective covers the City Centre (including the Quayside) and 2km along distributor roads leading into the city centre including roads on the Gateshead side of the river. The action plan therefore deals with all the air quality management areas. The Further Assessment work will be developed further to account for the expansion of the air quality management areas.

As pollutant emissions within the City are predominantly linked to road transport, the City Council intends to incorporate its AQAP into the Local Transport Plan. In addition, the City Council has been working closely with the other metropolitan authorities in the Tyne and Wear region, and with transport engineers and planners, to prepare a Local Air Quality Strategy.

This Draft AQAP describes the processes that are in place, and sets out the measures that are being considered to deliver improvements to air quality within the city. A detailed evaluation of these measures is currently under way, in close consultation with planners, development control and transport engineers. The Final AQAP will be submitted together with the final version of the LTP in March 2006. The Final AQAP will include a list of measures to be implemented, confirmation of timescales and funding, and will provide a quantification of the improvements that are expected.

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1. Introduction and Aims of the Plan

1.1 Introduction

1 Air Quality Consultants (AQC) and the Air Quality Management Resource Centre at the University of the West of England (UWE) have been commissioned by Newcastle City Council to prepare an air quality action plan for integration into the Local Transport Plan for Tyne and Wear.

2 Part IV of the Environment Act, 1995, places a statutory duty on local authorities to periodically review and assess the air quality within their area. The concept of Local Air Quality Management (LAQM) and the process of 'review and assessment' was established in the 1997 National Air Quality Strategy (NAQS)[1]. In 2000, Government reviewed the NAQS and set down the revised Air Quality Strategy for England, Scotland, Wales and Northern Ireland[2] (AQS). This established a revised framework for air quality objectives for seven pollutants, which were subsequently prescribed into Regulation in 2000 via the Air Quality Regulations 2000[3]. These were subsequently amended in 2002[4].

3 For each air quality objective, local authorities have to consider whether the objective is likely to be achieved by the due date. Where it appears likely that the air quality objectives will not be met by the designated target dates, 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 (referred to as the "Stage 4" report) and develop an Air Quality Action Plan which sets out the local measures to be implemented in pursuit of the air quality objectives.

4 Policy Guidance LAQM.PG(03)[5] published by the Government in 2003, 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

[1] DoE (1997) The United Kingdom Nation 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 (2003) Policy Guidance LAQM.PG(03)

helping the UK Government deliver the air quality objectives and the EU limit values. The AQAP is expected to include the following:

- 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 on the grounds of 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 in which the local authority and other organisations and agencies propose to implement measures within the action plan;
- 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.

5 In December 2001, the Office of the Deputy Prime Minister (ODPM) set out proposals to reform council services, with the intent to give more freedom and flexibilities to local authorities, and to reduce the burden to produce and submit plans. One outcome is that local authorities are no longer required to produce a separate Air Quality Action Plan where the problem is related to road transport predominantly. In such cases, local authorities are advised to incorporate the AQAP into their Local Transport Plan (LTP).

6 Supplementary guidance to help local authorities with the integration of their Action Plans into the LTP was issued by Defra in 2005 (LAQM.PGA(05))[6]. The LTP should contain the following:

- background information of the air quality situation (derived from the review and assessment reports);
- evidence that the local authority has considered all available measures to tackle the problems, and that these measures have been considered on the grounds of cost-effectiveness and feasibility;

[6] Defra (2005) Policy Guidance: Addendum LAQM.PGA(05)

- consideration of the wider environmental, social and economic impacts of the measures;
- the target dates for implementation of the measures, and indication of funding mechanisms;
- identification of those responsible for implementing the measures, and
- clarification of how the local authority intends to measure progress with the implementation of the measures and air quality improvement afforded.

7 Local authorities are also required to set out a 2004/05 baseline, a 2010/11 target, and "intermediate outcomes" to measure progress against the target. These may include indicators such as total emissions within the AQMA, traffic flows, etc.

8 The local authority is also required to identify measures taken for both internal and external consultation.

9 Where the local authority has also prepared a local or regional air quality strategy, relevant measures or policies within that strategy should be reflected in the LTP.

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

1.2 Status of this report

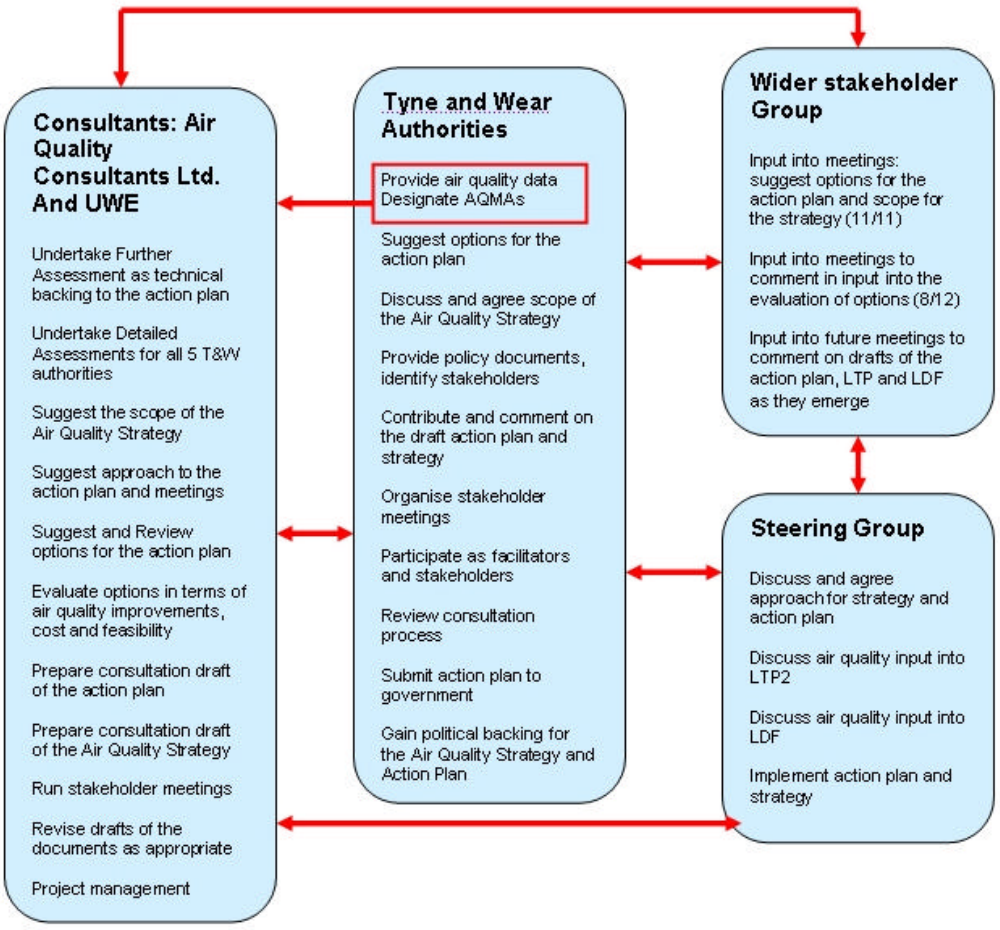
11 This report sets out the draft Air Quality Action Plan for Newcastle. It describes the processes that are in place, and sets out the measures that are currently being considered to deliver improvements to air quality within the city. A detailed evaluation of these measures is currently under way, and the environmental protection teams are working in close consultation with planners, development control and transport engineers. It is intended that the final AQAP will be submitted together with the final version of the LTP in March 2006. The final AQAP will include a list of measures to be implemented, confirmation of timescales and funding, and a quantification of the air quality improvements anticipated.

2. Air quality management in Tyne and Wear

12 From the introduction of the LAQM process, the local authorities in the Tyne and Wear region have chosen to act jointly in managing air quality within their area, an approach that is strongly encouraged by the Government's Department of Environment, Food and Rural Affairs (Defra).

13 As part of this process, an Air Quality Strategy for the Tyne and Wear region is currently being developed. This work is being carried out in partnership with the five local authorities, and other relevant stakeholders, including the LTP team and planners. To oversee the process, a Steering Group has been established which meets on a regular basis. The following schematic illustrates the approach to the development of the different aspects of the local air quality management process.

Figure 1: Overview of responsibilities of the steering group



3. Overview of Air Quality and Transport in Newcastle

3.1 Air Quality

14 Newcastle City Council completed its first round of review and assessment at the end of 2000. The conclusion of the first round was that it was not necessary to declare any AQMAs.

15 The second round of review and assessment is based on a two-stage approach, involving an initial Updating and Screening Assessment (USA), and if necessary a Detailed Assessment.

16 The local authority completed its USA in May 2003. It was concluded that the objectives for carbon monoxide, lead, benzene, 1,3-butadiene and sulphur dioxide would be achieved at all locations, and no further work was necessary. Detailed Assessments were required for a number of locations where potential exceedences of the annual mean nitrogen dioxide (NO_2) and 24-hour PM_{10} objectives were identified. In the City Centre however, it was determined that there was sufficient evidence to declare an AQMA based on measured exceedences of the annual mean NO_2 objective, without proceeding to a Detailed Assessment. As a result, the authority declared an AQMA on 1 April 2004 (see Figure 2).

17 The Detailed Assessment was completed in January 2005, for the following locations identified in the USA:

Nitrogen dioxide	**PM_{10}**
A1058 Jesmond Road, A189 Haddricks Mill/Station Road junction, Blue House Roundabout/Great North Road junction, A186 Westgate Road/Blenheim Street	A1058 Jesmond Road, Swan House Roundabout, Percy Street City Centre

18 On the basis of new monitoring data, a Detailed Assessment was also carried out for the Quayside area, not previously identified in the USA.

19 The conclusion of the Detailed Assessment was to declare AQMAs in respect of the annual mean objective for NO_2 at the Quayside, A1058 Jesmond Road and the

Blue House Roundabout/Great North Road junction. Orders to designate these additional AQMAs were issued in June 2005. The boundaries of these AQMAs are described in Figures 3 to 5.

20 Following the declaration of an AQMA, Section 84(1) of the Act requires the local authority to carry out a further assessment of air quality. The intention of this further assessment is to:

- confirm the conclusions of the Detailed Assessment by means of further modelling or monitoring studies;
- quantify what level of improvement in air quality is required in order to meet the air quality objectives;
- take account of any new developments or proposals in the area; and
- refine knowledge of the sources of pollutant emissions so that the measures in the AQAP may be targeted appropriately.

21 The further assessment is expected to be completed within 12 months of designation of the AQMA. The further assessment for the City Centre AQMA was due for completion by April 2005. However, due to the declaration of additional AQMAs, the local authority considered that it was more appropriate to consider the City Centre and Quayside areas together. It is expected that the further assessments for both these AQMAs will be completed by July 2005. Further assessments for the Jesmond Road and Blue House AQMAs will be completed shortly after.

22 Whilst the outcomes of the further assessments are not yet complete, it is anticipated that the boundaries of one or more existing AQMAs may need to be extended or indeed merged. However, this is not likely to impact significantly upon the measures set out within this draft Action Plan.

23 To assist with the development of this Action Plan, the further assessment has quantified the contribution from different sources within the two principal AQMA areas (City Centre and Quayside) and has also quantified the level of improvement that is required.

Figure 2: City Centre AQMA

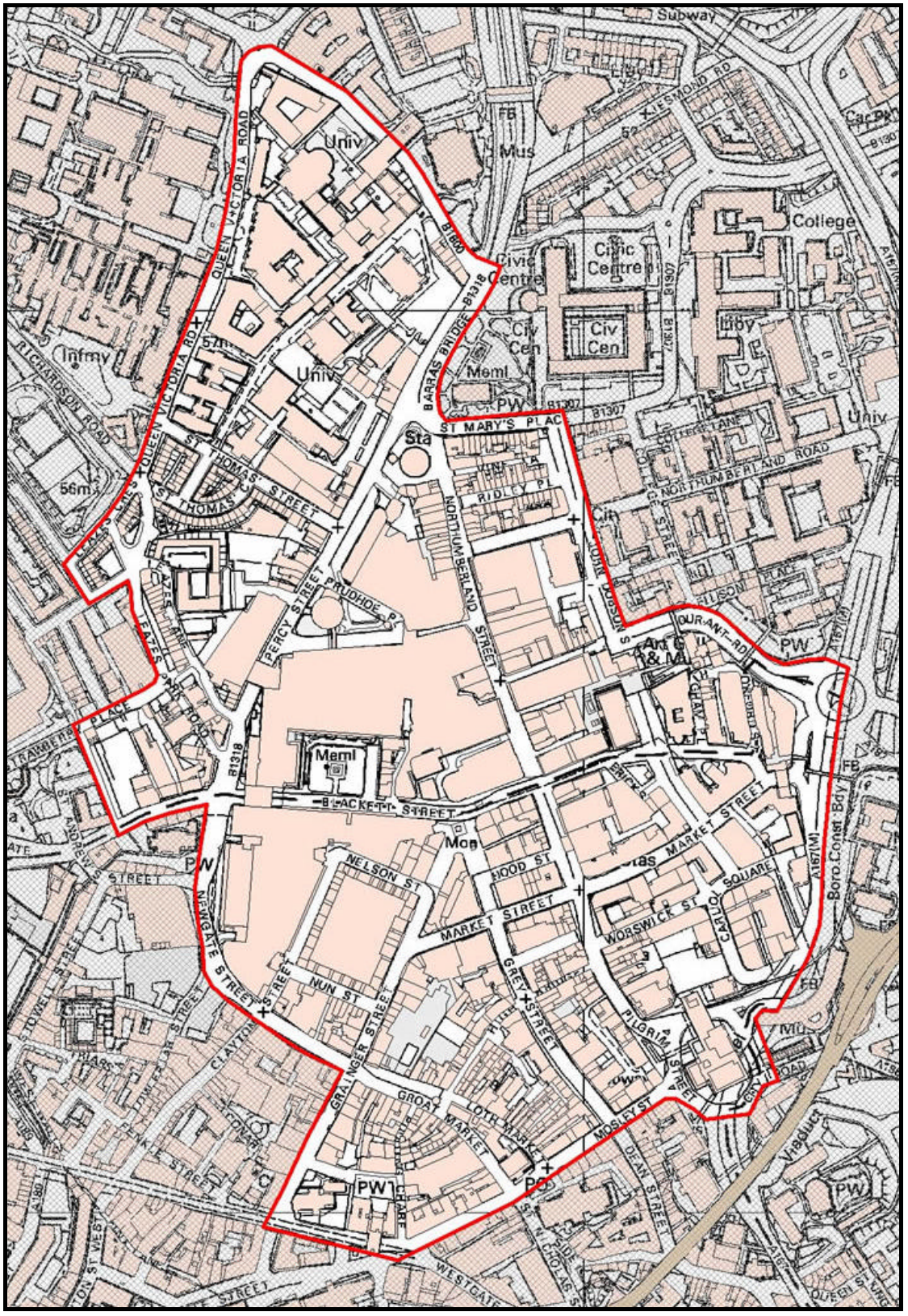


Figure 3: Quayside AQMA

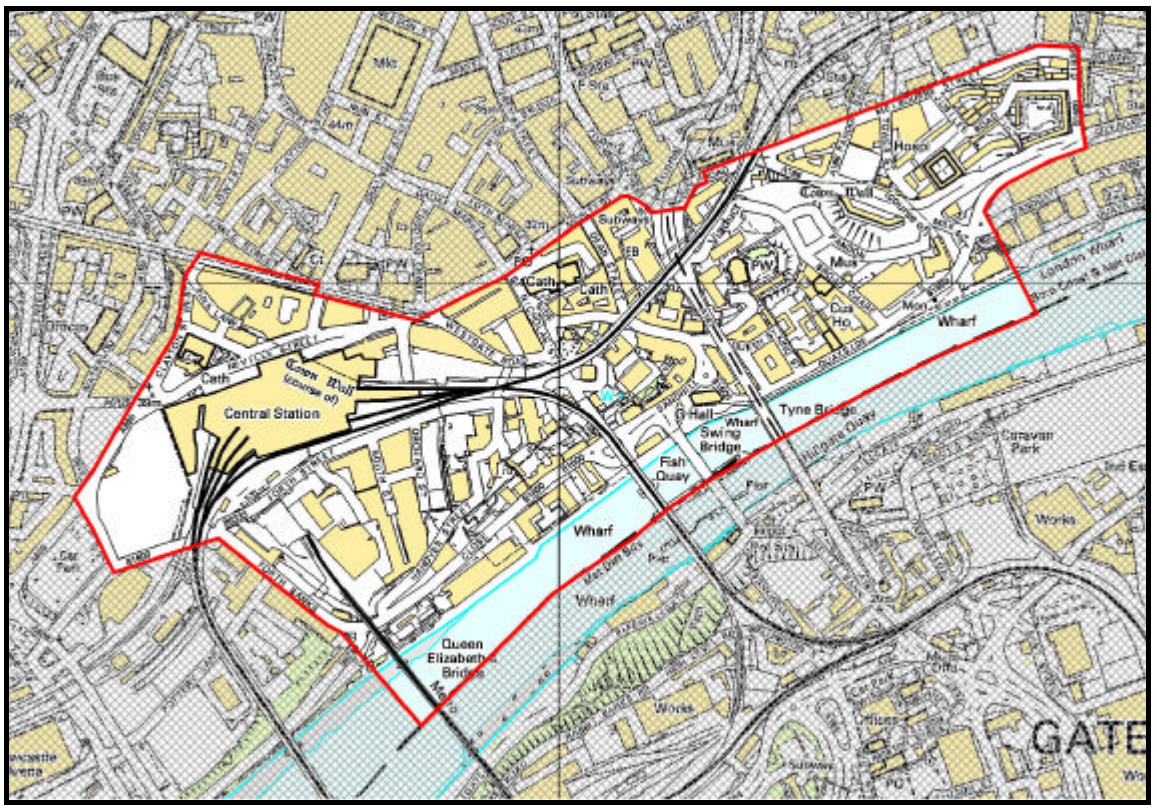


Figure 4: Jesmond Road AQMA

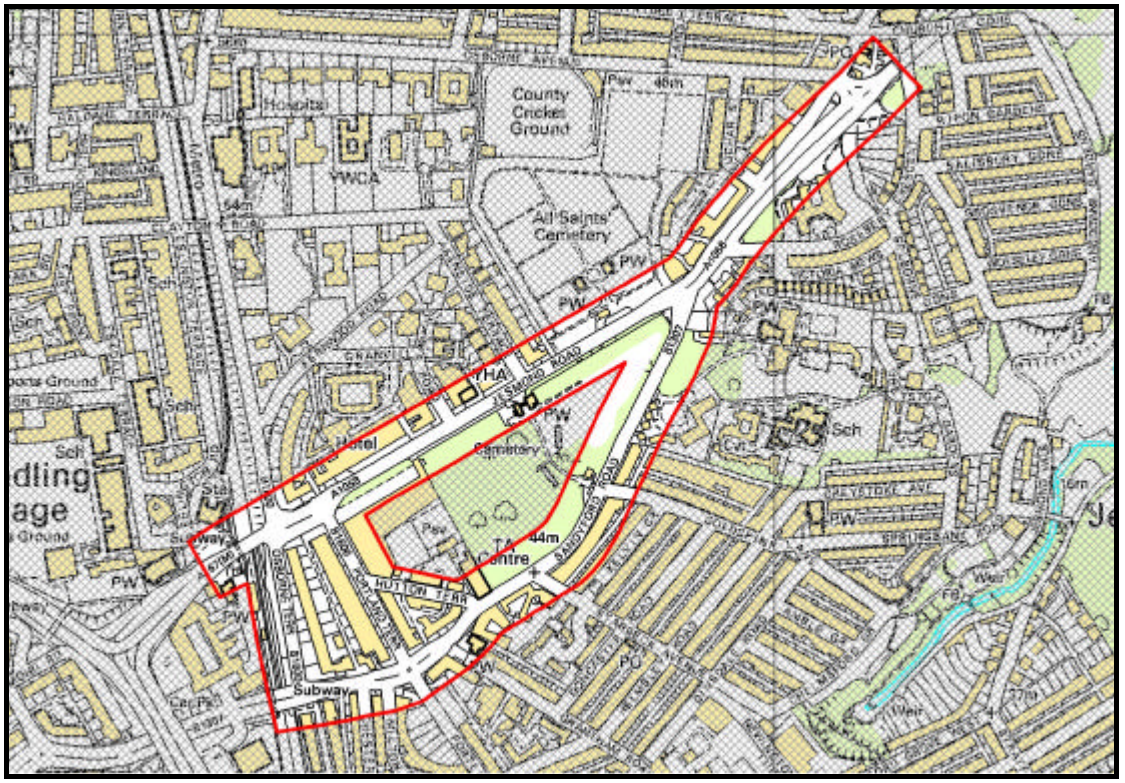
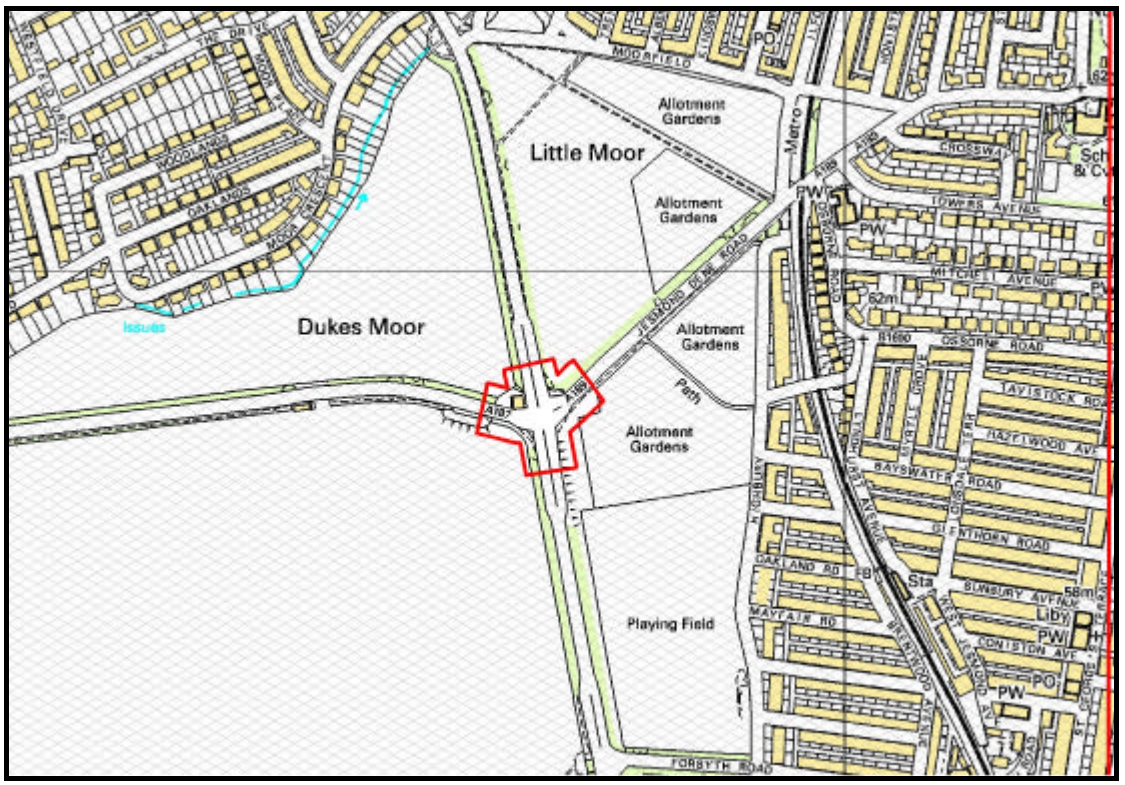


Figure 5: Blue House AQMA



11 A number of specific receptor locations within the City Centre and Quayside AQMA boundaries have been identified. All receptors are relevant in terms of public exposure to the NO_2 annual mean objective. The highest predicted annual mean concentration in 2005 is 71.0 µg/m^3. The reduction in road traffic nitrogen oxides (NOx) emissions that would be required at each receptor location to meet the NO_2 annual mean objective of 40 µg/m^3 in 2005 is described in Figure 6 below.

12 The required percentage reduction in NOx emissions for many locations is within the range of 40 to 70%, rising to 81% at the location where the highest concentrations have been predicted.

13 Figure 7 describes the source contributions to the predicted annual mean NO_2 concentrations at the same 18 receptor locations within the City Centre and Quayside AQMA boundaries. It is noted that there is a significant contribution from both buses and heavy goods vehicles (HGVs).

Figure 6: Percentage reduction in road traffic NOx emissions required at 18 specific receptor locations within the City Centre and Quayside AQMAs

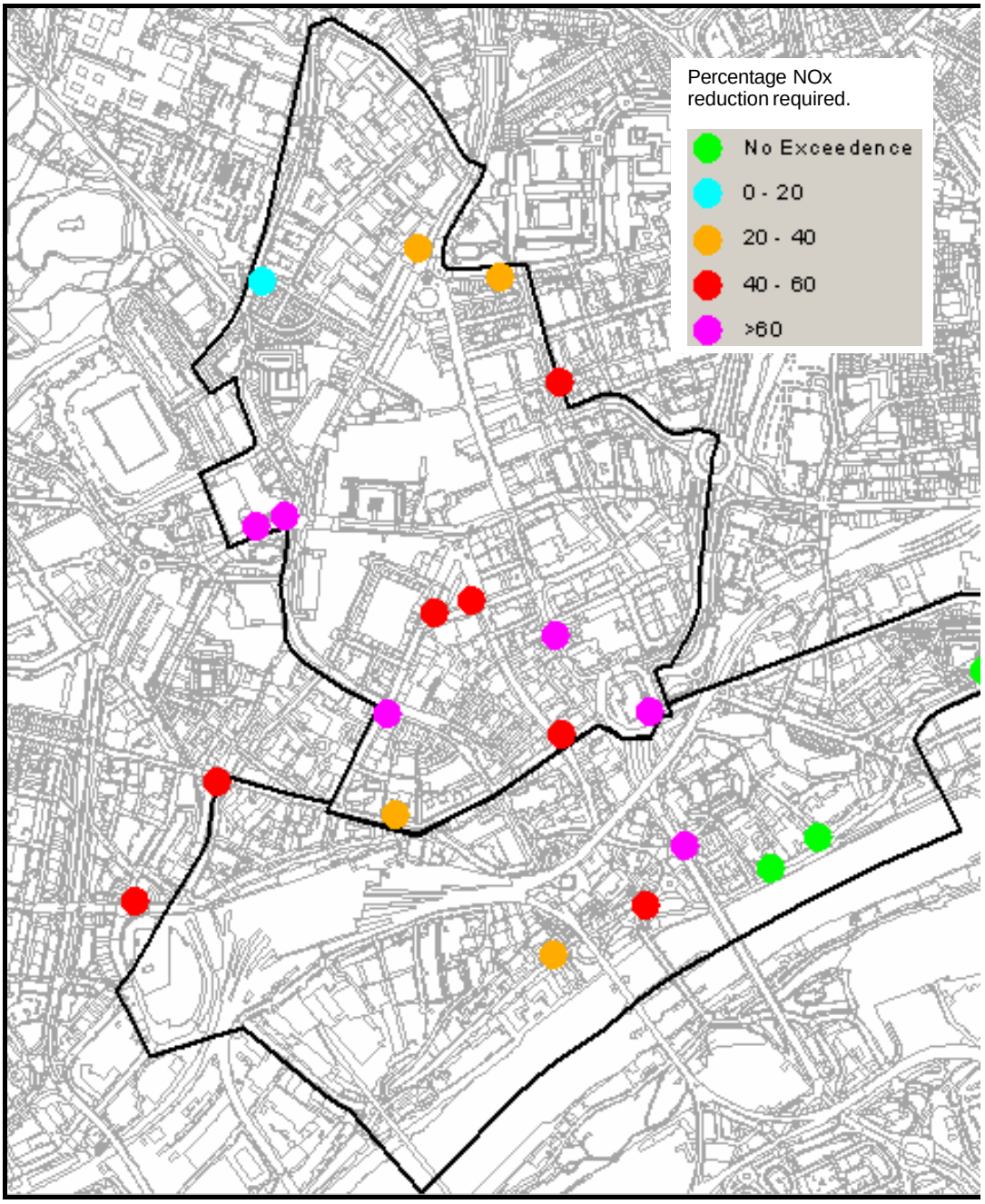
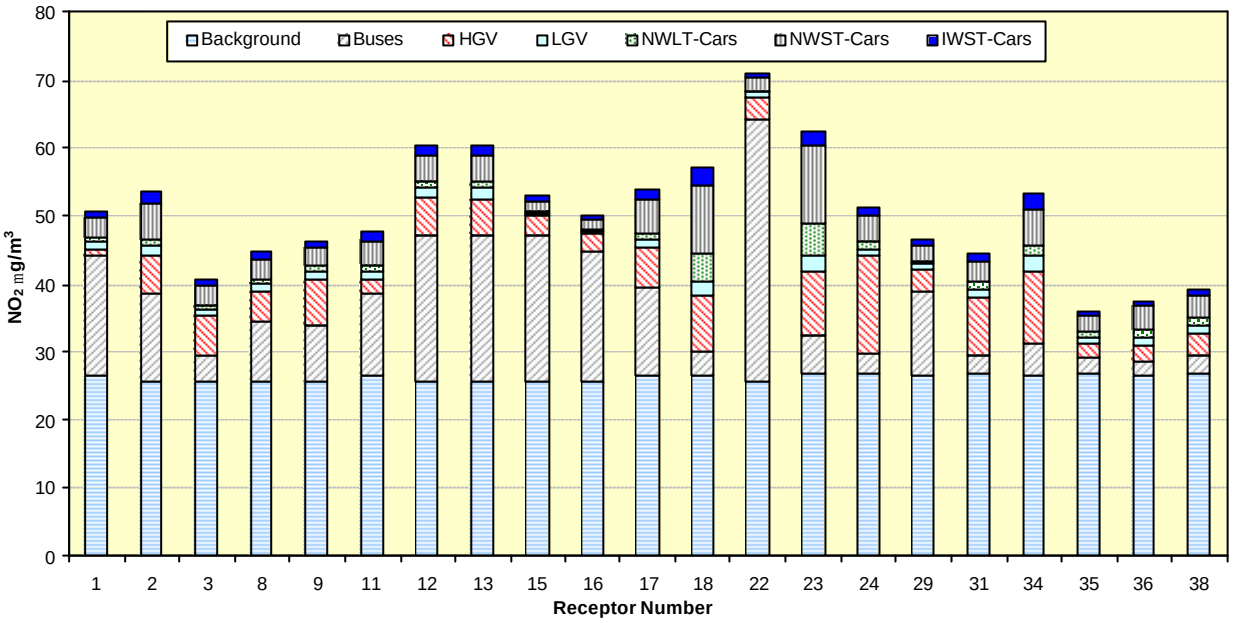


Figure 7: Source contributions to predicted annual mean nitrogen dioxide concentrations (2005) at 21 receptor locations in the City Centre and Quayside AQMAs



3.2 Transport

26 There are a number of issues relating to current and future traffic in Tyne and Wear, against which are highly relevant to the development of this action plan. These are:

- Car ownership (and hence car use) is rising at a rate significantly higher than the national average;
- There is rapidly increasing traffic congestion on key radial routes within Tyne and Wear;
- There is a modal shift away from public transport for journeys to work;
- Overall there has been a decline in public transport patronage by 26% between 1992/3 and 2002/3 despite metro patronage increasing by 18% in the past 3 years;
- Peak hour congestion is spreading over a wider time period.

4. Existing Policies and Strategies relevant to air quality

27 This draft Action Plan has been written in conjunction with the Tyne and Wear Air Quality Strategy, which considers strategies, policies and programmes for the whole of Tyne and Wear in the context of Local Air Quality Management. This Strategy, currently in draft, is available at the Tyne and Wear Air Quality Website (http://tyneandwearair.sunderland.ac.uk/).

28 The development, implementation and monitoring of the Air Quality Strategy is being overseen by an Air Quality Steering Group, comprising relevant officers of the five metropolitan authorities. This Steering Group has paid a pivotal role in the development of this action plan, which is being considered together with action plans in the adjoining authority areas where AQMAs have also been declared.

4.1 Local Transport Plan

29 The Local Transport Plan for Tyne and Wear is due to be submitted to DfT in July 2005 (pending full submission in March 2006). This will follow an in-depth analysis of transport measures in order to tackle the four key priority areas of air quality, road safety, accessibility and congestion. As part of this process, a strategic transport model has been developed which will investigate the impacts of various policy options. Two reference cases have been used (a) continuation of current service levels and charges, and (b) continuation of current policies (this case will make adjustments reflecting current policies aimed at reducing demand for parking and capping the subsidy to public transport at current levels).

30 Following these reference cases, a series of policy and scheme tests will be completed to evaluate the individual impacts of key interventions. These tests will examine the impact of the following key actions at the County-wide level:

- Introduction of 10-minute (minimum) frequency throughout the Super route and Metro Network;
- Introduction of a free (zero-fares) policy for public transport, and
- Development of a network of Metro-feeder services from bus network, creating a more co-ordinated public transport network overall.

The impact of the following area-wide policies will also be tested:

- Introduction of effective travel plans at workplaces and schools across Tyne and Wear;
- Introduction of different levels of charge for car parking in all main centres;
- Policies to provide widespread road space reallocation on strategic routes to improve running conditions for buses and investigate the need for mitigating measures to avoid traffic diverting onto other routes;
- Introduction of road-user charging to manage demand on congested routes:
    - Tolls charged for entering the city centres, metro centre and other congested areas;
    - Tolls at all crossings of the Rivers Tyne and Wear will also be tested to re-examine the earlier work of TAMMS[7]

4.2 Framework for Local Planning

31 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 abolishes Structure Plans and Local Plans, replacing them with Local Development Frameworks (LDFs), Local Development Schemes (LDS) and Local Development Documents (LDDs). Local authorities are now preparing their Local Development Frameworks under the new regime, although the statutory status of Unitary Development Plans, Local Plans or Structure Plans will be retained until LDFs are in place. It is therefore timely to incorporate air quality issues and considerations into the planning process as a new regime evolves.

32 The new regime intends to improve the effectiveness of the local planning process, improving the efficiency and predictability of planning decisions. Planning Policy Guidance (PPG) is also to be revised, to become Planning Policy Statements (PPSs). The new Planning Policy Statement relating to Planning and Pollution Control (PPS23) was published in November 2004, and complements the new pollution control framework under the Pollution Prevention and Control (PPC) Act 1999 and the PPC Regulations 2000.

33 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). Whilst at this stage, the Action Plan does not specifically quantify emissions associated with climate change, the LTP will include indicators based upon annual emissions of CO_2 or equivalent.

4.3 Community Strategies

34 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.

35 The Community Strategy 2004-2007, which forms part of the Newcastle Plan[8], has just been published by the Newcastle Strategic Partnership. It provides the overarching framework for the Council to work within. Key themes include achieving a clean, green, attractive, safe, healthy, protected and sustainable environment which will be achieved through a number of measures including those to reduce pollution.

4.4 Economic Development

36 In early 2005, the Council adopted a new corporate vision and objectives, with more detailed 'portfolio' objectives and targets to follow - see http://www.newcastle.gov.uk/councill2.nsf/a/keydocs?opendocument.

37 "Competitive Newcastle" [9]was launched in 1999 as a 10-year economic development strategy. Objectives under the "Cohesive Communities" programme[10] aims to improve transport between the regeneration areas and 3 strategic areas. Initiatives include Business Park green travel plans and Going for Growth area plans.

[7] Tyneside Area Multi Modal Study
[8] http://www.newcastle.gov.uk/ncleplan.nsf/a/home?opendocument
[9] www.newcastle.gov.uk/compcity
[10] www.newcastle.gov.uk/compnewc.nsf/a/cct_cohesivecomm

4.5 Climate Change

38 In Newcastle, The CarbonNeutral Newcastle Campaign[11] was launched at the end of 2002, as a major new contribution towards the reduction of global warming. The purpose of the campaign is that participants can have their greenhouse gas emissions calculated, receive help and advice regarding reduction, and contribute financially to carbon-reduction projects to offset unavoidable emissions. Newcastle City Council are aiming, by 2025, to achieve CarbonNeutral status, by offsetting all unavoidable greenhouse gas emissions. Anyone can sign up to the CarbonNeutral Campaign, whether they are individuals, businesses or event organisers.

[11] www.newcastle.gov.uk/carbonneutral

5. Specific measures for delivering air quality improvements in Newcastle

5.1 Methodology

39 The further assessment carried out by Newcastle City Council as part of its review and assessment process, has demonstrated that the current policies and programmes (described in Section 4 and detailed in the Air Quality Strategy) will not deliver a sufficient reduction in emissions from road traffic to meet the air quality objective for NO_2 by 2005. Potential options to further reduce emissions are considered in this Section.

40 Potential options have been identified using the guidance published by the National Society for Clean Air and Environmental Protection[12]. Specifically, the following steps were taken:

- **Identification of potential options** – this was undertaken through a workshop on 11 November 2004 with key officers of the five Tyne and Wear authorities, and including other organisations such as the Highways Agency and air quality experts from Sunderland University.

- **Evaluation of the options** – with regard to air quality impact, other environmental impacts cost, feasibility and timescales. This was undertaken by the Air Quality Steering Group in consultation with other key officers identified at step 1, at a workshop on 8 December 2004.

- **Prioritisation of the options** – this was undertaken largely through the LTP process in consultation with the Air Quality Steering Group. Prioritised options can be found in Section 6 of this document.

- **A public consultation exercise** – the City Council has undertaken an extensive public consultation exercise on the City Centre AQMA, and it is

[12] Guidance on Air Quality Action Plans can be found at:
http://www.nsca.org.uk/pages/topics_and_issues/local_air_quality_management.cfm

intended that similar consultations will be undertaken for new AQMAs and the Action Plan. Consultation for the Air Quality Action Plan, in line with current legislation and guidance, will be incorporated into the consultation already underway for the LTP. There is a comprehensive consultation ongoing, including extensive surveys of households in the whole of Tyne and Wear, focus groups, in depth interviews as well as provision of a website for the public and use of the press and free newspapers. Consultation processes are outlined in Section 7.

41 Once the Action Plan is implemented, a monitoring strategy will also be implemented which will run in parallel to the monitoring of the LTP. This is outlined in Section 9.

5.1.1 Identification of options

42 Participants from the five Tyne and Wear authorities, other organisations and academia (a full list of participants is included in Appendix 1) attended a workshop on 11th November 2004. Potential additional options to reduce emissions were considered, including:

- Emissions management;
- Information and education;
- Land-use planning;
- Managing the road network, and
- Promotion and provision of alternatives.

43 Participants were initially asked to consider options for inclusion in the Air Quality Action Plan. A rationalised list of the options was then progressed to the next stage of the assessment.

5.1.2 Evaluation of options

44 The identified options were 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);
- timescale for implementation.

45 It is more difficult to quantify the 'soft' measures, for example the provision of cycle lanes, or promoting 'walk-to-school' initiatives. In such cases, an indication of the expected impact has been based on professional judgement.

(a) Air Quality Impact

46 Air quality impacts have been classified as 'low', 'medium' or 'high'. For each measure, or package of measures, the expected reduction in annual mean NO_2 concentrations has been evaluated. Pending the outcome of the Further Assessment, where a detailed analysis of the principal Action Plan measures is being considered, the expected air quality impacts are based largely on professional judgement, drawing wherever possible on experience gained from other studies.

47 The following classification scheme has been used:

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

Medium: *perceptible* (a demonstrable improvement in air quality). An improvement of up to 2µg/m^3 NO_2, which could be shown by a modelling scenario. Improvement is not likely to be shown by monitoring due to confounding factors of the weather;

High: *significant*. Improvement of more than 2µg/m^3 NO_2. 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).

48 In addition, the tables summarise the specific effect on air quality, i.e. whether the measure impacts on vehicle flow, on vehicle miles within the AQMA, on emissions per vehicle or whether the option is designed to reduce exposure to pollutants. A '>' symbol denotes reduction, with '<' denoting increase. Where the table is blank in this section, the measure is judged to have no impact on this particular category.

(b) Cost

49 The implementation of the measures set out in this draft Action Plan are dependant on securing a sufficient and consistent level of funding to both 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. The following classification scheme has been used; **'Low'** cost is taken to be <£50K, '**Medium**' cost is £50 - 150K, '**High**' cost is £150K - £2 million and '**Very High**' cost is over £2 million.

(a) Feasibility

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

- Alignment / synergies with other Newcastle City Council strategic initiatives, other Tyne and Wear authorities' strategic initiatives, regional planning strategies or Local Transport Plans;
- Wider non-air quality impacts (social, environmental or economic);
- Stakeholder acceptance / "political" feasibility;
- Availability of enabling legislation;
- Source of funding available or possible.

51 Some elements related to feasibility such as alignment with existing City Council policies, whether legal powers are available etc., have been included in the descriptions of the options. The wider (non-air quality) impacts reflect the potential impacts upon other environmental criteria (e.g. noise, visual amenity and climate change gas emissions) and non-environmental criteria (social and economic issues). Semi-quantitative descriptors have been used.

52 These descriptors are based on positive and negative impacts, with '++ve' being very positive, '+ve' being positive; negative impacts are described as '-ve' and '- -ve'. Where the measure has both positive and negative impacts, the overall impact has been evaluated. In arriving at the feasibility 'scores' there is inevitably some element of professional judgement included.

53 The feasibility section of the evaluation also evaluates whether other specific options need to be considered in parallel with the option for the option to be feasible (or conversely whether other measures will conflict with the option).

(d) Timescale

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 (i.e. still within the lifetime of the second LTP 2006-11); **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 the third round of Local Transport Plans (i.e. LTP3)). These timescales are consistent with phases of the Local Planning Regime (which generally use 2011 as a target year in addition to 2021).

5.2 Options considered for improving air quality in Newcastle

54 This section sets out details of the potential measures identified during the workshop. The principal issues are then summarised in Tables 1 to 5.

5.2.1 Managing the Highway Network

(i) Congestion charging

Charging to enter a specified zone (often within certain time limitations) is one way to encourage people to use alternative modes of transport, or reduce the need to travel entirely (through the financial incentive to change work, shopping or leisure patterns). To date, London is the only city in the UK to implement a congestion charging scheme. The London Congestion Charging Scheme began in February 2003, and is currently based on a single charge of £5 for vehicles entering a central London zone between the weekday hours of 07.00 – 18.30. Several vehicle types are exempt from the charge. The effect of the scheme has been to reduce the total vehicle-km travelled within the zone by 15% and to increase the average speed by 4km/h[13]. The reduction of emissions is more related to an increase in average vehicle speed, rather than total vehicle-kms. An increase in bus-km was also evident (to meet demand to travel into central London) but any increase in emissions has been offset by the widespread introduction of particle traps to existing and new bus fleets.

In Tyne and Wear, there is less congestion than experienced in other major conurbations within the UK. It is recognised that private car ownership is increasing (albeit from a low ownership base level) and will continue to do so if the land-use development proposals contained in the Regional Spatial Strategy materialise. With this in mind, the Plan Partners are testing the effects of a congestion charge at three locations, as follows:

- A defined urban centre in Newcastle and Gateshead
- Sunderland City Centre
- Metro Centre

[13] Beevers S.D. and Carslaw D.C. (2005) The Impact of congestion charging on vehicle emissions in London. *Atmospheric Environment* **39**. p1-5.

These areas are defined in detail in the Local Transport Plan. The impacts on travel patterns are being considered against congestion tolls of £1, £3 and £5.

In Tyne and Wear, the applicability and need for the congestion charge is outside of the planning horizon for LTP2. However, it is likely to be considered a valuable traffic restraint tool in LTP3.

(ii) Road tolls

Road toll schemes are currently being discussed at central Government level, for example through the Future of Transport White Paper (DfT, 2004)[14]. Although definitions overlap, road tolling is different to congestion charging in that it is usually applies to specific roads, with a set charge over the whole day (as opposed to congestion charging which aims to target the congested periods of the day). In addition to considering the impacts of a congestion charge around the city centres in Tyne and Wear, the impacts of tolling the river crossings of the Tyne and Wear are also being examined. The same levels of toll are being assessed as with congestion charging in the Strategic Transport Model. This will provide information on travel demands, public transport patronage, congestion levels, accidents, operating costs as well as air pollution impacts. Outcomes will be reported in future drafts of this Action Plan.

(iii) Residents parking permits

In areas close to the city centre, people are likely to be encouraged to drive if free parking in adjacent residential areas is available. Residents parking permit schemes, in conjunction with fiscal disincentives for city centre car parking, discourage people commuting into town and parking all day. Parking permits can however be unpopular with local residents, depending on how and where they are implemented.

In many locations, particularly those affected by large scale commuter parking, residents parking schemes have proved popular with the local residents. There are many localities in Newcastle which have already benefited from such schemes and the proposals in LTP2 are to continue to implement such schemes through to 2011. They are closely linked with the green travel plan initiatives which encourage employers to help promote a modal shift to more sustainable transport modes,

[14] http://www.dft.gov.uk/stellent/groups/dft_about/documents/divisionhomepage/031259.hcsp

including walking and cycling. The roles of residents parking schemes can be found in the congestion strategy within the LTP.

(iv) Specific Bus Corridors including Bus Lanes, or segregation of buses

With increasing demands for road space, and resulting congestion, bus services inevitably suffer increased delays and unreliability. Buses are a much more efficient means of moving people than private cars (provided there is high occupancy of the bus), hence improved public transport is crucial to improving air quality. If bus services are not reliable, then it will be difficult to attract car drivers to switch to using the bus. Bus lanes are one of the most effective ways of improving bus journey times and increasing reliability.

In addition, buses emit much higher levels of pollution when travelling at low speeds in congested traffic (a bus travelling at 5 mph produces twice the NOx emissions of one travelling at 20 mph). Policies to introduce further road space reallocation on strategic routes are currently being evaluated within the strategic transport model. Outcomes will be reported in future drafts of this action plan. Within Project Orpheus, bus corridors are currently being assessed for priority measures. These are largely selective vehicle detection at traffic signals, new signal installations, or bus priority or 'no-car' lanes.

(v) Reduce capacity of roads

If road capacity is reduced, then it may be expected that less cars can travel and hence overall emissions will decrease. Questions of whether increased, or decreased road capacity is the most viable option for reducing congestion and pollution are frequently debated amongst transport and environmental planners, but are yet to be clearly analysed using adequate methodologies. Anecdotal evidence suggests that reducing the capacity of roads will reduce vehicle miles. Reducing the capacity of roads is included in other options more specifically, such as through implementation of bus priority lanes, HOV lanes, priority for cyclists. It will therefore not be taken forward as an option in its own right, but will implicitly be included within other options.

(v) Increase capacity of roads

A project coordinated by the Centre for Transport Studies, Imperial College, London is currently looking at the impact of increased road capacity upon pollutant

emissions[15]. The project is based on a combination of simulation and statistical methodologies with the objective of evaluating the overall strategic policy question of how changes in available road capacity effects vehicle emissions. In Tyne and Wear, there are a number of major schemes which increase road capacity, namely the dualling of Scotswood Road in Newcastle, Sunderland Central Route and Sunderland southern radial route. None of these schemes were targeted at improving air quality, although inevitably they will have some impact. These impacts may be location specific where the scheme is implemented, but may also impact at the destinations points of the journeys. The New Tyne Crossing would relieve one of the most congested parts of the road network in Tyne and Wear where delays for vehicles queuing can reach up to 30 minutes during the peak periods. These examples illustrate that impacts on air quality will be dependent on the exact nature and location of the scheme.

(vi) Higher priority for pedestrians (in terms of highway space)

The National Guidance on Encouraging Walking, published in March 2000 by DETR, provided a working guide to help Local Authorities develop a strategy to make walking easier; more pleasant and safer; to encourage walking as an alternative to the car; and to maximise its potential within an integrated transport system. The Government White Paper in 1998, '*Saving lives: Our Healthier Nation*' put a high priority on the health of the population as a whole and the importance of reducing air pollution and increasing exercise. An increased role for walking and cycling as a transport choice would help to reduce the impact of road traffic emissions as well as improving the personal fitness and health of the population. This may be achieved, in part, by prioritisation of highway space for pedestrians.

The first Local Transport Plan for Tyne and Wear developed a hierarchy of road users which gave the pedestrians and cyclists highest priority over other modes of transport and, in particular, over the private car. This has resulted in many pedestrianised areas evolving or expanding, and many other facilities being implemented to aid accessibility for pedestrians. The second LTP will endorse this hierarchy and contains a County-wide 'access for all' strategy. There are specific targets for Best Value Performance Indicators for people with mobility.

[15] http://www.cts.cv.ic.ac.uk/html/ResearchActivities/projectDetails.asp?ProjectID=290

(vii) Higher priority for cyclists (in terms of highway space)

Encouraging cycling is an important way of reducing private car use, particularly for short journeys. This was recognised in the first LTP round by the Tyne and Wear authorities, who adopted the national target to quadruple the use of cycling by 2012 (from a 1996 base). It was recognised that encouraging recreational and tourist cycling was also important if cyclists are to consider replacing car trips. Issues of how cycling can integrate with other forms of transport also need to be considered. For example secure cycle parking is now provided at a number of metro stations.

Within the LTP there is a supplementary strategy to the `shared priorities' for cycling. Naturally, this strategy is applicable across the sub-region. The strategy aims to coordinate the cycle network across local authority boundaries and aims to expand both on and off-road cycle lanes and routes. Training, publicity and information also form part of the strategy to encourage cycling as a recreational activity and a genuine alternative to the car.

(viii) Decriminalised parking enforcement

Illegally parked vehicles on major roads during the rush hour can cause significant congestion, and associated additional pollution. Most heavily-trafficked roads already have controls on parking; improved enforcement of these controls, particularly at sites experiencing high levels of pollution, could reduce traffic congestion and reduce emissions. Decriminalised parking enforcement means that most non-endorsable parking offences become enforceable by the local authority rather than the police, with local authorities able to retain the penalties collected. The changes are available under powers available to Local Authorities under the Road Traffic Act 1991.

Sunderland City Council has already undertaken decriminalised parking enforcement, and Newcastle City Council has a view to take on this responsibility in the longer term. An audit of existing traffic regulations is currently being undertaken in Newcastle City Council as the start of this process.

(ix) Bus re-regulation

The expectation that deregulation of bus services in 1986 would lead to competition between bus companies, improved services and lower fares has not happened in many locations across the UK. The industry has consolidated with five large international operators controlling over 75% of the UK market, with these companies

rarely competing with each other. Bus patronage in PTE areas has declined and fares have increased, while in London (still under regulation) bus patronage has increased over the same period. For bus re-regulation to happen, new primary legislation is required, and is therefore unfeasible in terms of this Action Plan. Ways of working with bus companies (such as Quality Bus Partnerships) are already in place in Newcastle and also across the rest of Tyne and Wear

(x) High Occupancy Vehicle lanes

High occupancy vehicle lanes, (HOV's), are reserved for buses, taxis and cars with more than one occupant. These vehicles are given an advantage over the single occupancy vehicles, for example, by being given greater priority at junctions. In some countries with road tolls, the high occupancy vehicle lanes are free of charge. HOV's may help to reduce traffic levels by encouraging people to share rather than take separate vehicles. However, effective enforcement is obviously an important issue.

In Newcastle, and across the rest of Tyne and Wear, `no-car lanes' will continue to be implemented. These permit buses, taxis, HGV's and vans to use the lanes to promote sustainable public transport modes whilst supporting the economy by also giving advantage to freight transport. Newcastle is at the forefront in the UK for this form of traffic management.

(xi) Coordination of road works

Road works can be a significant cause of congestion and therefore increased emissions. The frequency of road works could be reduced by effective coordinaton, thus reducing potential congestion and increased emissions. Newcastle City Council already has a range of powers and duties under which they maintain and improve the highway network and manage its use and activities. These include the Highways Act 1980 principally covering the structure of the network; the New Roads and Street Works Act 1991, covering utility street works; and the Road Traffic Regulation Act 1984 regulating the activities of road users.

The Traffic Management Act 2004 has given all local authorities in the UK additional powers. The Act adds the network management duty, which requires local traffic authorities to do all that is reasonably practicable to manage the network effectively to keep traffic moving. As part of the Act, Newcastle will appoint a Traffic Manager who will be responsible for delivering the requirements laid down in the Act, including coordination of road works.

Table 1: Summary of measures associated with Managing the Highway Network

Theme 1: MANAGING THE HIGHWAY NETWORK												
Option	**Effects**					**Cost**		**Feasibility**				
	Vehicle flow	**Impact on Exposure**	**Vehicle-miles within AQMA**	**Emissions per vehicle mile**	**AQ impact**	**Cost to Council**	**Cost to others**	**Practica-bility**	**Wider impacts**			**Time scale**
									Social	**Environ-mental**	**Economic**	
Congestion charging	>		>		H (in the area)	-ve net cost	L-M	L	-ve/+ve	++ve	-ve	L
Road tolls	>		>		M - H	-ve net cost	L-M	L	-ve/+ve	++ve/ -ve	-ve	M-L
Residents parking permits	-		>		L-M	M	L	H	+ve	+ve	-ve	S
Specific Bus Corridors including Bus Lanes, or segregation of buses	>		>		L (in some targeted areas)	M - H	L	M-H	+ve	+ve (long term) -ve)short term)	-ve (for other road users)	M
Reduce capacity of roads	>		>		L (Short term negative impact)	M - H	L	H	-ve	+ve	+ve/ -ve	L
Increase capacity of roads	<		<		L (or increase pollution)	V H	L	L	-ve	-ve	+ve	L
Higher priority for pedestrians (in terms of highway space)	>		>		H	M	L-M	H	+ve	+ve	+ve	M
Higher priority for cyclists (in terms of highway space)	>		>		L	M	L-M	H	+ve	+ve	+ve	M
Decriminalised parking enforcement	>		>		L	-ve	M	M-H	+ve	+ve	0	M
Bus re-regulation	>		>		L	V H	H	L	+ve	+ve	+ve	L
High Occupancy Vehicle lanes	>		>		L?	M	L	L	+ve	+ve	+ve	S
Coordination of road works	-		-	> (due to less congestion)	L	L	L	H	++ve	++ve	++ve	S

5.2.2 Emissions management

(i) Encouragement of low emission or zero emission vehicles for individuals, businesses and council fleets

As an organisation with a large vehicle fleet and even greater numbers of vehicles operated via contract, it is important that Newcastle City Council, in partnership with the other Tyne and Wear authorities, leads by example by favouring low emissions vehicles when purchasing vehicles for its own fleet. Newcastle City Council has a fleet size of 800 vehicles, of which, 43% are LPG and 57% are diesel. Bio-diesel is currently used on 57% of the fleet, which equates to 80,000 litres of non fossil fuel per annum. This will increase as the LPG fleet reduces and is replaced with diesel. A hybrid vehicle is currently being trialled, with the impacts assessed by the University of Newcastle.

Once Newcastle City Council has developed a policy regarding the use of low or zero emission vehicles, it will be in a stronger position to influence others, for example through the implementation of Travel Plans for employers, or through education campaigns for individuals. Newcastle City Council could also provide advice and support for other local fleet operators through printed material and seminars to encourage 'greener' fleets to operate in the city. Newcastle City Council has a close working relationship with One North East and the EST North East advice centre, and is involved in the Tyne and Wear Freight Quality Partnership.

(ii) Emissions standards for buses

The introduction of increasingly stringent European emissions standards mean that new buses are increasingly cleaner. There are grants available for retrofitting buses (such as the Government's *Powershift* Programme). This can be encouraged through voluntary schemes, or implemented through Bus Quality Partnerships for the commercial bus services. One way of encouraging operators to retrofit old buses is to include minimum emissions standards into Council contracts for supported bus services, for example those funded via Education Departments for the school bus services. There are currently minimum standards set for Superoutes. The success of the Superoute network has seen an influx of newer buses, more so than on the rest of the bus network in Tyne and Wear. Further expansion of the Superoute network is planned which will see further improvements in the bus fleet in Newcastle.

The imposition of higher emissions standards for buses operating within the AQMA is a potential option that needs to be considered.

(iii) Enforcing idling engines legislation

The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 (Statutory Instrument 2002 No. 1808) enables authorised individuals to issue a fixed penalty notice to vehicles stationery on a road and can require them to switch off their engine. In some circumstances, for example where buses congregate, this may provide localised improvements in air quality. However, it will require the co-operation of authorised individuals. As part of the Clear Zone initiative, fixed penalty notices will be issued by council enforcement officers to bus drivers who leave their engines running at bus stops or in bus stations and for taxis where they have left their engines running while stationary for more than a few minutes. The notice carries a penalty of £40, reduced to £20 if paid within 28 days. This action is therefore already in place.

(iv) Delivery times outside peak hour

Delivery vehicles in congested streets can increase traffic congestion if they need to park outside the delivery location for any length of time. This extra congestion can be alleviated if deliveries are only allowed outside of specified hours. This is unlikely to improve air quality significantly but as a package of measures is a move in the right direction.

In Newcastle, there is restricted access on some of the key shopping streets in the city centre and around the recently renovated Grainger Town and other traffic sensitive streets. These restrictions permit deliveries up to 9.30am and after 5.30pm or 6.30pm. Where possible, Newcastle City Council is also considering rear access for deliveries to maintain the flow around the city centre and elsewhere on the strategic road network.

(v) Route enforcement for HGVs

The Government has recognised the benefits to be gained from local authorities and industry working together to share responsibility for and better understand freight distribution issues at both regional and local levels. This is highlighted by the DfT in its publication entitled 'A guide on how to set up and run Freight Quality Partnerships' (Good Practice Guide 335) and associated document 'Freight Quality Partnerships – Case studies' (Good Practice Guide Case Study 410). Freight Quality Partnerships

are already being developed in the North East, including the Northern Freight Group and at the Tyne and Wear level, the Tyne and Wear Freight Quality Partnership. These partnerships are currently developing freight strategies. Newcastle City Council will seek to ensure that air quality is a consideration in the development of these strategies.

(vi) Taxis – use licensing system to improve emissions

The Tyne and Wear local authorities currently have a taxi and Private Hire Vehicle Strategy, recognising the contribution that taxi and private hire services have to an integrated transport strategy. The five Councils in Tyne and Wear currently operate separate policies in relation to the licensing and operation of taxis and private hire vehicles within the framework of national legislation. Discussions are taking place to harmonise these policies, with the potential to include tighter emissions standards (or enforcement of current emissions standards) for taxis and private hire vehicles across Tyne and Wear. In addition, more efficient use of taxis (to reduce journeys without passengers) may also improve emissions. Proposals to introduce more stringent emissions standards to taxis operating within the city are currently under discussion. The scheme that is currently proposed for London may be used as a template[16].

(vii) Use of Low Emission delivery vehicles

Emissions standards for buses could be extended to delivery vehicles, although it is difficult to see how this could be implemented and enforced. Again, this measure is unlikely to provide much improvement in air quality on its own, but as a package of measures is a move in the right direction. It also sends out the right signals to local businesses.

As part of the Freight Quality Partnership, operators will be encouraged to consider alternative fuels, and body kits which make vehicles more fuel efficient.

[16] London's 20,000 black taxi fleet will be expected to meet strict emissions standards by 2007, under the Mayor's Taxi Emissions Strategy. Taxi drivers will be able to meet the requirements by bringing forward the date at which they planned to invest in a new, cleaner cab, fitting abatement technology or converting to run on alternative fuels. Funding for these options will be provided through a small environmental surcharge on each fare, from April 2005.

(viii) Target HGVs – freight consolidation (freight node/ hub), encourage use of rail freight

Large vehicles such as lorries and buses are responsible for a greater proportion of emissions than smaller vehicles. Buses are considered separately in this document. Distribution depots outside the city centre where large lorries (HGVs) may transfer loads to smaller, cleaner vehicles for distribution within the city could reduce congestion and emissions. Some of the large businesses such as M&S do have freight consolidation and distribution centres around Tyne and Wear. Further freight consolidation areas will be considered within the duration of the second Local Transport Plan (LTP2).

(ix) Low Emission Zone

Low Emission Zones (LEZs) are defined areas that restrict entry to vehicles meeting certain emissions criteria or standards. The objective of LEZs is to accelerate the introduction of cleaner vehicles into the fleet and reduce the number of polluting vehicles in order to improve local air quality. Such zones have been successfully operated in other European Countries such as Sweden for many years. LEZs are currently being considered for London and some other UK cities. In the UK, feasibility studies are furthest advanced in London. There are a large number of different options for implementing an LEZ and the cost and potential timescale for implementation will be largely dependent on which option is selected.

If an LEZ is implemented in London it is likely that at the outset it will only target lorries, buses and coaches, expanding to later include vans and taxis. The feasibility study for the London LEZ does not recommend that cars are included in the scheme, which avoids issues of equity (i.e. members of the population less able to buy newer vehicles being excluded from the city centre). The Mayor has committed to the provision of a London LEZ by the end of 2007. Newcastle City Council formalised their Clear Zone in March 2005. The Clear Zone brings together a number of traffic management measures to improve air quality, reduce noise and improve road safety. It is feasible that this initiative could be extended to incorporate emissions standards.

(x) Speed restrictions

Emissions are related to speed. At the lower traffic speeds within the city centre area, slower speeds will generally give rise to higher emissions of nitrogen oxides (NOx). However, where slower speeds reduce 'stop-start' traffic, this may lower emissions. Impacts will be dependent on the local situation but are unlikely to have a

significant impact on emissions. Smoothing traffic flow will have some impact on overall emissions. With the formalisation of the Clear Zone in central Newcastle, a speed limit of 20 mph applies to all vehicles in the zone. This zone may be extended in the future to meet the shared priorities for road safety and air quality.

(xi) Better Traffic Light Signal Coordination (SCOOT)

SCOOT (Split Cycle Offset Optimisation Technique) is a tool for managing and controlling traffic signals in urban areas. It is an adaptive system that responds automatically to fluctuations in traffic flow through the use of on-street detectors embedded in the road. The Newcastle and Gateshead central areas and the MetroCentre have benefited from the SCOOT system of urban traffic control for many years. Although there is potential for the current SCOOT system to be expanded and improved, the LTP Plan Partners are keen to pursue a new UTMC system for Tyne and Wear during 2006-2011. This system will address a number of the shared priorities.

(xii) Vehicle Ban in City Centre

Banning vehicles in some areas, or pedestrainising more areas of the city centre will improve air quality in those areas affected. Wherever vehicle bans are proposed they are generally seen as negative for local business. Vehicle bans could also be introduced at certain times of the day, or for certain types of vehicles. Newcastle City Council has introduced vehicle bans in the last couple of years in Northumberland Street, Grainger Town and the University access zone. There is the potential that vehicle bans could be extended to other areas of the city centre, in particular to increase the extent of pedestrianisation.

(xiii) Roadside Emissions Testing

Poor vehicle maintenance can increase levels of emissions by ten times or more. A minority of vehicles are badly maintained and produce excessive emissions, the majority of which could be re-tuned within 15 minutes. A minority of vehicles on the roads have catalysts that are not working properly. The importance of regular vehicle maintenance could be promoted as part of the Information and Education options, however a roadside emission scheme would further enhance public awareness of the issues and potentially decrease the numbers of excessively polluting vehicles on the road network.

Powers have now been granted to all local authorities with AQMAs to undertake roadside emissions tests, although previous funding via DfT has now ceased. In a recent review of roadside emission testing[17], it was concluded that the main benefits of roadside emissions testing schemes were in educating the public rather than demonstrable air quality improvements. There are currently no plans to undertake roadside emissions testing in Newcastle on grounds of prohibitive costs.

[17] McCrae I S, Latham S and Boulter P G (2005). A review of roadside emission testing by local authorities in the United Kingdom. TRL report UPR SE/144/04. TRL Ltd, Wokingham.

NSCA (2004). Roadside emissions testing (RET) - local authority experience. Report produced on behalf of The BOC Foundation. NSCA, Brighton. http://www.nsca.org.uk/pages/topics_and_issues/roadside_emissions_testing.cfm

Table 2 Summary of measures associated with Emissions Management

Theme 2: EMISSIONS MANAGEMENT												
Option	**Effects**					**Cost**		**Feasibility**				
	Vehicle flow	**Impact on Exposure**	**Vehicle-miles within AQMA**	**Emissions per vehicle mile**	**AQ impact**	**Cost to Council**	**Cost to others**	**Practica-bility**	**Wider impacts**			**Time scale**
									Social	**Environ-mental**	**Economic**	
Encouragement of low emission/ zero emission vehicles				>	L (overall)	L-M	M	H	+ve	+ve	+ve	S
Emissions standards for buses				>	L-M	n/a	H	H	+ve	+ve	0	S
Enforcing idling engines legislation				>	L (overall)	L	L	H	+ve	+ve	0	S
Delivery times outside peak hour				> (decreasing congestion)	L	L	L-M	H	+/-ve	+ve	+/-ve	M
Route enforcement for HGVs		>	>		L	L	L	H	+ve	+ve	0	S/M
Taxis – use licensing system to improve emissions				>	L	L	M	H	+ve	+ve	-ve	S
Use of Low Emission delivery vehicles/ times of deliveries				>	L	L	H	L	+ve	+ve	-ve over time	S/M
Target HGVs – freight consolidation (freight node/ hub), encourage use of rail freight	>		>	>	L-M	L if encouragement, H if infrastructure change	L	M-H	+ve	+ve	+/-ve	L
Low Emission Zone			>	>	M-H (in zone)	M-H	L	H	+ve	+ve	0	L
Speed restrictions				>	L	L	L	H	+ve	+/-ve dependent on flow	+ve	S
Better Traffic Light Signal Coordination (SCOOT)				>	L	M	0	H	+ve	+ve	+ve	M
Vehicle Ban in City Centre	>		>		M	L	M-H	L	+/-ve	++ve	--ve	L
Roadside Emissions Testing				>	L	L-M	L	H	+ve/ -ve	+ve	-	S

5.2.3 Promotion and Provision of alternatives

(i) Express commuter buses

Where public transport is seen as quicker and more efficient than commuting by car, more people are likely to make the modal shift. On the Superoute network in Tyne and Wear, there have been some positive results which have seen patronage growth on some of the routes. These routes are associated with a more reliable service, with shorter waiting intervals, and better quality 'low-floor' buses. Phase One of Project Orpheus (the bus based solution) will look to build on the success of the Superoutes.

(ii) Trams

A number of cities in the UK are currently introducing new tram systems. For example, the Manchester metro link is in operation and new systems have more recently opened in Nottingham, Sheffield and Croydon. Trams represent a large-scale investment, which may be more effectively spent on improving buses. However, a tram system does give public transport a high impact statement; they are zero emission at the point of use and provide efficient service to those they benefit. Trams are being considered as part of the second phase of Project Orpheus, which aims to encourage car owners to use public transport for some of their journeys. The first phase of the project (over the next 10 years) focuses on Metro reinvigoration and significant bus based enhancements, with the second phase (second ten years) focusing on completing the Metro reinvigoration programme (including new Metro trains) and introducing trams on some of the key traffic corridors in Tyne and Wear. This measure will therefore not be implemented in the timescale of LTP2, but will be under consideration post-2011.

(iii) Guided buses

Guided buses are an *off-road* technology that involves the creation of a special *trackway* physically removed from the public highway. The first *kerb guided busway* opened in Essen, Germany in 1980. The special track it uses consists of two parallel sets of 'L' shaped prefabricated concrete panels. Kerb guidance uses ordinary buses (motorbus, trolleybus, etc) fitted with extra horizontal guide-wheels (one per side, mounted immediately in front of the front road wheels) which steer the vehicle via guide-arms attached to the steering knuckle. Whilst on the track the driver retains full control of the vehicle except that there is no longer any need to use the steering wheel. Away from the track the bus uses the normal road. A guided bus scheme is

proposed for Huntingdon to Cambridge (along the former St Ives to Cambridge rail line) and is being considered by a public inquiry. Guided buses are proposed as part of the first phase of Project Orpheus, a ten-year period from 2006.

(iv) Park and Ride

Park and Ride facilities currently operate at Heworth. During the period of the LTP1, the feasibility of other potential rail and bus based Park and Ride schemes was investigated, for example at Blaydon (linked to the rail service), Birtley (linked to the MCR / PUBR) and Pelaw (linked to the Metro). A Park and Ride strategy is included in the public strategy section in the appendix to the LTP. This proposes enhanced Park and Ride for Tyne and Wear with new sites proposed and expansions to existing sites.

(v) Promotion of cycling

The potential exists for air quality improvements to be made through increasing the proportion of trips made by cycle. A balance between the needs of both pedestrians and cyclists must, of course, be struck. Any cycling promotion will build on that already underway in Tyne and Wear. Promotion schemes will include both addressing safety perceptions and also providing infrastructure in order to make cycling more practical to more people. A supplementary cycling strategy and associated implementation programme is included in the LTP2.

(vi) Annual Travel Card Discount

The effect of fares on public transport patronage has been subject to a long history of research and analysis. Ticketing schemes such as those where passengers can buy an annual pass, or a discounted ticket covering different operators and different modes of transport aims to simplify costs and reduces the need for passengers to make complex calculations.

There are some useful examples of the impacts of ticketing schemes such as annual travel cards, for example in Freiburg, Germany where an 'environmental travel card' was introduced in 1984, public transport demand increased by an average of 7.5% per year. As with other initiatives it is unclear what proportion of the increase in public transport patronage is due to hard factors, and what proportion in the result of the benefits of better ticketing schemes. As part of the consultation process for LTP 2, stakeholders were asked to determine their perceptions and benefits of more consistent ticketing structures across Tyne and Wear.

(vii) Quality Bus Contracts

Quality Bus Partnerships incorporate a variety of measures such as bus lanes, other bus priority measures, low-floor buses, more frequent services, real time information, marketing and higher parking charges. A review of the literature surrounding bus quality partnerships[18] has shown that most schemes (9 out of 11) delivered an increase in patronage of between 7% and 30%. One scheme performed much better than any of the others, with an increase in patronage of over 90%. This was the only scheme which included a guided bus way, and was also associated with Park and Ride services. Other research has shown that differences in passenger numbers are linked to the extent of a quality partnership scheme.

Where only minimal investment in new infrastructure is provided, revenue and patronage increases of 5% might be expected. Where a comprehensive route upgrade is carried out, patronage and revenue can be expected to rise by around 15%, and with very high quality schemes, the average increase will be around 30% with some schemes achieving increases in revenue as high as 45%. Several studies suggest that although some growth in bus use is usually seen quite quickly after improvements are made, passenger numbers typically take up to two years to peak[19]. Newcastle City Council will build on existing partnerships with bus operators to improve facilities and services further throughout the LTP2 period.

(viii) Travel Plans for businesses and schools

Travel Plans can help companies reduce the traffic impacts of their business. Travel Plans look to reduce work related car trips through initiatives such as car sharing, providing pool cars, cycling incentives, cycle parking, showers and changing facilities, video conferencing, flexible working and discounted bus and train tickets. Travel Plans can be extremely cost-effective and have proved very successful in cutting car use.

The school journey affects public transport patterns, causes localised congestion around schools and contributes to the sharp road traffic peak around 9.00 each

[18] LEK/ Commission for Integrated Transport (2002) *Obtaining best value for public subsidy for the bus industry*.

[19] Cairns S., Sloman L., Newman C., Anable J., Kirkbride A & Goodwin P (2004) Smarter Choices – Changing the Way We Travel. http://www.dft.gov.uk/stellent/groups/dft_control/documents/contentservertemplate/dft_index.hcst?n=10689&l=1

morning. Over the past 20 years the proportion of children travelling to school by car has almost doubled, yet many live close enough to school to walk. Many older children would like to cycle, but are worried about safety, or their school may lack secure cycle storage facilities. Other pupils would like to travel by bus, but there may not be a service available at the right time. If one is available it may be too expensive, particularly for families with two or more children, or else children may feel intimidated by bullying or other anti-social behaviour. Encouraging more children to walk or cycle to school, even walking to the bus stop, will not only reduce congestion but also improve health directly through increasing exercise.

The plan partners in Tyne and Wear are working toward a Workplace Travel Plan Strategy with objectives, and strategies that are applicable to the whole of Tyne and Wear. Travel Plan Co-ordinators have been appointed for each of the partners including Nexus.

There are some good examples of Travel Plans being implemented in Tyne and Wear. For example, workers at North Tyneside General Hospital have formed a "Travel Plan Group" to help colleagues plan their journey to and from work using more sustainable forms of transport. Under the plan, health staff at the hospital are encouraged and helped to make their journey using public transport, or by walking, bicycle or car-sharing. The impacts of travel plans are routinely monitored in Tyne and Wear and are reported back in the Annual Progress Report.

The introduction of effective travel plans at workplaces and schools across Tyne and Wear are currently being tested within the traffic modelling scenarios as part of LTP2. a useful mechanism for implementation is through Section 106 agreements with planning applications (see Section 5.2.5).

(ix) Increase Pedestrian Areas

Increasing pedestrian areas will dramatically improve air quality in those locations. It may however, depending on location, move the congestion and air quality issues elsewhere. Pedestrianisation is generally seen as negative for local business (although businesses which rely on passing trade often do better in pedestrianised areas). Relatively large parts of central Newcastle are currently pedestrianised and there is potential for further extending these areas.

(x) Car Loan Scheme

Car loan schemes, or car club initiatives can reduce both car ownership and car usage in limited areas. Car clubs are a way of being able to use a car without having to own one and for many people they can offer a cheaper alternative to buying a car, or running a second car. Car club members pay a small membership fee and then have access to cars that they pay at an hourly rate to use. Each car club car typically replaces five cars. Car club vehicles are new, regularly maintained and could be LPG or electric, and therefore less polluting. A car club has been operating in Bristol (mainly in central residential areas) for many years. It is hoped that the current scheme will expand to incorporate 850 members by 2006. Newcastle City Council currently operates a pool car and is investigating the benefits of car clubs as part of the travel plan strategy.

(xi) Use of car parking charges to make alternatives financially viable/ reduce parking capacity

The introduction of different levels of charges for car parking across all the main centres of Tyne and Wear is currently being tested within the strategic transport model amongst the various scenarios for LTP2. By either reducing car parking availability, or increasing parking charges for certain sectors, the modal shift to public transport could be encouraged through relative economic benefit of public transport use. The outcomes of these tests in air quality terms will be reported in future drafts of this document.

(xii) Home Zones

Home Zones are residential streets in which the road space is shared between drivers of motor vehicles and other road users, with the wider needs of residents (including people who walk and cycle, and children) in mind. The aim is to change the way that streets are used and to improve the quality of life in residential streets by making them places for people, not just for traffic. Changes to the layout of the street should emphasise this change of use, so that motorists perceive that they should give informal priority to other road users. The concept of Home Zones is being trialled in the United Kingdom, with 8 pilot projects under way in England, one in Wales, four in Scotland and one in Northern Ireland.

(xiii) Subsidise public transport

Subsidised public transport may deliver an increase in patronage. One extreme example of this is the city of Hasselt in the Netherlands which effectively made its

public transport network free (in conjunction with a number of other measures to improve conditions for cyclists and pedestrians). This policy change has effected a 10 times increase in public transport use between 1996 and 2000 (a 7.5 times increase in public transport use happened overnight). The LTP2 team are currently modelling the impacts in Tyne and Wear of a free (zero fares) policy for public transport.

(xiv) Create extra capacity on trains/ metro/ buses

There are plans in Tyne and Wear and Northumberland to promote investment in heavy rail. This is unlikely to gain financial support in the period to 2011. The tram based element of Project Orpheus will look to increase capacity on the Metro system from 2016 onwards. Suggestions at stakeholder workshops include extending the metro south of the Tyne (Hexham/ Corbridge), linking Blyth and Cramlington to the metro system, and linking South Hylton to Washington to create a loop in metro system. It is unlikely that in the timescales of the current air quality objectives these options could be implemented, and therefore have any impact.

(xv) Flexible work times/school hours/ home working

The introduction of more flexible working hours, or encouragement for home working, could be used to reduce congestion could be reduced particularly during peak periods. There are likely to be both positive and negative social impacts; generally home working could enable people to work more flexibly, encouraging recruitment and staff retention. However, isolation of staff may have negative social implications and some people will not have the space or environment to work from home.

Newcastle City Council operates a `work life' balance system where there are no core hours of operation for individual members of staff. Staff have the flexibility to work between the hours of 7.00am and 7.00pm. Rolled out across most large employers, this could relieve congestion in the morning and afternoon peak periods which would improve air quality.

(xvi) More use of river transport

A study has been undertaken on promoting river taxis on the Tyne. Currently, there are no plans to proceed with this.

Table 3 Summary of measures associated with Promotion and Provision of Alternatives

Theme 3: PROMOTION AND PROVISION OF ALTERNATIVES												
Option	**Effects**					**Cost**		**Feasibility**				
	Vehicle flow	**Impact on Exposure**	**Vehicle-miles within AQMA**	**Emissions per vehicle mile**	**AQ impact**	**Cost to Council**	**Cost to others**	**Practica-bility**	**Wider impacts**			**Time scale**
									Social	**Environ-mental**	**Economic**	
Express commuter buses	>		>		L	L	H	M	++ve	+ve	+ve	M
Trams	>		>		M	V H	V H	L	++ve	+ve	+ve	L
Guided Buses	>		>		L/M	H	L-M	M	+ve	+ve	+ve	L
Park and Ride	>		>		L/M	H	User charge	H	+ve	+ve	+ve	M
Promotion of Cycling	>		>		L	L	Zero	H	++ve	++ve	0	S
Annual Travel Card Discount	>		>		L	L	User charge	H	+ve	+ve	+ve	M
Quality Bus Contracts	>		>		L	H	M	M	+ve	+ve	+ve	S-M
Travel Plans for businesses/ schools	>				L	L	L-M	H	+ve	+ve	+ve	S
Increase Pedestrian Areas			>		H	M-H	L	H	++ve	++ve	+ve	M
Car Loan Scheme			>	>	L	L-M	L	M-H	+ve	-ve	+ve	M
Use of car parking charges to encourage alternatives	>		>		M	L	M	H	-ve	+ve	-ve	S-M
Home Zones	>		>		L	H	L	M-H	++ve	++ve	0	M-L
Subsidise public transport	>		>		L	H	User charge	H	++ve	0	+ve	M
Create extra capacity on trains/ metro/ buses	>		>		L-M	V H	0	L-M	++ve	+ve	+ve	M-L
Flexible work times/school hours/ home working			>		L	L	L	H	++ve	++ve	0	S-M
More use of river transport			>?		L	V H	User charge	L	+ve	-ve	0	M-L

5.2.4 Information and Education

Promotional activities implemented through the first round of the LTP have consisted of six co-ordinated events across Tyne and Wear. These include initiatives such as 'Bike2work', 'leg-it day' and 'In town without my car'. LTP2 will build on these promotional activities. Some of the measures below will be bid for through the LTP, others, such as provision of air quality information to the public, will be undertaken by environmental health colleagues.

(i) Provision of real time information at bus stops

Real Time Passenger Information allows passengers to know exactly when the next bus will arrive and if there are any delays. This is just one measure which might persuade people to change mode to bus travel. *Changing the Way We Travel*[20] (report written on behalf of DfT) provides a useful overview of some other information provision schemes and their impact on bus patronage, with some commentary about the relationship with modal shift. As most schemes are implemented alongside wider measures it is difficult to make before and after comparisons purely in relation to information provision. However, some general experience has been summarised.

- Where a bus service is improved or is of reasonable quality, it is possible to achieve substantial increases in patronage over only a few months through targeted marketing, re-branding, better information or simpler ticketing products.
- Targeted marketing may be particularly effective in attracting former car drivers, whereas general increases in public transport quality that are not accompanied by marketing may mainly influence existing public transport users.
- Marketing and information may increase public transport usage, even in circumstances where it has been declining (e.g. Nottingham).
- Attention to information interventions may help achieve sustainable patronage growth (as demonstrated in Brighton).

20

http://www.dft.gov.uk/stellent/groups/dft_control/documents/contentservertemplate/dft_index.hcst?n=10689&l=1

(ii) Target schools and parents with information campaigns

This element of information and education should be implemented along with Travel Plans for schools to make a real impact on travel behaviour. A number of other benefits of modal shifts in journeys to school have been identified, namely:

- Improved safety – specifically in York, the introduction of school safety zones around primary schools appear to have approximately halved the number of 8-9 year olds involved in traffic accidents;
- Improvements in road safety skills;
- Increased independence for children;
- Health and fitness benefits;
- Improved attendance and ability to learn;
- Greater knowledge of environmental and citizenship issues;
- Community benefits;
- Increased social inclusion, and
- Increased awareness of the potential for change.

(iii) Target businesses (in conjunction with Travel Plans)

Again, providing information to businesses should be undertaken in conjunction with Travel Plans for those businesses in order that real changes occur. A number of other benefits of travel planning are highlighted below:

- Increases in bus use and associated ticket revenue;
- Increases in walking and cycling and associated health gains;
- Improved social exclusion;
- Better conditions for employees;
- Improved staff recruitment and retention;
- Good PR for businesses;
- The opportunity to contribute to environmental management standards (such as ISO 14001);
- Financial savings, and
- Better estate management (i.e. use of car parking space more effectively).

(iv) Health promotion (work with PCT, British Heart and Lung Foundation etc)

Promotion of good health can be related to both the links between air pollution and health, and in also in encouraging people to cycle and walk, especially for short journeys. Collaboration with external organisations such as the local Primary Care Trust could explored as a way of increasing the number of people which the

information and education on both health impacts of pollution, and encouragement away from private vehicles to healthier modes of walking and cycling.

(v) One-off events (e.g. 'in town without my car') to heighten profile

Travel awareness campaigns, such as 'Travelwise' or 'In town without my car' use a wide range of media aimed at improving general public understanding of problems resulting from transport choices, and what can be done to solve these problems including changing their own behaviour. As well as focusing on local environmental and health impacts, travel awareness campaigns also aim to improve informed knowledge of the facilities available for walking, cycling and public transport use. A review of the impact of these sorts of awareness-raising suggests that some campaigns (notably the road safety TV campaigns which were relatively high budget and high profile) can reach awareness levels of 70% or more.

However, it is more common for 20-40% of residents to become aware of travel awareness campaigns and their messages. The effect of this increased knowledge on car use is more difficult to assess, but results suggest that the amount of behaviour change achieved is variable depending on the degree of targeting, intensiveness and the nature of intervention.

(vi) Intelligent Transport Systems (ITS)

ITS is a collective name for a number of technology based approaches that are designed to improve the quality, safety and efficiency of public transport. ITS most frequently deployed at local level includes travel information (real time information for public transport as well as drivers), Urban Traffic Control (co-ordinated traffic signals), car park management (signs telling drivers where there are spaces in order that they do not drive round a town centre unnecessarily looking for parking spaces), and bus priority (changing traffic signals in order that buses have quicker journey times).

(vii) Education regarding safety on public transport

A reason often cited for not using public transport is safety, either real or perceived. Where a safety issue is perceived, education may persuade people to use public transport more often, thus cutting down on car trips. Education coupled with (for example) CCTV cameras in safety hot spots may encourage more people to use public transport.

(viii) Information about car parking on VMS

Clear and accurate signing around the city could assist in reducing unnecessary miles and travelled and congestion. This option could prevent extra travel within central Newcastle but does not incorporate any modal change (away from private vehicles). As such it is unlikely to cause a major improvement in air quality.

(ix) Target Developers

Developers could be targeted to provide information to home buyers regarding information about transport modes (pedestrian routes, public transport, cycle paths in the areas etc). Developers of large developments could be encouraged to provide better infrastructure (cycle paths, bus routes etc.) as part of a planning obligation or condition.

(x) Provision of information on 'High Pollution Days'

Provision of information on high pollution days, for example as people are driving into Newcastle to urge them to leave their car at a Park and Ride, may persuade some motorists to change their behaviour. More likely is that people who are particularly susceptible to high pollution (the elderly, asthma sufferers etc) may change behaviour in terms of exposure on high pollution days. For example, some sufferers may avoid doing exercise during pollution episodes. This last group of people could be targeted through doctors surgeries, pharmacies etc.

(xi) Production of newsletters and posters

As a method to get some of these above concepts over to the public, the use of newsletters and posters has been suggested as a way forward. Methods of increasing awareness could include posters on buses, billboards, production of newsletters to go out with free council papers etc.

Table 4 Summary of measures associated with Information and Education

Theme 4: INFORMATION AND EDUCATION												
Option	**Effects**					**Cost**		**Feasibility**				
	Vehicle flow	**Impact on Exposure**	**Vehicle-miles within AQMA**	**Emissions per vehicle mile**	**AQ impact**	**Cost to Council**	**Cost to others**	**Practica-bility**	**Wider impacts**			**Time scale**
									Social	**Environ-mental**	**Economic**	
Provision of real time information at bus stops	(>)		(>)		L	M	L	M	+ve	+ve	+ve	S-M
Target schools and parents with information campaigns	(>)		(>)		L	L	L	H	+ve	+ve	0	S-M
Target businesses (in conjunction with Travel Plans)	(>)		(>)		L	L	L	H	+ve	++ve	-ve	S
Health promotion	(>)		(>)		L	L	L	H	++ve	+ve	+ve	S
One off events (e.g. in town without my car)	(>)		(>)		L	L	0	H	+ve	+ve	0	S
Intelligent Transport Systems	(>)		(>)		L	M	L	M	+ve	+ve	+ve	M-L
Education regarding safety on public transport	(>)		(>)		L	L	L	M	++ve	0	0	S
Information about car parking on VMS	(>)		(>)		L	L-M	-	H	0	+ve	+ve	M
Target Developers	(>)		(>)		L	L	L	H	+ve	+ve	-ve potentially, defer development	S
Provision of information on 'High Pollution Days'	(>)		(>)		L (over an annual mean)	L	-	M	+ve	+ve	-ve potentially	M
Production of newsletters and posters	(>)		(>)		L	L	-	H	+ve	+ve	+ve	S

5.2.5 Planning

(i) Include cycle facilities in new developments

Planning conditions to require the provision of adequate cycle facilities for new developments is key to encouraging a modal shift to cycling. Such conditions might include the provision of cycle lanes and safe and secure cycle parks, or the improvement of existing facilities. The provision of cycle vouchers or other such incentives might also be promoted and considered as part of a package of mitigation measures in respect to commercial, retail and business developments within the Tyne and Wear area.

(ii) Consideration of the location of essential services, housing, employment

At the core of any plan or strategy to reduce overall distances travelled, traffic flow and congestion, is the need to influence where people live, work and enjoy their leisure time. Planning policy within Newcastle City Council and across the region as a whole is focussed on reducing travel demand where possible. This means providing individuals with the services and work opportunities close to home. Actions focused on encouraging development that seeks to reduce commuting and outward travel, such as the 'work-live' developments and 'bedzeds', will help reduce the overall impact of development on travel behaviour. Locations of services, housing and employment can be considered through the use of the accessibility model being developed for the LTP process.

(iii) More trees in the City Centre

Although planting trees and expanding on 'green spaces' does not reduce local concentrations of air pollutants significantly, increased planting has a positive impact on local environmental quality and amenity, if done sensitively. Plants and trees provide carbon traps in the urban environment, and can provide a sense of pollution screening (not least visually), thereby making tree planting a sensible and cost-effective additional condition of appropriate planning applications.

(iv) Improve joint working between local authorities (cross-boundary decision-making)

Co-ordination with respect to transport planning as well as air quality issues will be critical to ensure that measures implemented in one local authority are consistent with those transport measures of policies in neighbouring local authorities. The Tyne and Wear local authorities will continue to work closely together in developing the Local Transport Plan and Action Plans related to air quality.

(v) Implement greater planning controls in AQMAs

Local planning policy and development control policy should recognise the need for more sensitive decision-making in locations where air quality management areas (AQMAs) are formally designated. Where a proposed development has the potential to pose a significant health risk to members of the public, more stringent planning controls will need to be applied, with strict conditions to control direct or indirect emissions or to mitigate their impact.

Effective mitigation is likely to be the main planning tool for minimising the impacts from new developments on local air quality. Conditions can therefore be a very useful way of allowing development which would otherwise be undesirable. In relation to improving local air quality, conditions requiring pre-operational and post-operational air quality monitoring are common, or the contribution to a local on-going monitoring programme. Specific mitigation requiring technological fixes such as specific ventilation in residential property or re-location or orientation of facades may be appropriate for certain applications.

(vi) Local Development Frameworks need to identify AQMAs

As Local Development Frameworks (LDFs) and Local Development Schemes (LDSs) emerge within individual local authorities, the opportunity arises for AQMAs to be specifically identified. This will ensure that their profile is highlighted through local planning processes and development control procedures.

(vii) Cap existing development sites

It may be appropriate for a local authority (or groups of local authorities) to provide a ceiling for the number of residential units, commercial units or car-parking provision so as to reduce any cumulative impacts imposed by simultaneous development, the

intensification of development or the continuous development of a large site over time.

(viii) Encourage mixed-use developments

Designed to reduce travel demand and increase the overall integration of different (though compatible) land-use, mixed-use development has the potential to reduce the reliance on overall vehicle mileage and trips taken within a particular area. As well as obvious air quality and environmental benefits, there are socio-economic advantages to such planning policy. Current planning policy already encourages such developments where practicable.

(ix) Undertake air quality assessments of relevant new developments

The provision of an air quality assessment, either as part of a wider environmental statement or as a stand-alone report, should be a consistent requirement of planning applications that satisfy certain 'significant impact' criteria. Local authorities, or groups of local authorities working in collaboration, should agree on the criteria against which to judge whether or not a proposal is likely to impact significantly or otherwise on local air quality. Such criteria could be set out in a protocol or supplementary planning guidance.

(x) Supplementary Planning Guidance for Tyne and Wear to provide a framework for the evaluation of air quality

Consistency in local decision-making in respect to proposed developments is vital in providing an effective planning control system that strives to minimise environmental impacts from development. The development of a Supplementary Planning Document for the Tyne and Wear region is a way to ensure development control processes operate uniformly across the region. This might include how to address air quality as a material planning consideration, the consideration of cumulative impacts, low-polluting development and appropriate impact mitigation. Such Supplementary Planning Guidance at a regional-scale will provide a framework for addressing air quality and planning policy integration consistently across the region, for the benefit of local government and government agencies alike.

(xii) Use of a protocol for planning applications

A standard protocol for use in addressing individual planning application received by a local authority provides a formal, unified and more effective way of ensuring consistency in the processing of an application is maintained.

Table 5 Summary of measures associated with Planning

Theme 5: PLANNING												
Option	**Effects**					**Cost**		**Feasibility**				
	Vehicle flow	**Impact on Exposure**	**Vehicle-miles within AQMA**	**Emissions per vehicle mile**	**AQ impact**	**Cost to Council**	**Cost to others**	**Practicability**	**Wider impacts**			**Time scale**
									Social	**Environ-mental**	**Economic**	
Include cycle facilities in new developments	(>)		(>)		L	L	L-M	H	++ve	++ve	-ve	S
Consideration of the location of essential services, housing, employment	(>)	>	(>)		Potentially M-H	L	M	M	++ve	++ve	+ve	M-L
More trees in the City Centre					L	L-M	L-M	M	++ve	++ve		S-M
Improve joint working between local authorities					?	L		H	+ve	+ve	+ve	S
Implement greater planning controls in AQMAs	(>)		(>)		L-M	L	M-H	H	++ve	++ve	-ve	S
Local Development Frameworks need to identify AQMAs			(>)		L-M	L	M-H	H	+ve	+ve	-ve	M
Cap existing development sites		>			L-M	L	M-H	H	+ve	+ve	--ve	S
Encourage mixed use developments	(>)		(>)		L	L		H	+ve	+ve	+ve	S-M
Undertake air quality assessments of relevant new developments	(>)	(>)			L-M	L	M	H	+ve	+ve		S
Supplementary Planning Guidance for Tyne and Wear		(>)	(>)		L-M	L	M-H	H	+ve	+ve	-ve	S-M
Use of a protocol for planning applications		(>)	(>)		L-M?	L	L	H				S

6. Financing

The ability and opportunity for implementing this Action Plan depends primarily on securing adequate funding and sufficient revenue resources to fund the staff required to deliver the programme of measures. For the purpose of this draft Action Plan, the costs have been estimated, and banded as being low, medium and high. This Action Plan is being developed alongside, and in collaboration with the Local Transport Plan for Tyne and Wear for the period of 2005/6-2010/11. Further information on committed funding for the selected measures will be included in the final Action Plan when it is submitted with the final LTP in March 2006. Other potential sources of funding outside of the LTP include:

Developer contributions – through Section 106 agreements and similar voluntary arrangements, developers can contribute to improvements which are relevant for this Action Plan. As an example, the City Council secured resources to undertake air quality monitoring for the 55 Degrees North development at Swan House.

European projects – European funding is often a way to gain funding for innovation in transport planning and solutions and one funding source which Newcastle City Council, or the Tyne and Wear authorities through the LTP, could explore.

New Opportunities fund - a lottery distributor created by the National Lottery Act and sponsored by the Department for Culture, Media and Sport. One initiative is for green spaces and sustainable communities involving safer routes to green spaces or community involvement in sustainable development, through transport schemes and energy efficiency projects.

Direct charging – through road pricing, workplace charging, off-street and on-street parking charges.

Partnership funding - brings a wider stakeholder involvement in to the action plan, and may provide funding from transport operators, businesses and retailers, information providers etc.

Energy Saving Trust - which manages the Powershift programme on behalf of DfT. Powershift aims to help establish a market for clean fuel vehicles using alternative

fuels such as gas and liquified petroleum gases - see http://www.est-powershift.org.uk

7. Consultation

55 Consultation in the form of active participation and information provision and dissemination will be vital for the effective implementation of options identified as part of the Action Plan. Any individual option, or package of options, to improve local air quality will require the backing and support of stakeholders (i.e. business, public transport providers, members of the public). As such, stakeholders will need to take 'ownership' of the action planning process and feel part of the overall decision making process.

56 With regard to this Action Plan and the integration process with the Local Transport Plan, it was felt that extra consultation not within the realms of the LTP would duplicate effort and also would represent 'over consultation' with the public. As such, air quality will be one of the key areas of the LTP (and therefore LTP consultation).

57 The City Council has been proactive in consultation, and has previously carried out a public consultation exercise of 2500 homes and businesses on the declaration of the City Centre AQMA.

58 Due to the scale of the work involved in consulting on the LTP, the LTP partners have commissioned Bostock Marketing Group to undertake the consultation on their behalf. The company has experience in consulting on transport and a firm understanding of the issues and stakeholders which need to be involved. The consultation process will comprise the following activities:

- Review and summary of information on public perceptions/ needs relating to travel and transport already held;
- A household survey of 2000 households across Tyne and Wear to gain views on how transport in T&W could be improved. Numbers in each authority will reflect share of population;
- Focus groups and in-depth interviews will be used to elicit views from all major stakeholders (people with disabilities, black and minority ethnic groups, bus operators, taxi operators, haulage companies, general businesses, elected members, young people, the elderly, metro users, bus users, car users, pedestrians, cyclists);

- 30 in-depth interviews with other stakeholders who haven't been involved in the focus groups;
- A working group will be set up from those who have been consulted prior to consultation on the draft strategy options. This final stage is to consult on the appropriateness and acceptability of policies in the draft LTP prior to adoption, and
- The LTP website also provides information to the public on the LTP. The website as well as consultation activities will be promoted in the local press. There is also the opportunity to inform all residents of transport strategies and policies in Tyne and Wear within the local authority's monthly news publication.

8. Implementation and monitoring

An important component of the Action Plan is establishing mechanisms to ensure that the selected measures are implemented within the stated timescales, and that these measures are proving effective in delivering the expected improvements to air quality. There are also a number of subsidiary issues such as:

- How do the public perceive the Action Plan?
- Is the Action Plan cost-effective?
- What are the wider, non-air quality impacts and overall community impacts now that measures are being implemented?

The main objective of the Action Plan is to reduce air pollution within the designated AQMA(s). In the short-term however, this may be difficult to judge due to the effect of varying weather conditions on measured pollutant concentrations. It is therefore necessary to include other indicators, which will be principally derived from those included within the LTP.

Other measures included in the Action Plan, but not within the LTP, relate mainly to information provision and wider planning measures. These are deemed important to the overall improvement of air quality in the area, although they are unlikely to have a demonstrable impact on air quality in the timescale up until 2010. This is for two reasons mainly:

- These 'extra' measures support the measures included in the LTP (such as to increase public awareness of why such measures are being implemented)
- Many of the measures in Section 5 on planning, will impact over a much longer timescale than 2010, even though many of them can be implemented in the short-term.

The monitoring framework for the LTP is still under development, and currently includes a number of mandatory and local indicators. A number of these will provide information on progress with the Air Quality Action Plan, for example:

- Changes in area wide traffic mileage;
- Peak period traffic flow to urban centres;
- Congestion, and

- Modal splits (including information on travel plans).

The LTP will also include a mandatory indicator on air quality. Discussions are under way to explore how this may be best judged, but is expected to include some measure related to NOx emissions within the defined AQMA areas.

The City Council will continue to maintain a network of automatic and passive samplers, and it is intended that these data will be used to assess progress. To avoid the effect of varying meteorology on a year-by-year basis, a scheme based on 3-year rolling means is currently being explored.

Annex 1. Attendants of November 2004 Workshop

Jan Lawton	Gateshead BC
Rebecca Marcus	Gateshead BC
Alison Beattie	Newcastle City Council
Alan Creedy	Newcastle City Council
Rod Stevens	Nexus
Kevin Ridpath	North Tyneside Council
Caine Spence	South Tyneside Council
Keith Atkinson	Sunderland City Council
Ian Abernathy	Gateshead BC
Tim Deveaux	Gateshead BC
Ed Foster	Newcastle City Council
Rachel McNutt	Newcastle City Council
Dave Hunter	Newcastle City Council
Charlotte Washbourne	North Tyneside Council
Dave Winder	South Tyneside Council
Joanne Brennan	Sunderland City Council
Louise Billcliffe	Gateshead BC
Elaine Brick	Local Transport Plan
Colin Percy	Newcastle City Council
Matthew Payne	Newcastle University
Andrew Meara	Sunderland City Council
Frances McClen	North Tyneside Council
Mark Lee	Highways Agency
Clare Beattie	University of the West of England
Penny Wilson	Air Quality Consultants
Steven Ramshaw	Gateshead BC
Clive Gowlett	Gateshead BC
Adrian McLoughlin	Newcastle City Council
Mark Lawrence	North Tyneside Council
Ian Rutherford	South Tyneside Council
Marion Dixon	Sunderland City Council
Dr. Monica Price	Sunderland University
Andrew Haysey	Gateshead BC
Gary Macdonald	Local Transport Plan
Matthew Atkins	Newcastle City Council
Michael Terry	Newcastle City Council
Hillary Brewer	South Tyneside Council
Graydon Martin	Sunderland City Council
Geraldine Stubbs	Sunderland University
Nicky Woodfield	University of the West of England