



Air Quality Action Plan 2015 - 2018

Dacorum Borough Council

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

December, 2014

Executive Summary

The Environment Act 1995 requires all Local Authorities to review air quality within their area. If it appears that any air quality 'objective' prescribed in the regulations and in the National Air Quality Strategy is not likely to be achieved then the Local Authority must designate the affected areas as Air Quality Management Areas (AQMAs). The Act then requires that an Air Quality Action Plan (AQAP) be produced for any areas designated as AQMAs, setting out the actions that the Council intend to take to achieve the air quality objectives.

In June 2012 Dacorum Borough Council formally declared three identified areas where it was likely that the air quality objective for nitrogen dioxide (NO₂) would not be met. Following this, in March 2013 a Further Assessment was completed which indicated that the annual mean NO₂ objective continued to be exceeded within all three AQMAs. In respect of the High Street, Northchurch AQMA, it was advised that the boundary of this AQMA be revised to potentially incorporate any other residential locations within the area predicted >36µg/m³. The boundary of this AQMA has since been amended to incorporate 84 – 96 High Street, Northchurch.

Dacorum Borough Council works with the Local Transport Authority, (Hertfordshire County Council), to help secure improvements to the network. This AQAP aligns with the Local Transport Plan (LTP3).

The AQAP confirms the likely source of NO₂ is from transport and in particular from ambient background concentrations. The degree of improvement needed in order for the annual mean objective to be achieved is defined by the difference between the highest measured or predicted annual mean concentration and the 40µg/m³ objective level. Reductions of 22.2, 17.3 and 7.3µg/m³ would be required in order for the objective to be achieved within the Lawn Lane, Hemel Hempstead, London Road, Apsley and High Street, Northchurch AQMAs respectively (based on 2011 data). This is a considerable reduction and therefore a challenge for any Plan. Ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations within all three AQMAs followed by emissions from cars and good vehicles on local roads. Buses also contribute within AQMA 1 and 3.

The AQAP recommends twenty measures for implementation, which are aimed at reducing levels of air pollution within the three AQMAs and improving air quality across the borough in general. The twenty measures have been assessed against a range of criteria in order to assess their suitability for inclusion and enable the most suitable measures to be prioritised.

Those measures which are anticipated to provide good air quality benefits (with appropriate consideration of cost-effectiveness, feasibility and acceptability), are most likely to contribute (either directly or indirectly) towards NO₂ reductions within the AQMAs and are realistically achievable within the short to medium-term have been given highest priority for implementation. The Plan also sets out the framework of partnership working with other organisations, within which the actions have been developed and will be progressed and monitored.

It is acknowledged that the AQAP is a continuously evolving document involving numerous groups and Authorities. Whilst a number of the measures contained within the Plan are considered achievable within the short to medium term, others are more long-term goals; this report represents the first three years of a long-term plan to improve air quality within the borough. The Plan will be revised on a three yearly cycle (or earlier if deemed necessary).

It is acknowledged that the requirements of local businesses and the community must be balanced against improving local air quality. The actions and measures will provide other benefits for Dacorum and its surrounds, which are beyond the original scope of the AQAP.

The benefits include:

- Reduction of other pollutants such as particulate matter, benzene etc.
- Reduction in emission of greenhouse gasses
- Reduced noise from traffic
- Reduced congestion
- Environmental improvements when schemes are undertaken
- Assist with climate change policies
- Improvements to human health

In compiling this AQAP, Government Guidance LAQM.PG (09) and the Review and Assessment reports produced by Dacorum Borough Council have been referred to. The AQAP has been subjected to statutory and public consultation and amended accordingly prior to formal adoption.

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1 Introduction

This local Air Quality Action Plan (AQAP) sets out a work programme for the improvement of air quality within the borough of Dacorum. The work programme is led by Dacorum Borough Council (hereon referred to as 'the Council') and implemented in partnership with the Local Transport Authority (Hertfordshire County Council). The AQAP has been subjected to statutory and public consultation and amended accordingly prior to formal adoption.

The Borough of Dacorum comprises a mix of urban and rural land uses situated on the western edge of Hertfordshire. Located approximately 30 miles northwest of central London, the Borough has a usual residential population of approximately 148,200¹ (Office for National Statistics, 2014), which is predominantly centred on the towns of Hemel Hempstead, Berkhamsted and Tring.

Major roads within the area include the M1, which crosses the eastern side of the borough, the M25, which is located near the southern boundary of the borough, and the A41, which closely bypasses Hemel Hempstead, Berkhamsted and Tring, linking Aylesbury to the west with Watford to the east. The area is well connected to London and the midlands via a major rail link that traverses the borough and terminates at London Euston.

The Council undertakes monitoring of the main local air pollutants associated with urban areas: nitrogen oxides (NO_x; consisting of nitrogen oxide (NO) and nitrogen dioxide (NO₂)). The results of the monitoring clearly indicate that health-based national air quality objectives are being exceeded in some areas within the borough. Predictive modelling studies have also been used to better understand the spatial extent of the problem, and to help determine likely pollutant concentrations in the future.

Based on the monitoring and modelling work undertaken by the Council, several areas have been identified as unlikely to be meeting national objectives, and hence the Council have declared three Air Quality Management Areas (AQMAs). The air quality problem in Dacorum is predominantly a result of emissions from road vehicles, as is the case elsewhere in the UK. Car ownership within Hertfordshire and the borough of Dacorum is higher than the national average. Based on the last national census conducted in 2011, 84 per cent of households within Dacorum had at least one car, compared to 74 per cent nationally.

¹ Mid Year Estimate as at 30th June 2013.

1.1 Aims and Objectives

This AQAP summarises the air quality review and assessments that have been undertaken to date, focussing on exceedances of the air quality objectives. It goes on to describe the actions that the Council will take (in conjunction with Hertfordshire County Council and others) to improve air quality within the borough as a whole, and particularly in the three declared AQMAs. This report represents the first three years of a long-term plan to improve air quality within the borough. The Plan will be revised on a three yearly cycle (or earlier if deemed necessary).

1.2 Report Contents and Structure

Local Air Quality Policy Guidance was published by Defra in 2009, referred to as LAQM.PG(09); this provides statutory guidance on the development of AQAPs.

Defra (2009a) states that an AQAP must include the following:

- *‘Quantification of the source contributions to the predicted exceedances of the relevant objectives; this will allow the Action Plan measures to be effectively targeted;*
- *Evidence that all available options have been considered;*
- *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 authority and other organisations and agencies propose to implement the measures within its plan;*
- *Where possible, quantification of the expected impacts of the proposed measures and an indication as to whether the measures will be sufficient to meet air quality objectives. Where feasible, data on emissions could be included as well as data on concentrations where possible; and*
- *How the local authority intends to monitor and evaluate the effectiveness of the plan’.*

The Environment Act 1995 does not prescribe any timescale for preparing an AQAP; however, it is expected that this will be completed between 12-18 months following designation of any AQMAs. The three AQMAs within Dacorum were formally designated on 1 June 2012.

It is recommended that a Further Assessment of air quality should be undertaken in parallel with the development of the AQAP to provide the technical justification for the measures an authority later includes in its AQAP. The Further Assessment of air quality was undertaken

by Air Quality Consultants Ltd on behalf of the Council in March 2013; the findings of which have been summarised within this AQAP.

The remainder of the report is structured as follows:

- **Section 2** provides an overview of the significance of local air quality management on human health, the statutory duties placed on Local Authorities, and a summary of existing plans and strategies which may influence air quality within Dacorum.
- **Section 3** presents a summary of air quality monitoring currently undertaken by the Council. It also provides an overview of the local air quality management review and assessment work carried out to date, the results of the source apportionment exercise undertaken, including the degree of improvement required to meet the air quality objectives.
- **Section 4** describes how the AQAP has been developed.
- **Section 5** summarises the AQAP, outlining the measures proposed for implementation at this time.
Section 6 describes the methodology and criteria utilised in order to assess the suitability and prioritisation of the short-listed measures for inclusion within the AQAP.
- **Section 7** describes the reasoning behind the prioritisation of measures.
- **Section 8** discusses potential funding opportunities for the AQAP.
- **Section 9** summarises the view and comments received in respect of the public consultation process.
- **Section 10** summarises and concludes the findings of the AQAP.

2 Air Pollution and Local Air Quality Management

This section provides an overview of air pollution and the associated health impacts and the local air quality management (LAQM) process in England. It outlines the significance of LAQM in the context of human health, the legislation in place to protect human health, and the statutory duties placed on Local Authorities in relation to LAQM.

2.1 Air pollution and human health

Air pollution has a well understood negative impact on human health and the surrounding environment. Tackling air pollution is about preventing ill health, improving health and life expectancies, and benefiting our environment and quality of life.

It is widely accepted that exposure to air pollutants, even to the historically low levels found in countries such as the UK, can damage health. Recent work has suggested that inflammatory processes triggered by inhalation of pollutants may play important roles: either directly, leading to effects on the respiratory system, or indirectly, leading to effects on the cardiovascular system. Such effects are manifested as increased hospital admissions and daily deaths. Long-term exposure to pollutants, in the main, particulates, has been shown to contribute to the progression of cardiovascular disease and a reduction in life expectancy.

The House of Commons Environmental Audit Committee's fifth report on Air Quality published in March 2010 compares the gains in life expectancy that could be realised by improving poor air quality (in particular reducing exposure to PM_{2.5}) within those arising from action on passive smoking and road accidents. Based on Department of Health data the Committee reported that gains in average life expectancy of 7-8 months could be achieved from reductions in air pollution, whereas eliminating passive smoking and road accidents only provides average gains of 1-3 months.

Road vehicle emissions are the primary source of poor air quality within the borough. The three main transport-related emissions are:

- **Nitrogen oxides (NO_x)** Nitrogen dioxide (NO₂) and nitric oxide (NO) are collectively known as Nitrogen Oxides (NO_x). Nitrogen Oxides (which are the main source of poor air quality) are produced during all combustion processes in air, usually in the form of NO which subsequently reacts with ozone (O₃) to form NO₂. Road transport is responsible for approximately fifty per cent of the emissions of NO₂ in Britain.

Commercial, industrial and domestic sources also make a small contribution to background. NO₂ has been identified as having various adverse health effects particularly on the respiratory system and in both asthmatics and non-asthmatics. Short-term exposure to this pollutant can increase the likelihood of reaction to allergens such as pollen and has been known to increase asthma in some people. Children exposed to this pollutant may have increased risk of respiratory infections.

- **Particulates (PM₁₀ and PM_{2.5})** Particulates can be produced directly from combustion and other processes, as well as from natural activities. They can also be caused by chemical reaction in the air. Particulates of less than 3µm can pass deep into the lungs thus causing respiratory problems.
- **Carbon monoxide (CO)** Carbon monoxide is a colourless, tasteless gas, which is known to be poisonous when incomplete combustion occurs. Inhaling small doses of this gas can result in a person becoming confused and having reduced co-ordination. It can also increase the likelihood of angina.

Although the focus of this AQAP is NO₂, the measures contained within this AQAP will also bring about reductions in concentrations of the other transport-related pollutants.

It is clear that tackling traffic-related air pollution has synergies with tackling climate change, noise pollution and many other issues to make Dacorum a more pleasant and healthier borough in which to live.

2.2 The legislative framework for air quality

The Environment Act 1995 placed a responsibility on UK Government to prepare an Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland. The current version of the strategy published in 2007 sets out the current UK framework for air quality management and includes statutory objectives (standards) for the following key pollutants:

- Nitrogen dioxide
- PM₁₀ particulates
- Benzene
- 1,3 – butadiene
- Lead
- Sulphur dioxide
- Carbon monoxide
- Ozone

The objectives are expressed as a maximum ambient concentration not to be exceeded, either without exception or with a permitted number of exceedences within a specified timescale. The objectives have been set throughout the UK and European Union at levels that aim to protect the vulnerable in society from the harmful effects of breathing pollution. The objectives only apply at locations where members of the public are likely to be exposed over the averaging period of the objective, termed 'relevant exposure'. The National Air Quality Objectives for England are shown in **Table A.1** in **Appendix A**.

The UK government recognises that action taken at the local level can be an effective way of tackling localised air quality problems leading to an overall improvement of air quality. Part IV of the Act requires each Local Authority within the UK to periodically review and assess air quality its area. The 1997 National Air Quality Strategy introduced the Local Air Quality Management (LAQM) model and associated Review and Assessment process. The Review and Assessment process requires Local Authorities to undertake annual assessments of air quality and determine areas where any of the air quality objectives are likely to be exceeded. In such instances, the Local Authority is required to undertake a Detailed Assessment of air quality and declare an AQMA. The Local Authority must then carry out a Further Assessment of air quality and in parallel develop an AQAP, which must include measures to improve air quality so that the objectives may be achieved in the future. Once the AQAP is adopted, the Council will report progress on its implementation annually and revise it from time to time as required. The Review and Assessment timetables and methodologies are prescribed in the statutory Technical Guidance document LAQM TG(09).

Review and Assessment reports completed by the Council are published on our Air Quality webpage: <http://www.dacorum.gov.uk/air-quality>.

In addition to the Local Air Quality Management regime, the Government has a responsibility to achieve limit values (as specified within the EU Air Quality Directive (2008/50/EC4)), everywhere in the UK where the public have access. EU limit values are legally binding EU parameters that must not be exceeded. In respect of the annual mean limit value for NO₂ (40µg/m³), the date for this to be achieved (and maintained) was 1 January 2010 (an application has been made by the Government for a time extension). Member States must report any exceedences of the EU limit values to the European Commission. For the purposes of national air pollution monitoring; the UK has been divided into zones and agglomerations (43 in total). To assess compliance with the EU limit values the UK uses monitoring data from the Automatic Urban and Rural network (AURN) supplemented by modelling data. Exceedances of the EU limit values (in terms of zones and agglomerations)

are reported to the European Commission annually. Annual reporting (for the 2010 reporting year) indicated that 40 of the 43 zones/agglomerations exceeded the NO₂ annual mean limit value in the UK. The national air quality monitoring has been used to characterise limit value exceedences along roads in each local authority area. This national exceedence area data will be made available to local authorities imminently.

EU limit values are legally binding on Member States and, in the UK are enforced through two main mechanisms:

- European enforcement action
- UK planning law

The European Commission can take enforcement ('infraction' or 'infringement') action against Member States who fail to meet the limit values. The Commission can impose an unlimited lump sum and daily fines on Member States, which the Localism Act 2011 allows the Government to pass to the Mayor of London and/or Local Authorities subject to certain protections. On 20 February 2014, legal action was launched by the European Commission against the UK for its 'failure to cut excessive levels of nitrogen dioxide' – largely from road traffic. It is possible that if a Local Authority fails to take suitable actions to reduce air pollution in their areas that they may be apportioned a share of the European fine issued.

2.3 Partnership working towards air quality targets

The Government encourages a co-ordinated and integrated approach to dealing with air quality issues. Local Authorities should engage and work with relevant parties (such as the County Council) and consider existing policies and strategies in pursuit of air quality improvements.

2.3.1 Partnership working with the Local Transport Authority

Under the Local Transport Act 2008 each English Local Transport Authority must prepare a document to be known as the Local Transport Plan, containing:

- Policies (a strategy); and
- Implementation plans, i.e. proposals for the implementation of those policies.

Hertfordshire County Council is responsible for the overall transport strategy in Hertfordshire. The third Local Transport Plan (LTP3) for Hertfordshire was published in April 2011, and covers the period 2011-2031. LTP3 sets out the transport strategy for Hertfordshire (over the next 20 years), the goals and challenges to be met, and outlines a programme of transport schemes and initiatives (interventions). The various interventions are to be delivered over the

short, medium and longer term. Targets have also been set so that progress towards meeting the strategy objectives can be measured.

The goals set out in LTP3 include:

- Support economic development and the planned dwelling growth;
- Improve transport opportunities for all and achieve behavioural change in mode choice;
- Enhance quality of life, health and the natural environment for all Hertfordshire residents;
- Improve the safety and security of residents using the network; and
- Reduce transport's contribution to greenhouse gas emissions and improve its resilience.

To achieve these goals Hertfordshire County Council has identified thirteen challenges and has put forward proposals to address these. All of these challenges will have an impact on uptake of sustainable transport or transport in general and therefore will impact on air pollutant emissions.

Challenge 1 Keep the county moving through efficient management of the road network to improve journey time, reliability and resilience and manage congestion to minimise its impact on the economy.

Challenge 2 Support economic growth and new housing development through delivery of transport improvements and where necessary enhancement of the network capacity.

Challenge 3 Improve accessibility for all and particularly for non-car users and the disadvantaged (disabled, elderly, low income etc.)

Challenge 4 Achieve behavioural change as regards choice of transport mode increasing awareness of the advantages of walking, cycling and public transport, and of information on facilities and services available.

Challenge 5 Achieve further improvements in the provision of public transport (bus and rail services) to improve accessibility, punctuality, reliability and transport information in order to provide a viable alternative for car users

Challenge 6 Improve journey experience for transport users in terms of comfort, regularity and reliability of service, safety concerns, ability to park and other aspects to improve access.

Challenge 7 Improve the health of individuals by encouraging and enabling more physically active travel and access to recreational areas and through improving areas of poor air quality which can affect health.

Challenge 8 Maintain and enhance the natural, built and historic environment managing the streetscape and improving integration and connections of streets and neighbourhoods and minimising the adverse impacts of transport on the natural environment, heritage and landscape.

Challenge 9 Reduce the impact of transport noise especially in those areas where monitoring shows there to be specific problems for residents.

Challenge 10 Improve road safety in the county reducing the risk of death and injury due to traffic accidents.

Challenge 11 Reduce crime and the fear of crime on the network to enable users of the network to travel safely and with minimum concern over safety so that accessibility is not compromised.

Challenge 12 Reduce greenhouse gas emissions from transport in the county to meet government targets through the reduction in consumption of fossil fuels.

Challenge 13 Design new infrastructure and the maintenance of the existing network in the light of likely future constraints and threats from changing climate, including the increasing likelihood of periods of severe weather conditions.

LTP3 specifically sets out that the county council will seek to:

- Reduce the levels of emissions from road traffic which affect human health and local flora and fauna.
- Reduce the volume of traffic in areas and in time periods where emission levels are causing locally poor air quality.
- Encourage the through traffic to use the Primary Route Network which where possible to avoid major urban areas.

- Work with district/borough councils to monitor and assess air pollution levels. Where a district/borough council declares an AQMA as a result of its review and assessment process, the county council will work in partnership with the district/borough councils to create and deliver action plans.

Local Transport Plan Annual Progress Reports are published by Hertfordshire County Council, which contain a series of indicators providing important data to enable progress with each of the thirteen challenges to be assessed. These reports are available to view online at www.hertsdirect.org/ltp.

A number of other transport strategies have been produced, as daughter documents within the LTP framework, the implementation of which will contribute to air quality improvements across Hertfordshire and the borough of Dacorum. These include (but are not limited to):

- Bus Strategy (<http://www.hertsdirect.org/docs/pdf/b/busstratcons.pdf>)
- Intalink Strategy (<http://www.intalink.org.uk/downloads/PDFS/intalinkstrategy.pdf>)
- Sustainable Modes of Travel Strategy for Schools and Colleges (<http://www.hertsdirect.org/docs/pdf/s/SMOTS1314>)
- Active Travel Strategy (<http://www.hertsdirect.org/docs/pdf/a/ATS2013.pdf>)

In January 2013 Hertfordshire County Council published the following document '*Protocol for supporting districts with Air Quality Related Issues*'. This protocol sets out how the County Council will work with district/boroughs in terms of providing air quality monitoring data and other support around AQMAs.

The 'BigHertsBigIdeas' project, managed by Hertfordshire County Council, is a package of complementary transport schemes which aims to improve the local economy and reduce carbon emissions in Watford, St Albans and Hemel Hempstead. The package is comprised of innovative and congestion-busting travel options for local people, businesses and residents, including:

- New and improved routes and facilities for pedestrians and cyclists
- Better public transport services for bus and train passengers
- Innovative new transport schemes for young people
- Travel planning, education, incentives and behavioural change schemes for local residents, schools and businesses
- New technology for road and bus users

The project was awarded a grant of £9.7 million from the Government's 'Local Sustainable Transport Fund'. This grant has been supported further by match funding from the County Council, Borough/District Authorities and developer contributions, providing another £3.3 million. Hertfordshire's bid was divided into two stages. In stage 1, Hertfordshire was awarded £1.99 million to deliver schemes by March 2012. In the second, more detailed stage, £9.679 million was awarded to be spent before March 2015 to improve sustainable travel in St Albans, Watford and Hemel Hempstead. After 2015, many of the individual schemes will either be completed or become self-funding.

Some schemes within the 'BigHertsBigIdeas' package were intended to be implemented across the whole LSTF bid area, whilst others are specific to Watford, St Albans and Hemel Hempstead.

LSTF area-wide schemes include:

- **Cycle parking improvements in Watford, St Albans and Hemel Hempstead**
Implementation of new cycle parking facilities in targeted locations across the bid area between April 2012 and March 2015.
- **Quality Network Partnership (QNP) Bus infrastructure upgrades**
Expansion of the existing QNP partnership operations from St Albans to the wider package area. Establishment of QNP in Watford and Hemel Hempstead.
- **QNP Publicity and Marketing**
Provision of stop specific information and marketing for services. Funding for two project officers to deliver the QNP element of the package.
- **Electric Charging Points**
Implementation of electric vehicle charging points in Watford, St Albans and Hemel Hempstead.
- **SCooTS (including electric scooters)**
Expansion of existing scooter loan scheme, which loans mopeds to individuals who cannot access work and education easily. Provision of a phased payment plan for scooter ownership.
- **Home to School Transport: Central Hub and Travel Planning**
Establishment of a Central Hub to procure and administrate school transport to help schools reduce peak hour congestions.
- **Skyride partnership**
Promotion of the SkyRide Local programme.
- **Challenge for change (Business Cycle Challenge)**

Organisation of a cycle challenge for businesses within the LSTF area and provision of ongoing market research to assess the longer term impact of the challenge.

- ***Intelligent Transport Systems (including QNP Smart Ticketing)***

LSTF funding to assist in the delivery of a number of projects in the bid area, and expand others. These are:

- Smart ticketing, including hardware for the smart ticketing schemes and purchase of smart cards to provide cashless payments for bus travel.
- Real Time passenger information
- Variable message signing (and advance vehicle location technology for accurate travel times)
- A web journey planner to provide better travel information.

- ***Business and School Travel Planning***

LSTF funding to provide three dedicated 'BigHertsBigIdeas' support officers and resources to deliver the follow measures:

- Promotional events to promote and support the physical elements of the bid
- Working with businesses in the bid area to promote the package measures
- A Walk to School campaigns dissemination of best practice across the bid area
- Delivery of a new website for the bid area to incorporate a travel planning toolkit for both schools and businesses
- Funding of a 'Bike It' officer to work with both schools and businesses.

Those schemes specific to Hemel Hempstead include:

- ***Improved and new walking and cycle routes to Maylands Business Park***

Provision of new and enhanced walking and cycle routes to Maylands Business Park from other parts of Hemel Hempstead.

- ***Improvements to local sections of the National Cycle Network***

Provision of physical improvements on the Nickey Line cycle route between Hemel Hempstead town centre, Maylands Business Park, and St Albans.

- ***Urban Realm improvements at Maylands Business Park***

Provision of urban realm improvements at Maylands Business Park to provide a prioritised environment for:

- Pedestrians and cyclists (linking in with Nickey Line and Maylands walking and cycling elements)
- Bus passengers (linking in with the Maylands to Station bus link and route enhancements).

- ***Maylands Business Park – Railway Station Bus Link and Bus Infrastructure Improvements***

Implementation of improvements to the bus infrastructure between Maylands Business Park and Hemel Hempstead Railway Station. Initiation of an eventually self-funding 'Express Bus Service' linking Maylands Business Park to Hemel Hempstead Railway Station (via the Town Centre).

- ***Travelsmart Hemel Hempstead***

Provision of a personalised travel planning programme for residents of Hemel Hempstead.

- ***Maylands Area Travel Plan and E-Car Club***

LSTF funding for 2012/13 – 2014/15 to provide a dedicated travel plan officer for the Maylands Business Park area to work with employers, to promote sustainable transport options including the promotion of the E-Car Club and electric charging points.

The various sustainable transport initiatives for the Maylands Business Park area have under grouped together under the branding of '*Maylands on the Move*'. These initiatives are aimed at businesses and employees and seek to promote more efficient and sustainable ways of travelling to and from Maylands Business Park. '*Maylands on the Move*' supports the future development of Maylands as a sustainable, well connected Green Business Park, providing an accessible location for businesses to settle and thrive. The initiatives focus upon:

- Promoting public transport
- Encouraging responsible car use
- Supporting active travel
- Developing smarter business working practices and business travel

Benefits on offer to Maylands businesses include:

- Reduction in operating costs, promotion of efficient working and help in retaining and recruiting staff
- Improvement in staff health, increased staff productivity and reduction in sickness leave
- Car parking management solutions
- Demonstration of corporate social responsibility, commitment to environmental issues and support with reducing your carbon footprint
- Enhancement of your reputation as a good employer and a good neighbour

Benefits on offer to Maylands employees include:

- Cost savings and decreased fuel consumption
- Opportunities to build exercise into daily lives
- Improved accessibility to work
- Less stressful commuting options
- Chance to cut personal footprint

Businesses within the LSTF area are encouraged to sign up to the BigHertsBigIdeas Business Network, which gives businesses:

- Up to a day's free access to practical advice from travel planning experts
- Special discounts for employees from major local transport operators
- Free access to the hertsliftshare.org car sharing database
- Access to partner organisations offering cycle training & repair and retail offers for staff
- Regular network newsletters, events and a members-only group on LinkedIn
- Specialist analysis tools including GIS mapping of employee locations (analysis taking more than a day may be chargeable)
- An accreditation scheme for engaged businesses

The following discounts and offers have been made available to employees of businesses signed up to the *'Maylands on the Move'* project:

- Free access to the Maylands Car Share Scheme
- 20 per cent off 4-weekly Arriva saver tickets
- Active travel maps and guides illustrating cycling and walking routes to Maylands
- 10 per cent off 3-monthly Centrebus tickets
- Access to the Maylands E-Car Club
- 10 per cent off 4-weekly Greenline saver tickets
- Expert advice on any transport travel issue / query / strategy
- Specific Arriva Maylands website
- Links to the Intalink public transport website
- Maylands cycle discount card (10% discount at participating retailers)
- Scoots Wheels to Work project – phased payment plans for scooter ownership
- 'Maylands on the Move' website resource for transport and travel information at Maylands Business Park
- Maylands Bus Link
- Public transport area route map, time tables and information.

The success and progress made with each of the schemes within the 'BigHertsBigIdeas' package is being monitored and assessed on an annual basis throughout the duration of the project. Outcome Monitoring Reports have, and will be, published for the financial years 2012/13 – 2014/15 to provide evidence of travel patterns during the first, second and final years of LSTF programme interventions and interim delivery outcomes for the variety of projects. These reports take evidence from a number of data sources to present a quantifiable story of travel patterns across the three LSTF areas. Data from the non-LSTF districts of Welwyn Hatfield and Stevenage provide 'control' evidence of travel patterns and behaviour outside of the LSTF area. A conclusion report to be published in 2016, which will attempt to measure the impact of the LSTF programme based on data provided in the annual Outcome Monitoring Reports.

Full details of the bid, including the annual Outcome Monitoring Reports, can be found at <http://www.hertsdirect.org/services/transtreets/ltplive/lstf/>.

Although air quality is not a primary objective of the LSTF programme, it is recognised that changes to travel behaviour, especially those relating to car travel, will have a positive impact on air quality within Hemel Hempstead.

2.3.2 Partnership working with Development Control

The land use planning system is recognised as playing an integral part in improving air quality. The Council has developed its planning policies and procedures to help ensure that planning applications that may have impacts on air quality are assessed appropriately against these policies.

The National Planning Policy Framework (NPPF), adopted in March 2012, sets out the Government's planning policies for England and how these are expected to be applied. The NPPF replaces over a thousand pages of national policy (including *'PPG 23: Planning and Pollution Control'*). The NPPF must be taken into account in the preparation of Local and Neighbourhood Plans, and is a material consideration in planning decisions. Planning policies and decisions must reflect and where appropriate promote relevant EU obligations and statutory requirements.

The framework on air quality contained within the NPPF is stated in paragraph 124 as follows:

'Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air

Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan.'

Dacorum Borough Council's Core Strategy was formally adopted by the Council on 25th September 2013². Many of the policies in the Adopted Dacorum Local Plan have now been replaced by the Core Strategy, including Policy 11. This made specific reference to the potential impact of development proposals on air quality (criterion (j)). However, as an overarching spatial document, the Core Strategy does not currently contain detailed development control policies; these remain (where not superseded) as 'saved' policies in the existing Local Plan.

In September 2014 the pre-submission version of the Site Allocations DPD was published for consultation. This forms a material consideration in the determining of planning applications and includes transport specific proposals to help improve transport movement and encourage alternative forms of transport than the car.

Some general advice is provided under Policy CS32 within the Core Strategy. This relates to the control/reduction of air pollution through planning/development control mechanisms.

Policy CS32: Air, Soil and Water Quality

Development will be required to help:

- a) Support improvements in identified Air Quality Management Areas and maintain air quality standards throughout the area;***
- b) Maintain soil quality standards and remediate contaminated land in line with Environment Agency, Defra and Natural England guidance; and***
- c) Improve water quality standards in line with the Water Framework Directive, Environment Agency and Natural England guidance.***

Any development proposals which would cause harm from a significant increase in pollution (into the air, soil or any water body) by virtue of the emissions of fumes, particles, effluent, radiation, smell, heat, light, noise or noxious substances, will not be permitted.

Advice on the storage and handling of hazardous substances will be taken from the Health and Safety Executive.

² In adopting the plan, the Core Strategy was subject to a High Court Challenge, which Dacorum Borough Council successfully defended.

The background to Policy CS32 is set out in the paragraphs below:

Extract from the Adopted Core Strategy (September 2013):

18.33 *The planning system plays a key role in the location and standard of development. Together with other consent regimes and processes, it can limit the impact of (and prevent) polluting emissions – i.e. noise, light, fumes, chemicals, noxious and hazardous substances and waste in general. Standards set nationally should continue to be achieved. When standards become more stringent, efforts must be made to enhance the quality of the air, water and/or soils.*

18.34 *In Dacorum special consideration needs to be given to:*

- *the quality of the groundwater supplying the chalk aquifer;*
- *protecting the habitat and biodiversity of chalk streams;*
- *the maintenance of higher quality agricultural areas and the sand and gravel belt;*
- *limiting the effects of noise and air pollution along major routes (i.e. road, rail and aircraft from Luton Airport);*
- *retaining tranquil parts of the Chilterns Area of Outstanding Natural Beauty and Boarscroft Vale; and*
- *the risks associated with Buncefield Oil Terminal.*

18.37 *Air quality within Dacorum is generally good, with the main source of air pollution being from traffic emissions, specifically nitrogen dioxide. In 2012 three areas were designated as Air Quality Management Areas (AQMAs) because levels of nitrogen dioxide exceeded air quality standards: i.e.*

- *Lawn Lane, Hemel Hempstead;*
- *London Road, Apsley, Hemel Hempstead; and*
- *High Street, Northchurch.*

The number and extent of AQMAs will change as a result of mitigation measures and continued monitoring of air quality.

18.38 *Action plans will highlight mitigation measures for each AQMA. The planning system will be used to support these action plans. It does not necessarily follow that development would be harmful in an area of poor air quality or that it should be banned in an AQMA. Here, the type, scale and location of development and its traffic*

generation will be managed sensitively. Greater weight will be given to the consideration and removal of air pollutants.

The NPPF considers both air quality objectives and EU limit values, as such; the EU limit values are a material consideration in the planning system. Developments should not proceed if they are likely to cause or contribute to a breach, or the worsening of a breach, of a limit value unless the impacts are fully mitigated. This is the first time EU limit values have been integrated into the UK planning system. Any proposed development within a national exceedance area (should any be identified within the borough), will require an assessment in terms of its air quality impact (EIA) as is currently the case for developments within (and in the vicinity of) the three declared AQMAs. It must be noted that the national exceedance area model does not take into account local conditions (e.g. congestion etc.) so may conflict with local air quality monitoring data and reporting.

In 2010, EPUK carried out a major review of its guidance document related to development control and air quality. The document has been widely used and frequently cited at planning inquiries. Since then, the planning regime has changed significantly, with the introduction of the NPPF and revocation of PPS 23. Furthermore, a number of Local Authorities have developed their own guidance relating to air quality and development control. An update to the 2010 EPUK guidance is due to be published shortly. In April 2014, Planning Practice Guidance: Air Quality was published; this provides guiding principles on how planning can take account of the impact of new development on air quality.

2.3.3 Partnership working with Public Health

The Health & Social Care Act 2012 sets out the statutory requirement for Local Authority leadership of public health from April 2013. The introduction of this Act gave the County Council a duty to improve the health of its residents. The transfer of responsibility for significant areas of public health represents a unique opportunity to change the focus from treating sickness to actively promoting health and wellbeing. The Health and Wellbeing Strategy for Hertfordshire (2013-16) sets out the key priorities for the Health and Wellbeing Board (HWBB).

Hertfordshire's Public Health Strategy (2013-17) outlines the vision for public health as part of the vision for Hertfordshire and provides a clear road map for how the work of public health functions in Hertfordshire will ensure all residents will have *an 'opportunity to live as healthy lives as possible and to live safely in their communities'*, which the vision for Hertfordshire commits us all to achieving.

The Joint Strategic Needs Assessment (JSNA) for Hertfordshire (<http://jsna.hertsllis.org/>) provides an overview of the health of the County, as well as some in-depth analysis on health topics. The JSNA makes it clear that Hertfordshire faces a number of inter-connected public health challenges where improvements are required. Air quality features within Hertfordshire's JSNA.

Hertfordshire's public health system is made up of the following key working groups:

- The Health and Wellbeing Board
- The Public Health Board
- The Hertfordshire County Council Cabinet Panel on Public Health
- District and Borough mechanisms

The public health priorities for Hertfordshire (of which there are six) are about what needs to do within the County to achieve:

- The Marmot principles
- Better health outcomes for our residents
- National public health strategy
- Public Health England priorities

Hertfordshire's priorities will be tracked by its progress against the Public Health Outcomes Framework. The Public Health Outcomes Framework (PHOF) concentrates on two high-level outcomes to be achieved across the public health system, and groups further indicators into four 'domains' that cover the full spectrum of public health.

Outcome 1: Increased healthy life expectancy

Outcome 2: Reduced differences in life expectancy and healthy life expectancy between communities

Indicator 3.01 within the 'Health protection' domain relates to air quality, specifically fine particulate matter (PM_{2.5}).

Indicator 3.01:

Fraction of all-cause adult mortality attributable to long-term exposure to current levels of anthropogenic particulate air pollution

The rationale and policy behind this indicator are outlined as follows:

'Poor air quality is a significant public health issue. The burden of particulate air pollution in the UK in 2008 was estimated to be equivalent to nearly 29,000 deaths at typical ages and an associated loss of population life of 340,000 life years lost.

Inclusion of this indicator in the Public Health Outcomes Framework will enable Directors of Public Health to prioritise action on air quality in their local area to help reduce the health burden from air pollution.' (Public Health England, 2014)

Full details of the air quality indicator (including how it is calculated) can be found at <http://www.phoutcomes.info/public-health-outcomes-framework#qid/1000043/pat/6/ati/102/page/6/par/E12000004/are/E06000015>.

The PHOF indicators will be reported on to the Cabinet Panel for Public Health and Localism, the Public Health Board and the Health and Wellbeing Board.

2.3.4 Partnership working with other groups/organisations

Several discussion fora are available to officers for the management of local air quality, these include:

- The Hertfordshire and Bedfordshire Air Quality Network
- Dacorum Borough Council Environment Corporate Working Group
- Hertfordshire Sustainability Forum – *'Green our Herts'*

The Hertfordshire and Bedfordshire Air Quality Network is made up of air quality officers from each of the thirteen local authorities within Hertfordshire and Bedfordshire, together with officers from Hertfordshire County Council. Meetings are held quarterly, at which officers discuss air quality issues and participate in data and information exchange. Action planning is an essential part of the air quality management process, and relies on the collaboration of District/Borough and County Councils.

Dacorum Borough Council also has an Environment Corporate Working Group (ECWG) within which air quality issues are discussed; meetings are held on a monthly basis.

'Green our Herts' is the promotional group of the Hertfordshire Sustainability Forum. Made up of Local Authorities and non-profit environmental groups in Hertfordshire, it aims to

promote & provide information on a range of environmental issues relevant to Hertfordshire, including air quality.

3 Air Quality in Dacorum

This section provides a summary of the air quality monitoring currently undertaken by the Council. It also provides an overview of the Review and Assessment work undertaken to date relevant to the production of this Action Plan.

3.1 Air Quality Monitoring

Dacorum Borough Council currently has one automatic monitoring station in the Borough, in addition to 48 NO₂ diffusion tube monitoring sites. See **Table B.1** in **Appendix B** for NO₂ diffusion tube monitoring locations.

The automatic monitoring station, which has been operational since November 2012, is situated adjacent to a busy road (Northchurch High Street - A4251). Real time data is available from the Hertfordshire and Bedfordshire Air Quality Network website (www.hertsbedsair.net). The data is also included within the Hertfordshire and Bedfordshire Air Quality Network annual report produced by AQDM which is also available via the Hertfordshire and Bedfordshire Air Quality Network website. The location of the automatic monitoring station is shown in **Figures 3.1** below.

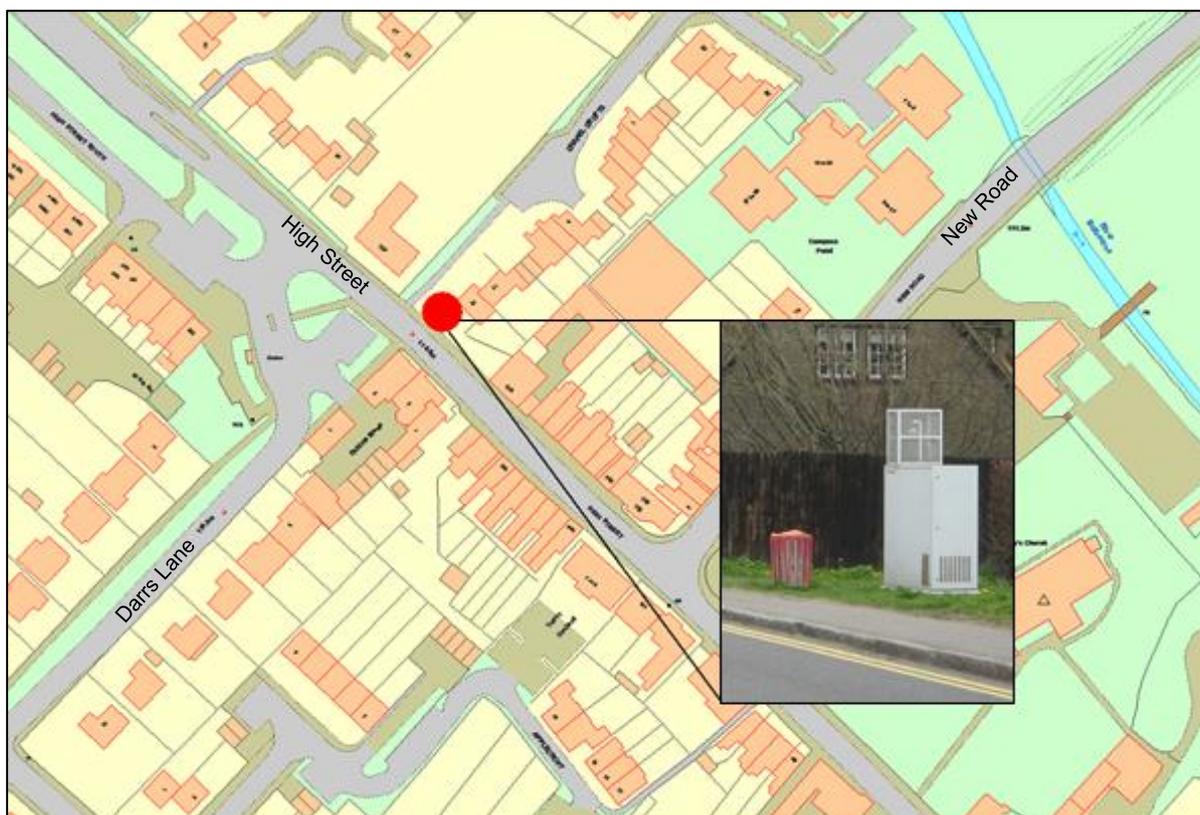


Figure 3.1 Location of Automatic Monitoring Station

3.2 Summary of relevant LAQM Review and Assessment

The Council designated three AQMAs in June 2012 as a result of exceedance of the air quality objective for annual mean NO₂ at the following locations within the Borough:

- AQMA 1: Lawn Lane, Hemel Hempstead
- AQMA 2: London Road, Apsley
- AQMA 3: High Street, Northchurch

Figures C.1, C.2 and C.3 in Appendix C show the extent of the AQMA boundaries as declared in June 2012.

Air Quality Consultants Ltd were commissioned by the Council to undertake the Further Assessment for the AQMAs in Hemel Hempstead, Apsley and Northchurch. The report, which was published in March 2013, indicated that the annual mean NO₂ objective continued to be exceeded within all three AQMAs. Within both the Lawn Lane, Hemel Hempstead and London Road, Apsley AQMAs there were no exceedances of the objective outside of the current AQMA boundaries, therefore it was considered that the current boundaries should remain in place. For the High Street, Northchurch AQMA, there was a modelled exceedance outside of the AQMA boundary. It was advised that the boundary of this AQMA be revised to potentially incorporate any other residential locations within the area predicted >36µg/m³. The boundary of this AQMA has since been amended to incorporate 84 – 96 High Street, Northchurch; this is shown in **Figure C.4 in Appendix C**.

Table 3.1 below indicates the total number of residential properties included within each of the three AQMAs. In reference to the High Street, Northchurch AQMA, this includes before and after the AQMA boundary change. **Tables C.1, C.2, C.3 and C.4 in Appendix C** provide a full list of residential property addresses located within the AQMA boundaries.

Table 3.1 Number of residential properties included within the three AQMAs

AQMA	No. of residential properties in AQMA
AQMA 1 Lawn Lane, Hemel Hempstead	47
AQMA 2 London Road, Apsley	66
AQMA 3 High Street, Northchurch (before change)	35
AQMA 3a High Street, Northchurch (after change)	42

3.3 Source Apportionment

Road traffic was identified as the dominant source of NO_x (NO+NO₂) in all three of the Council's AQMAs in the 2013 Further Assessment. Source apportionment studies identified that ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations within all three AQMAs, followed by emissions from cars and goods vehicles on local roads. Buses also contribute within AQMA 1 and 3.

The source apportionment study drew the following conclusions:

- Ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations within all three AQMAs (31.6 to 85.7 per cent);
- Cars contribute significantly to local NO₂ emissions within all three AQMAs (7.8 to 42 per cent);
- LGVs contribute to local NO₂ emissions in all three AQMAs albeit to a lesser extent than cars (3.1 to 21.4 per cent);
- HGVs also contribute to local NO₂ emissions in all three AQMAs albeit to a lesser extent than LGVs (1 to 10.8 per cent);
- Buses (PSVs) are estimated to make a relatively insignificant contribution to local NO₂ emissions (<0.1 per cent) in AQMA 2, but make greater contributions in AQMAs 1 (<9.4 per cent) and 3 (<6.2 per cent);
- Motorcycles are estimated to make a relatively insignificant contribution to local NO₂ emissions in any of the three AQMAs (<0.2% per cent).

Figures 3.2, 3.3 and 3.4 show the dominant sources of NO₂ emissions in the three AQMAs (taken from the 2013 Further Assessment). Diffusion tube locations are represented using their corresponding location identification codes (e.g. DC57 etc.). See 2013 Further Assessment report for modelled receptor locations. **Table B.1** in **Appendix B. Table 3.2** identifies the proposed focus of measures for the sources.

Table 3.2 Significant sources of NO₂ emissions in each AQMA

NO ₂ emission source	AQMA			Proposed focus of measures
	1	2	3	
Background	√	√	√	Coordinated action on a regional / national scale
Cars	√	√	√	Reduce car numbers in area (e.g. Green Travel Plans, behavioural measures, vehicle management)
LGVs	√	√	√	Improve freight quality and activity
HGVs	√	√	√	Not applicable
PSVs (Buses)	√		√	Not applicable
Motor Cycles				Not applicable

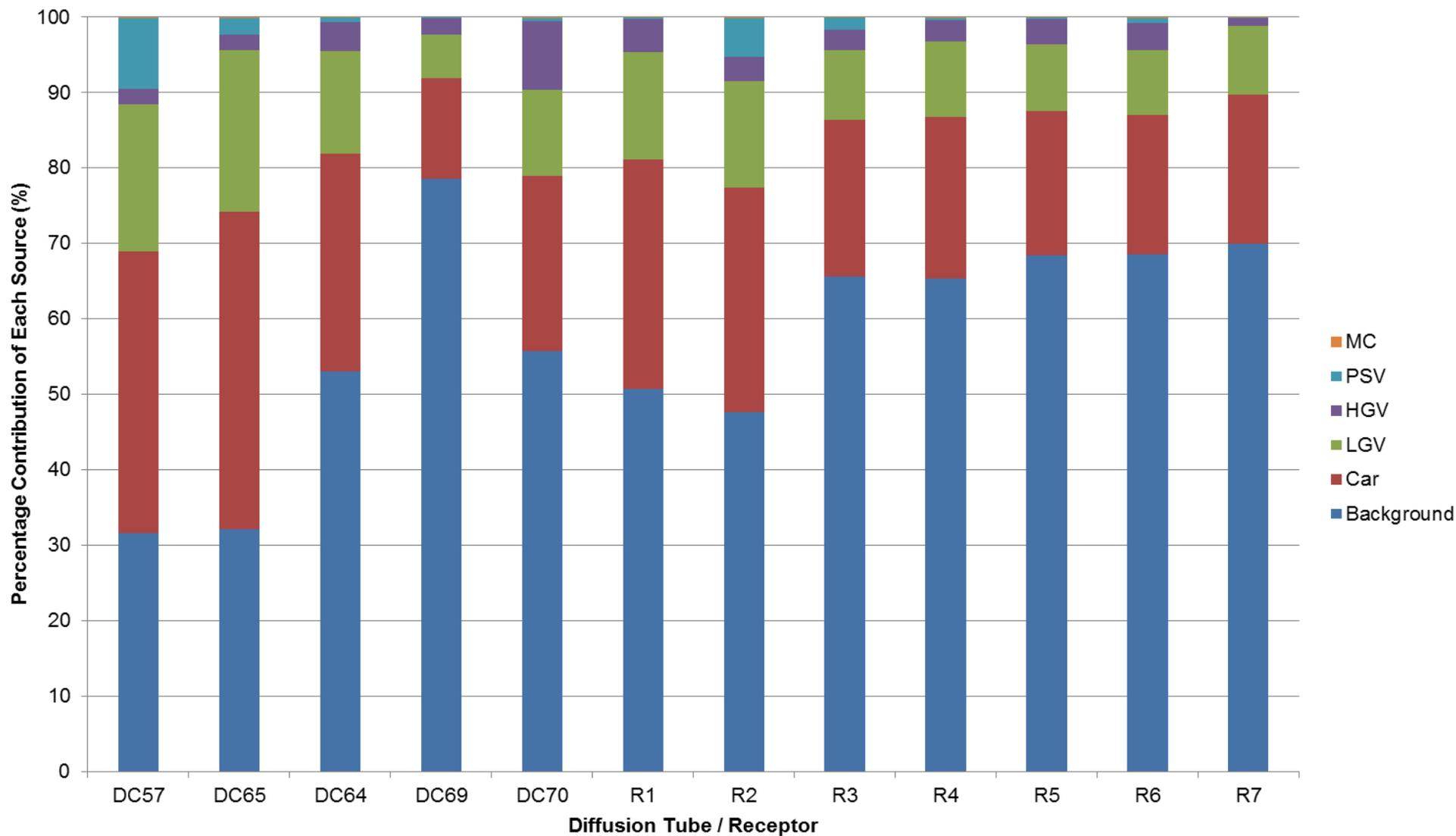


Fig 3.2 AQMA 1 - Percentage contributions of different sources to total predicted annual mean NO₂ concentrations in 2011

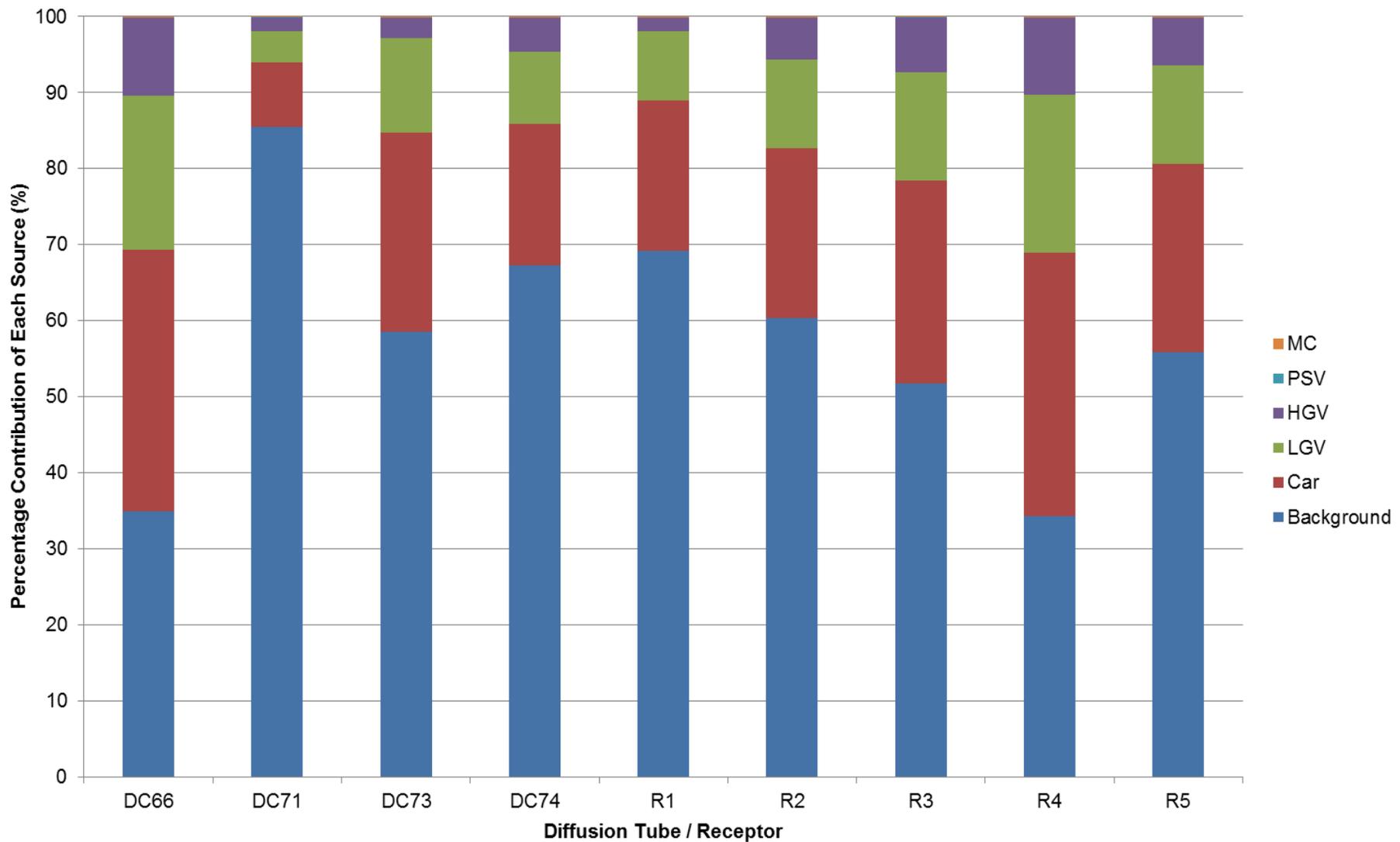


Fig 3.3 AQMA 2 - Percentage contributions of different sources to total predicted annual mean NO₂ concentrations in 2011

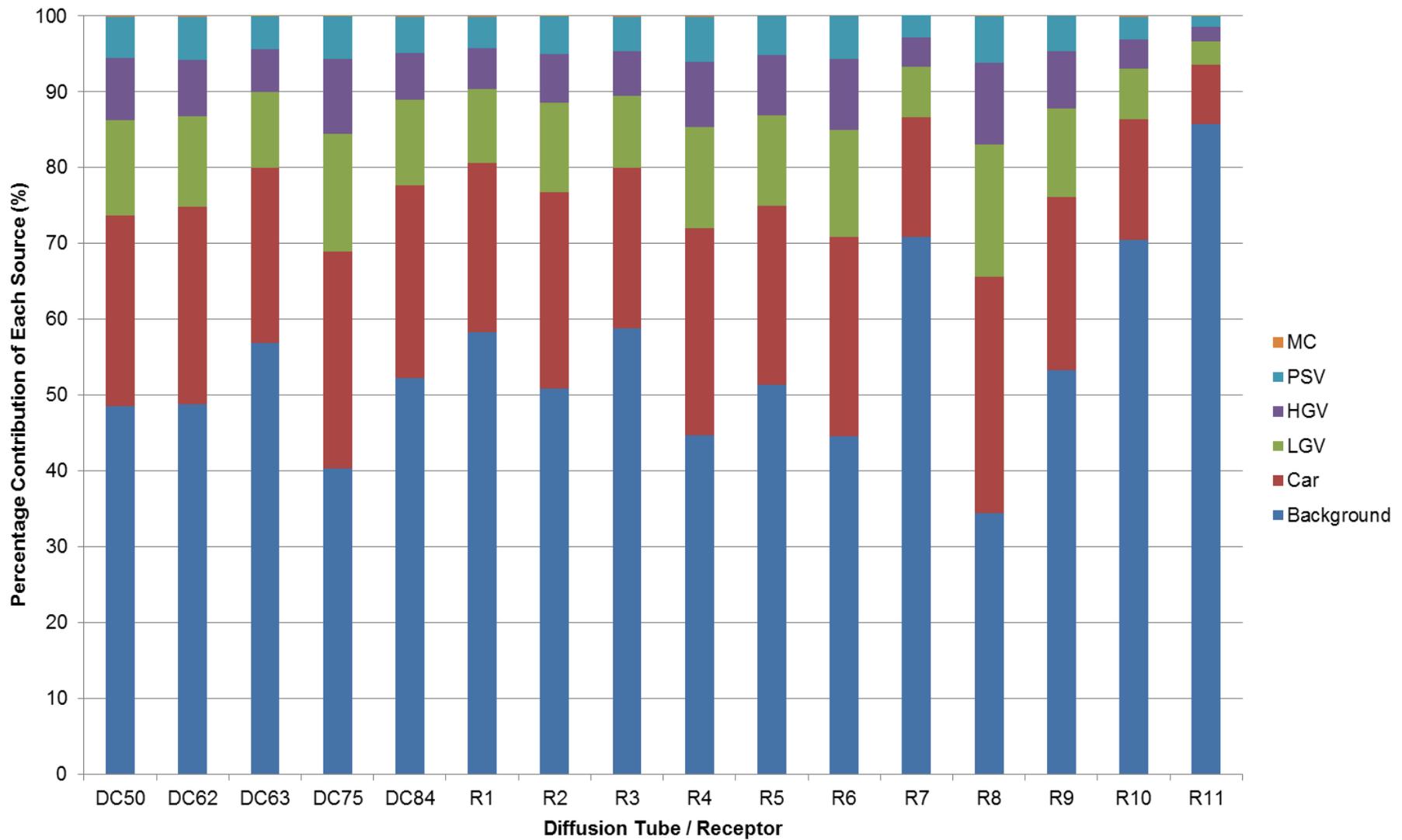


Fig 3.4 AQMA 3 - Percentage contributions of different sources to total predicted annual mean NO₂ concentrations in 2011

3.4 Scale and extent of the problem

Based on the source apportionment analysis, ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations in all three AQMAs, in terms of action; a coordinated approach on a regional/national scale would be required in attempt to bring about a reduction. Private cars are very important to local NO₂ emissions in all AQMAs so a reduction in these could also provide a benefit across the Borough. Goods vehicles contribute to NO₂ emissions in all AQMAs, albeit to a lesser degree than cars. Buses make a contribution to local NO₂ emissions in AQMA 1 and 3. **Table 3.3** indicates the degree of reduction necessary to meet the objectives.

Table 3.3: Degree of reduction necessary to meet the air quality objectives for AQMAs

AQMA	Location of highest measured or predicted annual mean NO ₂ concentration 2011	Highest measured or predicted annual mean NO ₂ concentration (µg/m ³) 2011	Reduction necessary (µg/m ³)
AQMA 1	DC57	62.2	22.2
AQMA 2	R4 (193 London Rd)	57.3	17.3
AQMA 3	R8 (84 – 96 London Rd)	47.3	7.3

3.5 Conclusions

The three AQMAs have a problem with local NO_x emissions causing levels of NO₂ to be above the health-based annual mean standard of 40µg/m³. Road transport in all of the AQMAs is the dominant local source of NO_x emissions. Therefore it is intended that this Action Plan will be integrated into the Hertfordshire Local Transport Plan (LTP).

Based on the source apportionment analysis, ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations, followed by emissions from cars and goods vehicles on local roads. Buses also contribute within AQMA 1 and 3.

Based on 2011 results, these measures would need to reduce annual mean concentrations by 22.2, 17.3 and 7.3µg/m³ in AQMAs 1, 2 and 3 respectively to achieve the air quality objective.

Although this Action Plan will focus on making progress towards achieving the annual mean objective for NO₂, it is recognised that the actions and measures will provide other benefits

for the borough and its surrounds, which are beyond the original scope of the Action Plan.

Such benefits include:

- Reduction of other transport-related pollutants (e.g. particulate matter, benzene etc.)
- Reduction in emission of greenhouse gases
- Reduced noise from traffic
- Reduced congestion
- Assist with climate change policies
- Health improvements

4 Development of the Action Plan

This section reports on how the Action Plan has been developed to date.

4.1 Formation of Action Planning Steering Group

The development of the Action Plan began with an initial meeting, which was attended by Borough and Council County Officers. The Action Plan has been influenced by their local knowledge and area of responsibility.

The Steering group comprised:

- Danielle Newnham, Scientific Officer, Dacorum Borough Council
- Tina Gigg, Assistant Engineer, Transport Policy & Growth Team, Hertfordshire County Council
- Andrew Freeman, Strategy and Programme Manager, Hertfordshire County Council

The steering group was formed to provide an appropriate forum for developing the Air Quality Action Plan. The steering group was initially restricted to the above members as it was recognised that the air quality issues within Dacorum were predominantly transport-related. Other relevant stakeholders were consulted during the drafting of the Action Plan as and when necessary.

As a statutory duty, the Council consulted widely on the draft Action Plan, which gave other stakeholders (including Members) the opportunity to influence the plan before it was finalised and formally adopted.

4.2 Initial Action Plan Options Assessment

A full range of relevant options to reduce emissions from traffic within each of the three AQMAs and the Borough in general have been considered by the steering group in the development of this AQAP.

These potential options (forty in total) were subdivided into the following seven categories:

- i. Strategic actions
- ii. Move receptors away from AQMA(s)
- iii. Move sources away from AQMA(s)
- iv. Optimising traffic flows through the AQMA(s)
- v. Reducing transport emissions

- vi. Promoting sustainable transport options
- vii. Other

For each of these options, an initial assessment was undertaken and a decision made as to whether to eliminate the option from further consideration at this time or to shortlist the option for further consideration. This decision was made with reference to:

- Comments received from the steering group
- Conclusions from the source apportionment exercise

The outcome of this initial assessment resulted in eighteen measures being eliminated from further consideration at this time, the justification for which is as follows. Some measures were not considered practicable or viable or were not believed to have an appropriately targeted impact on the predominant sources of emissions identified in the 2013 Further Assessment. In some cases, proposed measures were easily actionable free of charge, as such there was no need for the inclusion of a specific measure within the Plan (e.g. the reporting of smoky vehicles). Some measures could be combined with other more general overarching measures and so these were not required as stand-alone measures (e.g. fleet/fuel monitoring). Other measures were already covered by separate legislation (e.g. bonfires and industrial emissions) or currently being looked at/actioned at County-level (e.g. the reintroduction of AirAlert and bus quality partnerships). It is recognised that the AQAP is an evolving document, and the actions which have been eliminated from further consideration at this time, may become viable or more relevant in the future and could be introduced at a later date.

Traffic signal phasing and amendments to current road layouts represent potentially higher impact, direct measures. These two measures have however been put on-hold as they are dependent for their eventual form, impact and support/funding on the findings from planned investigations, reviews and studies yet to be undertaken.

The Council intends to develop the remaining twenty measures for inclusion within the AQAP. The findings of the initial assessment are presented in **Table D.1** in **Appendix D**.

5 Measures to improve air quality

The twenty measures within this AQAP are those that the steering group have selected for adoption and implementation in pursuit of the air quality standards within the three AQMAs and in order to improve air quality across the Borough as a whole. These measures have been grouped into 'Packages' where they have similar characteristics or are alternative options to achieve the same end. The Council does not necessarily have the power to implement them all directly but potentially it does have a role in attempting to influence those bodies or individuals who could implement them.

Measures are either:

- **Strategic** (i.e. aimed at integrating air quality into all relevant areas of decision making within the Borough and County Councils); or
- **Specific** (i.e. aimed at promoting more sustainable travel choices and reducing traffic related emissions within the three AQMAs and the Borough as a whole).

Four 'Package of Measures' have been recommended for implementation at this time:

- **Package of Measures 1: Reducing emissions via strategic measures**
- **Package of Measures 2: Optimising traffic flow through the AQMAs**
- **Package of Measures 3: Reducing transport emissions**
- **Package of Measures 4: Promoting sustainable transport options**

The measures in the Action Plan are detailed below and summarised in **Table 5.1**.

This Action Plan is:

- **Focused** – road transport is the dominant source of emissions in the AQMAs and ambient background levels are particularly significant sources.
- **Proportionate** – the plan puts most emphasis on reducing ambient background concentrations and emissions from cars and goods vehicles on local roads and contains specific measures to attempt to address these emissions.
- **Realistic** – the measures in the plan have been assessed as being the more feasible, acceptable and cost-effective among many options.
- **Strategic** – key measures to be implemented include improving the Council's capacity to manage air quality in order to avoid worsening air quality and to make progress towards the air quality standards.

5.1 Package of Measures 1: Reducing emissions via strategic means

Measure 1: Improve links with the Local Transport Plan

The air quality problem in Dacorum is predominantly a result of emissions from road vehicles, as is the case elsewhere in the UK. Consequently, the Local Transport Plan (LTP) constitutes a key mechanism for delivering initiative aimed at improving local air quality.

The Council will work closely with Hertfordshire County Council to ensure that this Action Plan and the associated measures to improve air quality within the three AQMAs and across the borough in general, are integrated into future versions of Hertfordshire's LTP.

Measure	Title
1	Improve links with the Local Transport Plan
Key Intervention	
Measures to ensure the current poor air quality in the three AQMAs is improved where possible and to avoid future problems are implemented via the Local Transport Plan	
Definition	Measure / Indicator
Future versions of the LTP to include: <ul style="list-style-type: none"> Reference to the three AQMAs and measures included in the Air Quality Action Plan. Integration of plan with the LTP. Develop action plan options that will be implemented via the Local Transport Plan 	Integration of AQAP into LTP. December 2016.
Responsibility	
Hertfordshire County Council and Dacorum Borough Council	

Measure 2: Improve links with the Local Planning and Development Framework

PM₁₀ and NO₂ emissions can arise during the construction and operational phases of new development, with the impacts influenced by the size and location of the development. The land-use planning system plays a central role in managing the environmental impacts of new development and contributes to the protection and long-term improvement of air quality. This is achieved by ensuring that new developments do not have a negative impact on local air quality, and that public exposure to air pollutants is reduced in areas which breach the air quality standards.

The Council requires an air quality impact assessment to be included with planning applications which have the potential to cause a negative impact on air quality, particularly in cases where an increase in transport emissions may arise, or where new residents could be exposed to poor air quality. Historically, air quality impact assessments have been carried out to determine the influence of additional traffic generation on air quality. With the increasing requirement for major development sites to adopt low carbon and decentralised energy sources, air quality assessment will be required for combined heat and power plants (CHP) and biomass boilers. Applicants will additionally be required to take into account the cumulative impacts of emissions on local air quality. Where an air quality assessment shows that a new development is likely to have a negative impact on air quality, or expose new residents to poor air quality, the applicant will be required to submit an air quality mitigation plan.

The Council also requires developers to control and monitor dust emissions at large construction sites in accordance with best practise measures.

The Council will continue to use planning conditions and legal obligations to help mitigate impacts on air quality associated with transport, energy use and construction practices at new developments. Planning conditions can require developers to adopt measures which will reduce transport emissions, such as requesting travel and business plans, installing electric vehicle recharging infrastructure and contributing to sustainable transport.

Air quality is a material planning consideration and contained within Dacorum Borough Council's Core Strategy, which was published on 25 September 2013. It is proposed to produce either a Supplementary Planning Document or Technical Guidance on air quality in conjunction with members of the Hertfordshire and Bedfordshire Air Quality Network. This will help planners and developers to understand the air quality impact of any proposed development and provide consistency in the regulatory approach across Hertfordshire and Bedfordshire. The document will seek to ensure that developments are well served by public transport, pedestrian and cycle facilities in order to promote sustainable travel. It is intended that this will enable the Council to secure appropriate developer contributions and ensure resources are targeted towards schemes that promote long term sustainable travel.

Measure	Title
2	Improve links with the Local Planning and Development Framework
Key Intervention	
Local planning considerations aim to mitigate the cumulative negative air quality impacts of new development	
Definition	Measure / Indicator
Require developers to undertake an air quality assessment in circumstances where a new development could have a negative impact on air quality, and provide an air pollution mitigation plan where necessary.	No. of planning applications assessed and regulated through air quality assessments. Report annually.
Require developers to submit Construction Management Plans to control dust and emissions from construction and demolition. Through onsite pollutant monitoring, ensure that large developments are adhering to the CMP requirements.	No. of Construction Management Plans and monitoring requirements included for relevant developments. Report annually.
Continue to use planning conditions and legal obligations to require developers to adopt measures which will reduce transport emissions, such as requesting travel and business plans, capping parking spaces, providing cycle parking facilities and installing electric vehicle recharging infrastructure.	No. of sites with: <ul style="list-style-type: none"> • Travel Plans • Reduced parking • Cycle parking facilities • EV charging points Report annually.
Produce Supplementary Planning Document / Technical Guidance for Hertfordshire and Bedfordshire.	Guidance published and followed. December 2015.
Responsibility	
Dacorum Borough Council: Regulatory Services, Strategic Planning and Regeneration, Development Control.	

Measure 3: Improve links with Public Health

Poor air quality has been recognised as a significant public health issue. The Public Health Outcomes Framework contains an indicator specific to PM_{2.5}. The Council will seek opportunities to strengthen the link between Public Health and air quality through joint working and policy development with Public Health in Hertfordshire. It is proposed to create an Air Quality Strategy for Hertfordshire. The Council, in collaboration with the other nine local authorities across the County, will also seek Public Health funding opportunities for potential air quality-related projects in Hertfordshire, such as the reintroduction of 'AirAlert' and County-wide PM_{2.5} monitoring.

Measure	Title	
3	Improve links with Public Health	
Key Intervention		
Strengthen the link between Public Health and air quality		
Definition	Measure / Indicator	
Seek opportunities to strengthen the link between Public Health and air quality through joint working and policy development with Public Health in Hertfordshire.	Policies, relationships and processes in place to ensure air quality considered wherever relevant. Creation of Hertfordshire Air Quality Strategy. December 2015.	
Seek Public Health funding opportunities for potential air quality-related projects in Hertfordshire, such as the reintroduction of 'AirAlert', the creation of a Hertfordshire Air Quality Strategy and County-wide PM _{2.5} monitoring.	No. of successful funding bids. Bid/s to be identified by December 2015.	
Responsibility		
Hertfordshire County Council, Dacorum Borough Council (and other Local Authorities across County).		

5.2 Package of Measures 2: Optimising traffic flow through the AQMAs

It is recognised that traffic flow through the AQMAs could be significantly improved. In order to bring about improvements, (whether it be through the redesign of the current road layout or traffic light phasing alterations etc.), it is essential that the traffic movements/flow and associated issues within each area are fully understood; this is to be achieved through Initial investigations. The findings of these investigations will be used to inform the development of a business case or a funding application for highway infrastructure improvements.

Measure 4: Junction Investigations

Traffic signals operate at the cross roads where Durrants Hill Road and Deaconsfield Road intersect with Lawn Lane. This junction is situated within the north-western corner of the Lawn Lane, Hemel Hempstead AQMA. At peak times, these traffic signals can result in long tailbacks at this junction, and particularly through the Lawn Lane AQMA. Residential dwellings near this junction (within the Lawn Lane AQMA) are situated particularly close to the road, creating a 'street canyon' effect. Pollution deposition is evident on these building frontages.

Durrants Hill Road links Lawn Lane (in the northeast) to London Road (in the southwest). The Durrants Hill Road/London Road junction is situated within the London Road, Apsley AQMA. It has been observed that vehicles waiting for an opportunity to turn from London Road into Durrants Hill Road (and vice versa) can cause long tailbacks during peak times. The situation is exacerbated as a narrow, single track, signal-controlled bridge is situated on Durrants Hill Road, approximately 80 metres northeast of the junction with London Road; the resultant traffic queues often back up along Durrants Hill Road to the junction with London Road preventing other vehicles from turning onto Durrants Hill Road, which in turn creates further stationary traffic tailbacks along London Road.

The Orchard Street/London Road junction has recently been redesigned. The traffic flow on Orchard Street is now one-way and the junction is signal controlled. This junction is frequently blocked by queuing traffic on London Road, preventing vehicles emerging from Orchard Street turning onto London Road.

Traffic enters and exits London Road, Apsley to the west at the junction with Two Waters Way. This is a large signal controlled junction.

It is proposed to investigate the efficiency of the current junction layouts and traffic signal controls, at key junctions within the Lawn Lane, Hemel Hempstead and London Road, Apsley AQMAs, with the view to using the findings to inform the development of a business case or a funding application for highway infrastructure improvements to improve traffic flow within these AQMAs.

Measure	Title
4	Junction investigations
Key Intervention	
To obtain information to enable junction layouts and traffic signal phasing to be altered to improve traffic flow within AQMAs.	
Definition	Measure / Indicator
Investigate efficiency of the current junction layouts (including the operation of traffic signals if relevant) at the following junctions: <ul style="list-style-type: none"> • Durrants Hill Road/Lawn Lane • Durrants Hill Road/London Road • Orchard Street/London Road • Two Waters Way/London Road 	Undertake junction investigations. April 2016.

Responsibility	
Hertfordshire County Council - Highways	

Measure 5: ANPR traffic study

It is proposed to utilise Automatic Number Plate Recognition (ANPR) technology to determine the origin, destination and residence time of individual vehicles travelling through the London Road, Apsley AQMA. This information can be used to fully characterise the traffic flow (e.g. determine the proportion of traffic using London Road as a thoroughfare etc.) ANPR can also be used to obtain detailed information as to the number of private cars, buses, taxis, good vehicles etc. travelling along London Road, which will supplement the existing source apportionment data. The issue of data protection has been considered; data obtained will only be used for the purpose of this investigation and securely disposed of. The findings of the ANPR study will allow future actions to be appropriately targeted and will again provide the basis of a business case or funding application.

Measure	Title
5	ANPR traffic study
Key Intervention	
Obtain detailed traffic movement data in order to improve air quality within the London Road, Apsley AQMA	
Definition	Measure / Indicator
Determine the origin, destination and residence time of local traffic travelling through the London Road, Apsley AQMA through the use of Automatic Number Plate Recognition (ANPR) technology.	Undertake ANPR traffic study April 2016.
Responsibility	
Hertfordshire County Council – Highways and Dacorum Borough Council	

Measure 6: Congestion study

Congestion is a significant problem particularly within the London Road, Apsley AQMA. The Council will investigate whether a congestion study has already been undertaken for the London Road, Apsley area. If not, then such a study will be commissioned. The Hertfordshire County Council Congestion Action Plan will be checked for any schemes in the area of the AQMAs. The findings of the congestion study will be used to inform the development of a

business case or a funding application for highway infrastructure improvements to reduce congestion and improve traffic flow within the London Road, Apsley AQMA.

Measure	Title	
6	Congestion study	
Key Intervention		
Obtain available congestion study data in order to target future measures to improve air quality within the AQMAs.		
Definition		Measure / Indicator
Investigate whether a congestion study has already been done for the London Road, Apsley area.		Undertaken investigation specific to London Road, Apsley area. December 2015.
Check the Hertfordshire County Council Congestion Action Plan for any schemes in the area of the AQMAs.		Undertake review of Hertfordshire's Congestion Action Plan. December 2015.
Responsibility		
Hertfordshire County Council – Policy Team		

Measure 7: Road signage and satellite navigation alterations

It appears that the current road signage at the Two Waters Way junction is directing traffic bound for Abbots Langley and Kings Langley through the London Road, Apsley AQMA. Should this traffic be directed via the A41 bypass this would reduce the unnecessary through-traffic bound for Abbots Langley and Kings Langley. Similarly, traffic emerging from Orchard Street onto London Road must now turn right along London Road, and travel through the AQMA.

In relation to traffic travelling on the A41 bypass bound for Berkhamsted; the current road signage appears to be directing traffic to Berkhamsted from the north through the High Street, Northchurch AQMA. This is again causing unnecessary through-traffic.

It is proposed to investigate the current road signage within the vicinity of the three AQMAs, to identify opportunities for preventing unnecessary AQMA through-traffic by means of road signage alterations.

In addition, visitors to the borough will not be familiar with the local road network and as a result will often rely on satellite navigation systems. The possibility of getting satellite

navigation routes altered to avoid unnecessary travel through the three AQMAs will be investigated.

Measure	Title	
7	Road signage and satellite navigation alterations	
Key Intervention		
Determine the significance of the current road signage and satellite navigation routes on AQMA through-traffic		
Definition		Measure / Indicator
Investigate the current road signage within the vicinity of the three AQMAs, to identify opportunities for improvement, with the aim of preventing unnecessary through-traffic passing through the three AQMAs.		Undertake road signage investigation. April 2016.
Investigate the possibility of altering satellite navigation routes to avoid AQMAs where possible.		Undertake investigation into satellite navigation rerouting. April 2016.
Responsibility		
Hertfordshire County Council – Highways and Dacorum Borough Council		

Measure 8: Potential relocation of bus stops

A bus stop is present within the High Street, Northchurch AQMA. It has been observed that stationary buses waiting at this stop cause traffic tailbacks within the AQMA.

Similarly, the recently constructed road layout on Featherbed Lane/London Road Apsley junction has situated the bus stop adjacent to a central pedestrian crossing island. It has been observed that the presence of this central island prevents traffic from passing stationary buses waiting at this stop causing traffic tailbacks along London Road.

An on-street bus stop is also present within the Lawn Lane, Hemel Hempstead AQMA.

It is proposed to investigate the significance of stationary buses on congestions within the AQMAs and the possibility of relocating these bus stops, or the creation of a layby should the investigation deem this to be necessary.

Measure	Title
8	Potential relocation of bus stops
Key Intervention	
Determine significance of stationary buses on congestion within the AQMAs.	
Definition	Measure / Indicator
Establish the bus routes utilising this bus stops and the frequencies of buses along those routes and explore the possibly of relocating the bus stops or the creation of a layby	Undertake bus stop investigation. December 2015.
Responsibility	
Hertfordshire County Council – Passenger Transport	

Measure 9: Determine significance of school traffic

St Mary's C of E (VA) Primary School is situated on New Road, Northchurch, just outside of the High Street, Northchurch AQMA boundary. In order to determine the significance of school traffic on this AQMA, it is proposed to look at air quality monitoring data from the automatic monitoring station on the High Street, to see if there are any significant changes to NO₂ concentrations between term time and school holidays. This will provide valuable information to enable future measures to be appropriately targeted.

Measure	Title
9	Determine significance of school traffic
Key Intervention	
Determine the significance of school traffic within the High Street, Northchurch AQMA to target future measures	
Definition	Measure / Indicator
Look at air quality monitoring data from the automatic monitoring station to see if there are any significant changes to NO ₂ concentrations between term time and school holidays.	Undertake review of automatic monitoring station data. December 2015.
Responsibility	
Dacorum Borough Council – Regulatory Services	

Measure 10: Potential relocation of on-street parking

The lack of parking provision within Northchurch is recognised. Approximately five on-street visitor parking bays are currently provided for residents on High Street, Northchurch, these are situated within the centre of the AQMA. It has been observed that vehicles parked within these bays are obstructing through-traffic and therefore creating tailbacks within the High

Street, Northchurch AQMA. It is proposed to investigate this issue and the possibility of providing alternative parking outside of the AQMA should the findings of the investigation deem this to be necessary, to prevent such tailbacks. It has been highlighted that the presence of on-street parking currently acts to slow vehicles travelling through the High Street. The Council recognises that road safety (and in particular, speeding) is of great concern to the residents of Northchurch. The Council will work with Hertfordshire County Council to ensure that any measures implemented to improve air quality will not compromise road safety.

Measure	Title
10	Potential relocation of on-street parking
Key Intervention	
Determine significance of on-street parking on congestion within the High Street, Northchurch AQMA	
Definition	Measure / Indicator
Investigate the provision of on-street parking to determine its contribution to congestion within the AQMA and explore possibilities for relocation outside of the AQMA.	Undertake on-street parking investigation. April 2016.
Responsibility	
Hertfordshire County Council – Highways and Dacorum Borough Council	

5.3 Package of Measures 3: Reducing transport emissions

This can be achieved in a variety of ways, e.g. by technical means, promotion of alternative fuels and low/zero emission vehicles, reducing the volume of traffic, incentives, car sharing schemes etc.

Measure 11: Promote the use of electric vehicles (EV)

It is recognised that EV could offer solutions to air quality issues; as such, the Council, in partnership with Hertfordshire County Council, intends to promote and encourage the uptake and use of electric (plug in and hybrid) vehicles. The personal and business benefits of EVs will be communicated. Government grants are available for individuals and businesses towards the cost of each new electric (plug-in) car or van purchased, (subject to certain conditions). Grants are available for 25 per cent off the cost of a car, up to a maximum of £5,000 and 20 per cent off the cost of a van up to a maximum of £8,000. Funding is also available for the installation of EV charge points. People who own or lease EVs are also eligible for certain tax exemptions/reductions.

In addition to the current central government incentives, the Council will explore the possibility of providing incentives locally, such as the waiving of car park charges and priority parking bays for electric (plug in and hybrid) vehicles throughout the borough.

Hertfordshire County Council has received funding from the government's 'Plugged in Places' grant to install electric car charging points in the county, in partnership with Source East. There are currently five EV charge points in the Borough, (each dual charge points) that are part of Source East, these are located at:

- Maylands Business Centre, Hemel Hempstead
- Durrants Hill, Apsley
- The Forge, Tring
- Wood Lane End, Maylands, Hemel Hempstead
- Canal Fields, Berkhamsted

It is recognised that these charge points are currently under used and more needs to be done to increase usage.

Further monies have been made available for the installation of additional EV charge points within St Albans, Watford and Hemel Hempstead through Hertfordshire's successful LSTF bid. The Council will continue to explore further opportunities for funding to install additional EV charge points within the borough to supplement the existing charging infrastructure.

The Council intends to submit a bid for government funding at the next available opportunity. Should the bid be successful, the Council intends to replace some of its existing fleet with electric vehicles and install EV charge points at Council-owned building throughout the borough. The use of electric vehicles has been piloted by a neighbouring local authority, and significant cost and associated environmental benefits have been identified. The Council is also intending to promote and encourage the uptake of electric (plug in and hybrid) vehicles by staff via the Council's lease car and loan schemes.

The Council recognises that there are barriers preventing the successful uptake of EV, for example range anxiety and environmental issues relating to the recycling of batteries. Experience of other areas has identified a number of key issues in the creation of an effective and joined-up Public Charging Infrastructure (PCI), such as: availability and network coverage; interoperability between networks; attention to siting and design at 'street-level'.

Real-world constraints include: installation costs, availability of hosts, regulatory procedures, adjacent land-uses, implications for grid-load.

The Council recognises that it will be difficult to influence and bring about changes locally and maybe more needs to be done at central government level, in addition to the current grants available, to increase uptake of electric vehicles, (e.g. similar to the previous scrappage scheme).

The Council will encourage more electric vehicle charging points in new developments in order to increase the mass-market appeal of electric vehicles.

The Maylands EV Car Club has recently been launched with funding from the successful LSTF bid under the 'Maylands on the Move' umbrella. Two EV cars (zero emission point of use) are available for hourly hire by individuals and companies on the Maylands Business Park. Usage and membership is presently low, however the scheme is currently being heavily promoted.

In November 2014, the UK's first entirely electric pay-per-use car club, E-Car Club, launched a car club service in the neighbouring borough of Watford in partnership with Watford Borough Council. Two zero-emission E-Car Club cars now complement Watford Borough Council's vehicle fleet. The cars are available to local businesses and residents. Members are able to hire an E-Car for £5.50 (including VAT) an hour or £45 per day which includes insurance, unlimited mileage and 24/7 customer support. Members can book a vehicle by phone, online or on a smart phone and an E-Car can be reserved for as little as an hour or as long as several days. The Council will investigate the possibility of adopting a similar scheme for Dacorum with the associated provision of dedicated parking bays for E-Car Club vehicles throughout the borough.

Measure	Title
11	Promote the use of electric vehicles (EV)
Key Intervention	
Encourage the uptake and use of electric vehicles	
Definition	Measure / Indicator
Communicate the benefits of EVs to residents and businesses. Publicise central government grants and tax incentives available.	No. of EV enquiries. Report annually.
Explore the possibility of providing local incentives, such	Undertake sufficient research to conclude

as the waiving of car park charges or priority parking for electric (plug in and hybrid) vehicles throughout the borough.	whether incentives are viable. April 2016.
Promote the presence and availability of existing EV charge points within the borough.	Percentage increase in usage of existing Source East charge points. Report annually.
Explore funding opportunities for additional EV charge points within the borough. Aim to secure central government funding for replacing a proportion of the existing Council fleet with EV and install EV charge points at Council-owned buildings.	No. of successful funding applications. Report annually.
Promote and encourage the uptake of electric (plug in and hybrid) vehicles by staff via the Council's lease car and loan schemes.	No. of staff leasing or purchasing electric (plug in and hybrid) vehicles. Report annually.
Encourage the installation of EV charging points in new developments.	No. of new developments with EV charge points. Report annually.
Promotion of the Maylands EV car club.	No. of new EV car club members and percentage increase in usage. Ongoing. Report annually.
Investigate possibility of E-Car Club for Council Staff and residents in Dacorum.	Undertake sufficient research to conclude if viable.
Responsibility	
Hertfordshire County Council and Dacorum Borough Council	

Measure 12: Promote car share schemes

The encouragement of travellers to plan their journey and share transport, when possible is likely to lead to fewer vehicle trips and, therefore, lower emissions. *'If half of UK motorists received a lift one day a week, pollution would be reduced by ten per cent and traffic jams by twenty per cent.'* (Liftshare.com, 2014). Car sharing and travel planning are therefore important measures to improve air quality.

Lift share schemes are currently in operation within the borough and also countywide; specifically Herts Liftshare (www.hertsliftshare.org), a county wide service, and the Maylands Car Share Scheme, which has been set up using LSTF funding, providing a car share service to employees on the Maylands Industrial Estate. To date the Maylands Car Share Scheme has approximately seventy registered members. These services are free to use.

Currently a variety of incentives are offered to participants, such as designated parking bays for high occupancy vehicles and reduced parking charges.

The Council (in partnership with Hertfordshire County Council) will aim to promote these schemes with the intention to increase uptake further. The possibility of providing dedicated parking bays/priority parking for car share members throughout the borough will also be explored as will the possible reintroduction of the Dacorum Borough Council car share scheme, which disbanded several years ago.

Measure	Title
12	Promote car share schemes
Key Intervention	
Increase awareness and uptake of existing car share schemes	
Definition	Measure / Indicator
Promote existing car share schemes 'Herts Liftshare' and 'Maylands Car Share Scheme'.	Increase in no. of registered members. Report annually.
Explore the possibility of providing dedicated parking bays/priority parking throughout the borough for car share members.	Undertake sufficient research to conclude whether dedicated parking bays / priority parking for car share members is viable. December 2016.
Explore the possibility of reintroducing the Dacorum Borough Council car share scheme.	Undertake sufficient research to determine whether reintroduction would be welcomed by staff. December 2015.
Responsibility	
Hertfordshire County Council and Dacorum Borough Council.	

Measure 13: Green incentives for taxi drivers

Taxis do considerable local mileage and consequently add to air pollution within the borough. There is therefore good reason to encourage taxi companies and drivers to use newer or cleaner (e.g. electric) vehicles.

The Council sets licence fees annually on a strict cost-recovery basis. Case law prohibits Councils from cross subsidising or making a surplus on fees charged for their licensing functions. The Council will investigate the possibility of offering a subsidy to taxi companies and drivers who licence newer or cleaner (e.g. electric) vehicles, thus reducing the licence fee paid to below cost-recovery levels, subject to the procurement of funding to cover the shortfall between subsidised licence fees and the Council's costs.

Measure	Title
13	Green incentives for taxi drivers
Key Intervention	
Encourage Taxi companies / drivers to use less polluting vehicles	
Definition	Measure / Indicator
Explore the possibility of offering a subsidy to taxi companies and drivers who licence newer or cleaner (e.g. electric) vehicles.	Discuss with DBC Licensing to determine viability and possible implementation. December 2016.
Responsibility	
Dacorum Borough Council – Regulatory Services and Legal Governance	

Measure 14: Reducing emissions from goods vehicles within the AQMAs

The source apportionment analysis has indicated that goods vehicles (LGVs and HGVs) contribute to NOx emissions in all three AQMAs, albeit to a lesser degree than cars. The Council will explore the options available to minimise the emissions from LGVs and HGVs (e.g. formation of a local freight quality agreement to promote cleaner vehicles and smarter driving to local freight companies, limiting delivery times to outside of peak traffic times etc.) A number of businesses are located within the London Road, Apsley AQMA, there is also a café within the High Street, Northchurch AQMA; therefore delivery time restrictions will be best targeted to these two AQMAs. The Council will look at ways to reduce the volume of freight traffic passing through the AQMAs, where possible encouraging the use of the A41.

Measure	Title
14	Reducing emissions from goods vehicles within the AQMAs
Key Intervention	
Target reduced emissions from LGVs and HGVs operating with the three AQMAs	
Definition	Measure / Indicator
Liaise with local freight companies to establish the potential for developing a local freight quality agreement.	Initiate meeting with local freight companies and report outcomes. December 2017.
Liaise with businesses within the London Road, Apsley and High Street, Northchurch AQMAs to establish the potential for altering delivery times.	Initiate meeting with local businesses and report outcomes. December 2017.
Investigate ways to reduce the volume of freight traffic passing through the AQMAs.	Undertake investigation. December 2015.
Responsibility	
Dacorum Borough Council – Regulatory Services	

Measure 15: Reducing emissions from Council fleet

The Council recognises that it should lead by example and target reductions in emissions from its transport fleet activities as much as practicable. The Council already has in place policies and programmes aimed at improving energy efficiency of the Council fleet and reducing pollution contributions. Although significant efforts are already being made, (as detailed below), the Council recognises that there are opportunities available for further improvements, particularly in the area of electric (plug in and hybrid) vehicles. The Council is currently developing its Sustainable Transport Policy.

The Council undertakes an evaluation process, taking into consideration fuel consumption figures and CO₂ emissions when procuring new vehicles for the Council fleet. Wherever practicable, the Council aims to procure vehicles meeting the new emissions limits established in the EU Directives. The Council is currently in the process of replacing its fleet of refuse collection vehicles, with twenty two new vehicles. All vehicles are to be Euro VI standard and, together with AdBlue technology, will give rise to significantly lower emissions.

Road sweepers and refuse vehicles tend to go out early in the morning to avoid rush hour; this avoids contribution towards congestion or exacerbation of the air quality problems in the borough. The refuse vehicles also have route optimisation software installed to plan their route and a Bartec system that enables operatives to identify where vehicles are via GPS; so should it be necessary to send a vehicle back for a missed collection the additional mileage can be minimised by using the vehicle in closest proximity.

The Council's lease car scheme currently has a cap on CO₂ emissions of 125g/km, (possibly being reduced to 120g/km in 2014/15). The Council's car loan also has a CO₂ emissions limit of 125g/km.

Fleet/fuel monitoring of Council vehicles is already undertaken by the Council for the purpose of expenditure monitoring and as part of the data required for preparation of the statutory Green House Gas Report. Additionally, the Council's Environmental Management System contains a performance indicator requiring the Council to reduce the fuel consumption of its fleet by 5 per cent (per annum).

The number of business miles undertaken by staff can be monitored through Council travel expenses claims. This information could be used to enable the Council to identify opportunities for additional fuel usage reduction across the Council's services.

Business mileage rates claimed by Council employees are currently determined to some extent by engine size (e.g. those employees with a large engine vehicle are entitled to claim a higher rate per mile than those with smaller engine vehicles). It is recognised that this does not promote the use of smaller engines, as such; the Council will look into the possibility of amending this.

It is noted that the Council does not currently have a Corporate Travel Plan; the creation of such a document will be strongly encouraged.

Subject to a successful funding bid, the Council intends to replace a proportion of its existing fleet with electric vehicles and install EV charge points at Council-owned building throughout the borough. The use of electric vehicles has been piloted by a neighbouring local authority, and significant cost and associated environmental benefits have been identified.

The Council is also intending to promote and encourage the uptake of electric (plug in and hybrid) vehicles by staff via the Council's lease car and loan schemes.

Measure	Title
15	Reducing emissions from Council fleet
Key Intervention	
Target reduced emissions from Council fleet vehicles	
Definition	Measure / Indicator
Continue to target reductions in emissions from the Council's transport fleet.	EMS performance indicator for annual fuel usage reduction. Report annually and ongoing.
Continue to consider fuel consumption figures and CO ₂ emissions during the procurement process.	No. of vehicles purchased / leased. December 2015.
Utilise business mileage data and trends to identify opportunities for fuel usage reduction across Council services.	Establish opportunities for fuel usage reductions and report outcomes. April 2015 and ongoing.
Explore the possibility of amending current business mileage rates to remove financial benefits in relation to engine size.	Discuss with relevant Council departments to assess viability. December 2017.
Support the adoption and implementation of a corporate travel plan for the Council.	Creation and adoption of a corporate travel plan. December 2016.

Replace proportion of existing Council fleet with EV and install EV charge points at Council-owned buildings. Subject to successful funding application.	Successful bid outcome. December 2015.
Promote and encourage the uptake of electric (plug in and hybrid) vehicles by staff via the Council's lease car and loan schemes.	No. of staff leasing or purchasing electric (plug in and hybrid) vehicles. Report annually.
Responsibility	
Dacorum Borough Council – Regulatory Services, Finance, Procurement and Fleet Manager.	

Measure 16: Encouraging smarter driving

Encouraging people to drive and operate their vehicles more efficiently, results in reduced fuel consumption and reductions in exhaust emissions. This is achieved by improving driving skills (smoother driving, less harsh breaking and smoother acceleration) and undertaking regular vehicle servicing (checking tyres, fuel filters and engine tuning) as well as carrying out journey planning. These measures are referred to as 'Smarter Driving'. Other measures include: allowing engines to warm up before setting off, minimising the use of air conditioning and reducing the weight of the vehicle (e.g. removing roof racks and unnecessary items in the car boot).

Many new vehicles are now equipped with stop-start technology, whereby the engine automatically shuts down and restarts to reduce the amount of time the engine spends idling, thereby reducing fuel consumption and emissions. Drivers of older vehicles should be encouraged to switch off their engines when in stationary traffic; countdown timers on traffic signals would be advantageous. Furthermore, drivers should be encouraged to allow stationary vehicles waiting to turn right into side roads to cross, as these stationary vehicles cause tailbacks and congestion.

Smarter driving has the potential to reduce fuel consumption, reduce air pollution and save money on fuel costs. The Council intends to promote smarter driving through awareness raising initiatives (e.g. production of posters and leaflets and erection of road signage) to encourage residents and businesses (including the Council itself) to adopt smarter driving methods. The Council will investigate the possibility of providing/obtaining smarter driver training for its employees.

Measure	Title
16	Encouraging smarter driving
Key Intervention	
Raise awareness of the benefits of smarter driving techniques	
Definition	Measure / Indicator
Undertake awareness raising to encourage residents and businesses to adopt smarter driving methods.	Incorporating messages into relevant communication channels and campaigns. December 2016.
Explore the possibility of providing/obtaining smarter driving training for Council employees	Undertake sufficient research to determine whether the possibility of providing / obtaining training is viable. December 2016.
Responsibility	
Dacorum Borough Council – Regulatory Services	

5.4 Package of Measures 4: Promoting sustainable transport options

‘Of all trips made in 2013, 18 per cent were less than one mile in length...’ (Department for Transport, 2014). It is therefore important to consider the promotion of sustainable transport options (walking and cycling), public transport uptake and travel planning within the borough and Hertfordshire in general. Measures to discourage car use, encourage active travel (cycling and walking) and increase the uptake of public transport, especially for local journeys are important to reduce emissions and hence improve air quality.

Measure 17: Promote travel planning

A Travel Plan (sometimes referred to as a green travel plan) is a package of measures designed to influence the travel behaviour of individuals, businesses, schools or other organisations through promoting sustainable travel. The general aim is to reduce the negative effects of traffic by encouraging alternatives to single-occupancy car-use.

The Council and Hertfordshire County Council are working with businesses, schools, developers and individuals by promoting sustainable travel through travel planning. The Council has recently been engaging with businesses on the Maylands Industrial Estate and assisting in the creation of travel plans for these companies. The appointment of a dedicated support officer for the Maylands area was made possible through the LSTF funding as part of the ‘BigHertsBigIdeas’ package.

Consideration should be given, within the production of the Development Plan Documents, to the requirement of proposed new developments that would have significant transport implications, to have a Green Travel Plan. It is not necessarily the size of the development that would trigger the need but more the nature of the use. It should include:

- New employment sites employing over ten people
- A use which is aimed at the public (e.g. retail, leisure activities)
- Major residential development

The Travel Plans should seek to:

- Reduce the use of cars by encouraging car sharing;
- Provide links to enable the use of public transport;
- Improve road safety for pedestrians and cyclists; and
- Identify any mitigation works to be funded by the developer in conjunction with the proposal.

Hertfordshire County Council aims to increase opportunities for children and young people to travel to, from and between schools and colleges by sustainable modes, as set out within Hertfordshire's Sustainable Modes of Travel Strategy for School and Colleges 2013/14. The Council, in conjunction with Hertfordshire County Council's Schools Team, will investigate whether all schools in the immediate vicinity of the three AQMAs have School Travel Plans, and get any old Travel plans updated; this is applicable to the following schools:

- Two Waters Primary
- Tudor JMI
- Lime Walk Primary
- Belswains Primary
- St Mary's C of E First School
- Westfield First School
- Egerton-Rothesay School

The Council itself does not currently have a Corporate Travel Plan; the creation of such a document will be strongly encouraged.

Measure	Title
17	Promote travel planning
Key Intervention	
Encourage a shift to more sustainable forms of travel, or reducing the need for travel.	
Definition	Measure / Indicator
Continue to work with local businesses, schools, developers and individuals by promoting sustainable travel through travel planning.	No. of travel plans produced / year. Report annually.
Investigate whether all schools within the vicinity of the three AQMAs have travel plans, and get any old travel plans refreshed.	No. of new or refreshed travel plans produced / year. December 2017.
Support the creation of a corporate travel plan for the Council.	Creation of a corporate travel plan for the Council. December 2016.
Responsibility	
Hertfordshire County Council – Schools Team and Dacorum Borough Council.	

Measure 18: Promote walking and cycling

There are numerous health, financial and environmental benefits to be gained from walking and cycling such as:

- Walking and cycling improves overall physical fitness and wellbeing
- Travelling by bicycle is just as fast as a car door to door across town
- Travelling by bicycle cuts congestion
- Bicycles are free to park
- Travelling by bicycle incurs no road tax and no fuel bills
- Bicycles produce no air or noise pollution

The promotion of walking principally involves providing well-maintained footways, highlighting the many associated environmental, social and economic benefits, providing literature such as local walking maps and supporting and promoting the existence of local walking groups.

Hertfordshire County Council is currently investigating measures to improve the pedestrian walking routes in the area around Durrants Hill Road.

In October 2009 Dacorum Borough Council published its cycling strategy, which commits the Council to:

- Improving cycling infrastructure

- Cycle training (Bikeability)
- Marketing and promotion
- Stakeholder engagement
- Wider engagement (partnerships with other agencies)
- Planning (the integration of cycling into land use development)
- Targets and monitoring

The Council has also provided cycle parking facilities at educational establishments, retail centres, public transport interchanges and leisure centres.

The Council also encourages cycling amongst its employees. The Council provides secure cycle storage for use during the day, in addition to showers and lockers. The '*Cycle to Work*' scheme was launched across the Council on 20 January 2014, using the organisation CycleScheme.co.uk, as the partner. The scheme enables employees to obtain credit up to the value of £1000 to choose a bicycle and equipment. The employee will then pay back the cost, (minus tax and national insurance contributions), over a twelve month period, through monthly salary sacrifices. To date, eleven members of staff have taken up the scheme. Dacorum Borough Council also offers a Cycle Loan Scheme – a twelve month payback of total cost borrowed from the Council (up to £1000).

The Council also supports and promotes various national and local events such as 'Cycle to Work Day' and Hertfordshire's 'Year of Cycling', a year of cycle-related events across the County, which was launched in May 2014.

The current Tring, Northchurch and Berkhamsted Urban Transport Plan (UTP) proposes cycling and pedestrian improvements on the Grand Union Canal towpath in Northchurch. It is hoped that such improvements will promote walking and cycling along the towpath.

Improvements are also being made to footpaths and cycling routes within and around Hemel Hempstead as part of the successful LSTF bid. Funding has allowed the provision of new and enhanced walking and cycling routes to Maylands Business Park from other parts of Hemel Hempstead. Physical improvements have also been made to local sections of the National Cycle Network (specifically on the Nickey Line cycle route between Hemel Hempstead town centre, Maylands Business Park and St Albans). Urban realm improvements have also been undertaken at Maylands Business Park to provide a prioritised environment for pedestrians, cyclists and bus passengers. Bid monies are also being used to

provide new cycle parking facilities in targeted locations across the bid area and for the SkyRide partnership (to promote the SkyRide Local programme).

In addition to the above improvement projects, the general need for further cycle lane provision and improvement/better maintenance of roads, pavements and canal towpaths (particularly between Kings Langley and Berkhamsted) has been recognised. Road safety issues are also recognised as a major barrier to the uptake of cycling (and to a lesser degree walking). The Council will work with Hertfordshire County Council to deliver these improvements and address barriers.

LSTF funding has also enabled the organisation of a cycle challenge for businesses within the LSTF area. ‘The Big Herts Cycle Challenge’ was launched in 2012 and has been running successfully for the last three years. It is a month long competition between workplaces in Watford, St Albans and Hemel Hempstead. The competition is divided into six size categories (dictated by employee numbers). The winning business within each of the six categories is the one with the greatest percentage of staff taking part (recording their cycling activity). It aims to introduce as many new people to cycling as possible, enabling them to discover the benefits of cycling whilst doing their bit to ease congestion and reduce pollution in the county. Ongoing market research assesses the longer term impact of the challenge.

Amongst the many sustainable transport-related benefits, registered members of the ‘BigHertsBigIdeas Business Network’ and ‘Maylands on the Move’ are entitled to a 10 per cent discount at the following participating local cycle retailers:

- Leisure Wheels, Old Town, Hemel Hempstead
- Bridgman Cycles, Leighton Buzzard Road, Hemel Hempstead

Approximately 60 per cent of Dacorum Borough Council Civic Centre employees live within a three mile radius. The Council recognises this as an opportunity to encourage staff to walk/cycle to work.

Measure	Title
18	Promote walking and cycling
Key Intervention	
Encourage a shift to more sustainable, healthier forms of travel.	
Definition	Measure / Indicator
Support and promote local walking groups.	No. of new members.

Support the Council's Cycling Strategy.	Meet targets contained with the strategy.
Support and promote the Council's 'Cycle to Work' and 'Cycle Loan' schemes.	No. of applicants. Report annually.
Support and promote various national and local events such as 'Cycle to Work Day', Hertfordshire's 'Year of Cycling' and 'The Big Herts Cycle Challenge'	No. of participants. Report annually.
Encourage Council employees to walk/cycle to work.	No. of promotional campaigns. No. of employees walking/cycling to work. Report annually.
Responsibility	
Dacorum Borough Council – Regulatory Services	

Measure 19: Encourage the use of public transport

The Council recognises that improvements to, and the promotion of public transport will bring about reduced congestion and improve air quality.

Public transport can provide a good alternative to the car for the journey to and from work. For business, developing a public transport strategy reduces the need for expensive parking spaces and improves site access to customers and staff. For employees, journeys via public transport are cheaper than the real cost of traveling by car, are less stressful than driving and help build exercise into daily routines (e.g. walking to and from the bus stop or train station).

'Most people in Hertfordshire live within 6 minutes walk of their nearest bus stop.'
(Hertfordshire County Council, 2014)

Hertfordshire County Council's Bus Strategy 2011 – 2031 (published June 2011) sets out the following objectives:

- Support, promote and improve a network of efficient and attractive bus services which are responsive to existing and potential passenger needs, including the special accessibility requirements of the elderly and disabled.
- Procure a range of bus provision which provides maximum benefit to the travelling public in the most cost effective way.
- Develop a passenger transport network as a viable alternative to the use of the private car to contribute to the reduction of greenhouse gas emissions.
- Encourage parents and school aged children to make maximum use of the available public transport network.

- Recognise that customers need attractive and affordable fares to use the system to its full potential and that car users need to be encouraged to choose sustainable modes.
- Continue to support and develop the bus transport provision that allows maximum accessibility – particularly for non-car users and the disadvantaged (disabled, elderly etc.)
- Promote and publicise the passenger transport network through the Intalink partnership using a variety of media.
- Provide and maintain all bus stops, and other bus related highway infrastructure, to consistent quality and standards across the county.
- Seek to give greater priority to buses on the road network to improve punctuality and minimise bus service disruption from road congestion and the effects of road works.
- Continue to develop partnerships with other parties to achieve improvements in service provision and other facilities for specific aspects, corridors or geographical areas.

Particular air quality and greenhouse gas emissions benefits are addressed by the following policies:

- The County Council will take account of the contribution that bus services make to reducing car use and emissions by supporting contract bus services and its policies to assist commercial provision.
- The County Council will encourage operators to invest in vehicles with lower emissions, systems that assist bus drivers to be more fuel efficient and adopt developing technologies, if this is suitable for Hertfordshire conditions.

The Transport Act 2000 placed a duty on Local Transport Authorities to stipulate required standards for passenger transport information. In Hertfordshire this is largely delivered through the Intalink Partnership. This is a unique quality partnership for information and marketing of the passenger transport network in Hertfordshire. Launched by Hertfordshire County Council in 1999, the partnership consists of the majority of local bus and train operators, district/borough councils and neighbouring local transport authorities.

Intalink have recently introduced the weekly Explorer ticket, which can be purchased on buses for £30 (£20 for a student with a Hertfordshire SaverCard) and gives a person unlimited travel on the Hertfordshire Bus Network for seven days. Passengers buy their weekly Explorer ticket on the first bus they board at any time of day. Most buses have a

sticker in the window to show that Explorer is issued and accepted. The introduction of the weekly Explorer ticket follows on from the already popular daily Explorer ticket which costs £12.50 and allows any group of up to four people to travel all day on the Intalink network. A £8.50 ticket is also available for one person along with the £4.25 ticket for a student with a Hertfordshire SaverCard. Further information is available at www.intalink.org.uk/explorer.

As part of Hertfordshire's successful LSTF funding bid, improvements are being made to public transport infrastructure across St Albans, Watford and Hemel Hempstead. '*Network Hemel Hempstead*' has been developed as an extension of the work of the Quality Network Partnership in Hertfordshire. This body comprises Hertfordshire County Council, Dacorum Borough Council, the University of Hertfordshire, Campaign for Better Transport, local bus and train operators and groups representing passengers. One of the principle aims of Network Hemel Hempstead is to improve local passenger transport services, thereby providing viable, cost-effective alternatives to car use and promoting sustainable travel.

Among the objectives of Network Hemel Hempstead are to provide:

- Truly integrated passenger transport
- Better accessibility for the disabled
- Improved reliability and punctuality
- Enhanced frequency of service
- Better quality travel information
- Encouragement to use other non-car modes of travel e.g. walking and cycling

The Network Hemel Hempstead website provides comprehensive passenger transport information and advice on other sustainable travel modes. In addition Network Hemel Hempstead has produced a pocket travel guide for the area; copies are available from the Civic Centre, local libraries and a number of other locations.

Network Hemel Hempstead has worked with the local bus operators to create the Hemel Hempstead BUSnet ticket. This is a multi-operator bus ticket, which can be used to provide unlimited travel throughout the Network Hemel Hempstead area. Passengers buy a daily or weekly BUSnet ticket on the first bus they board. They can then use the same ticket on any other bus service running within Hemel Hempstead, making travelling by bus easier. Further information is available at www.networkhemelhempstead.co.uk.

Some of the major public transport operators in Hertfordshire offer registered members of the 'BigHertsBigIdeas Business Network' and 'Maylands on the Move' discounts for their employees. These tend to be discounts on season tickets of one month or longer within a specified geographic range or route/zone structure. For example, Arriva offers a 20 per cent discount on a 4-weekly season ticket and Centrebus offers a 10 per cent discount on specific routes serving Hemel Hempstead (46 and X31 from Luton). These discounts only apply with the LSTF area (i.e. St Albans, Watford and Hemel Hempstead and certain other smaller locations like Kings Langley, Apsley and London Colney). It is currently unknown what will happen to these discounts at the end of the LSTF funding period.

LSTF funding has also allowed the implementation of improvements to the bus infrastructure between Maylands Business Park and Hemel Hempstead, through the introduction of two new bus routes. The Maylands Link bus services, ML1 (morning and evening peak time service) and ML2 (lunchtime service), operated by Arriva, provide a fast and direct link between Hemel Hempstead Railway Station, the town centre and various bus stops around Maylands Business Park. This service commenced in February 2013. It is hoped that the new bus routes will become self-funding by the end of the LSTF funding period. The Council will continue to promote this new service to increase bus patronage.

Despite the efforts made to date, the Council recognises that there are still barriers preventing the more widespread use of public transport. The general barriers are cost and convenience; public transport, (in particular train travel), is more expensive and less convenient than to travel by car. Other barriers have been identified locally, for example, access and timetabling issues.

Most buses in Hertfordshire are run commercially by bus companies. Hertfordshire County Council subsidises around 30 per cent of services to help fill gaps in the commercial network. A consultation on funding for bus services has recently been undertaken. It is unlikely that the same emphasis will be able to be given to their funding as previously thought.

Real time bus indicators are proposed to be rolled out across the borough, the Council recognises the benefit and requirement for such systems, not only in urban areas but also rural areas. Dacorum Borough Council will work with Hertfordshire County Council and local bus operators to address these issues and work to bring about improvements where possible.

Measure	Title
19	Promote the use of public transport
Key Intervention	
Encourage a shift to more sustainable forms of transport.	
Definition	Measure / Indicator
Support Hertfordshire's Bus Strategy.	Meet targets contained with the strategy.
Promote available public transport discounts.	Increased bus patronage. April 2015.
Support and promote existing bus routes (e.g. M1 and M2).	Increased bus patronage. April 2015.
Investigate gaps in bus service (routes and timetabling)	Identify gaps and opportunities for improvement. December 2016.
Responsibility	
Hertfordshire County Council and Dacorum Borough Council	

Measure 20: Promote TravelSmart projects

With funding from the Department for Transport's Local Sustainable Transport Fund, a TravelSmart programme has recently been undertaken in Hemel Hempstead, with the support of Hertfordshire County Council, Dacorum Borough Council and other local partners.

The TravelSmart programme aims to reduce car use for short local journeys and encourage healthier lifestyles by increasing active travel in our daily routines. It works by offering people information on their walking, cycling and public transport options and helping them overcome any barriers they have to choosing more active travel.

As part of this programme, almost 14,000 households were contacted (40 per cent by telephone and 60 per cent on the door) between March and July 2013. Households were questioned in respect of their existing transport behaviour and offered a wide range of free information on local travel options tailored to their individual needs and interests (including local walking maps, cycling maps and bus timetables, as well as a discount card). The information packs were hand-delivered to households by bicycle. Over 10,000 households (74 per cent of those contacted), requested information from the TravelSmart team. Public transport information proved to be most popular, followed by walking and then cycling. A new Local Travel Map developed especially for the project was the most popular single item offered.

The success of the TravelSmart programme is measured by travel behaviour surveys conducted before (baseline) and after. The final project results will be released in early 2015. The Final Evaluation Report compiled by Sustrans and Socialdata in 2010 for the TravelSmart project undertaken in Watford during the period 2008-10, identified substantial increases in walking, cycling and use of public transport, leading to a relative reduction in car-as-driver trips of 13 per cent. This level of behaviour change is in line with, or exceeds, other UK TravelSmart projects.

The Council will publicise the results of the recent Hemel Hempstead TravelSmart project and explore opportunities for further projects within the borough.

Measure	Title	
20	Promote TravelSmart projects	
Key Intervention		
To increase awareness of travel choices and encourage changes in behaviour that will contribute to improving local air quality.		
Definition		Measure / Indicator
Publicise the results of the Hemel Hempstead TravelSmart project.		Ensure the findings of the Hemel Hempstead TravelSmart project are widely publicised through the relevant communication channels (including the Council's Air Quality webpage). April 2015.
Explore opportunities for further TravelSmart projects within the borough.		Identify further areas and potential sources of funding. December 2016.
Responsibility		
Dacorum Borough Council – Regulatory Services.		

Table 5.1: Summary of Action Plan measures to be adopted

Measure	Title
<i>Package of Measures 1: Reducing emissions via strategic measures</i>	
1	Improve links with the Local Transport Plan
2	Improve links with the Local Planning and Development Framework
3	Improve links with Public Health
<i>Package of Measures 2: Optimising traffic flow through the AQMAs</i>	
4	Junction Investigations
5	ANPR traffic study
6	Congestion study
7	Road signage and satellite navigation alterations
8	Potential relocation of bus stops
9	Determine significance of school traffic
10	Potential relocation of on-street parking
<i>Package of Measures 3: Reducing transport emissions</i>	
11	Promote the use of electric vehicles (EV)
12	Promote car share schemes
13	Green incentives for taxi drivers
14	Reducing emissions from goods vehicles within the AQMAs
15	Reducing emission from Council fleet
16	Encouraging smarter driving
<i>Package of Measures 4: Promoting sustainable transport options</i>	
17	Promote travel planning
18	Promote walking and cycling
19	Promote the use of public transport
20	Promote TravelSmart projects

6 Methodology utilised to assess short-listed measures

In accordance with the government guidance, the twenty measures short-listed for inclusion within the AQAP have been assessed against a range of criteria in order to assess their suitability for inclusion and enable suitable measures to be prioritised.

The criteria against which options were assessed were:

- Potential air quality impact
- Implementation costs
- Cost-effectiveness
- Co-environmental benefits, social and economic impacts
- Risk factors
- Feasibility and acceptability

The following subsections outline how the assessment has been undertaken.

6.1 Potential air quality impact

This is a key assessment in that the AQAP must focus on options that improve air quality most effectively.

A semi-quantitative assessment, which relies on a degree of judgement, has been adopted. The methodology used is outlined below:

- i. The description of the option and the proposed change to be brought about by the measure is used alongside the source apportionment analysis to define what proportion of road transport emissions would potentially be affected by the measure.
- ii. A view is then expressed on how much of the traffic would actually be changed by the measure.
- iii. The proportion of emissions potentially affected by the measure and the view on how far they could be changed by the measure are combined to express a view on how much transport emissions may be reduced due to the measure.
- iv. A view is then expressed on how significant this change would be in terms of making progress towards the air quality objective.

For the purpose of this assessment, the result of the realistic intervention has been assessed as having a potentially:

- **Zero local air quality benefit** if the realistic intervention is 0 per cent or worse
- **Small local air quality benefit** if the realistic intervention is 1 per cent
- **Medium local air quality benefit** if the realistic intervention is 2 – 5 per cent
- **Large local air quality benefit** if the realistic intervention is >5 per cent

6.2 Implementation costs

The potential implementation costs of each option have been assessed as follows:

- **Cost neutral** (measure already implemented through existing plans/programmes)
- **Low costs** (up to £20,000 annually e.g. for small surveys or campaigns or other measures using current resources)
- **Medium costs** (up to £60,000 annually e.g. for a full time officer and resources)
- **High costs** (up to £200,000 annually e.g. for small traffic management schemes)
- **Very high costs** (above £200,000 annually e.g. for new infrastructure)

These cost bandings are approximate estimates only.

6.3 Cost-effectiveness

The effectiveness of each measure in improving air quality is compared to the implementation costs in the following matrix:

AQ benefit		Score	Zero	Small	Medium	Large
Cost	Score		0	1	2	3
Neutral	5	0	5	10	15	
Low	4	0	4	8	12	
Medium	3	0	3	6	9	
High	2	0	2	4	6	
Very High	1	0	1	2	3	

In this table the assessed implementation costs and potential air quality impacts have been given a weighted score. The product of the weighted scores for each measure is calculated.

The results can be interpreted as follows:

- If the product is **high** (10 or more) then the measure is considered to be very cost-effective (significant impacts for the cost involved)

- If the product is **medium** (between 5 and 9) then the measure is considered to be within the medium range of cost-effectiveness
- If the product is **low** (4 or less) then the measure is less cost-effective (minimal impact for the cost involved).

This method only estimates the *relative* cost-effectiveness of the measures rather than their *absolute* values. This method is useful in determining the relative priority of different measures.

6.4 Co-environmental benefits, and other social and economic impacts

In this assessment other co-environmental benefits and the social and economic impacts are highlighted.

Potential co-environmental benefits include:

- Greenhouse gases: The likely effect on greenhouse gas emissions is assessed as being an overall reduction or a local reduction perhaps with emissions being relocated elsewhere.
- Noise.

Potential social impacts are highlighted, e.g. whether or not it is likely that the option would potentially:

- Provide health benefits in terms of lower exposure to pollutants or increased mobility;
- Increase road safety;
- Improve accessibility.

Potential economic impacts are highlighted, e.g. whether or not it is likely that the option would potentially:

- Influence sustainable development or accessibility within the borough;
- Reduce or increase overall travel time;
- Place additional requirements on operators.

Without detailed information on the true impacts of the options these assessments rely on judgement.

6.5 Risk factors

In this assessment risk factors are highlighted, e.g. whether or not it is likely that the measure would:

- Relocate emissions and hence lead to worsening air quality elsewhere;
- Require a change in land use;
- Place limits on pace of development, or increase costs of development significantly.

Again, without detailed information on the true impacts of the measures, these assessments rely on judgement.

6.6 Feasibility and acceptability

Each option has been assessed for its feasibility against three criteria. These are whether the Council has:

- The executive powers under existing legislation to implement and enforce a measure. Alternatively, whether the authority has an existing mechanism to influence other agencies to implement a measure
- Secured funding for the measure or a straightforward route to secure funding
- Characterised the potential positive and negative impacts of the measure with sufficient evidence or confidence to make a decision to implement the measure.

The table below sets out the criteria adopted for defining the measure as being feasible over the short, medium or long term, or as being unfeasible. Each option is assessed against each criterion. The feasibility timeframe is defined according to which of the three assessments results in the longest of the four possible terms (short, medium, long or unfeasible).

Feasibility timeframe	Authorisation	Funding secured	Potential +/- impacts fully characterised
Short term (1 – 3 years)	Yes routinely exercised	Yes potentially straightforward	Yes
Medium term (4 - 7 years)	Yes but not routinely exercised	Yes less straightforward	Not without further study
Long term (>7 years)	Highly uncertain	No or extremely difficult	Not without further study
Unfeasible	No	Will never attract funding	Difficult to characterise

The 'acceptability' of each measure has been judged against the following criteria:

- **Acceptable** (likely to bring about some level of behaviour change, unlikely to incur significant personal costs)
- **Unacceptable** (considerable behaviour change required, likely to incur significant personal costs)

6.7 Assessment conclusions

The results of the assessment are presented in **Table D.2** in **Appendix D**.

7 Prioritisation of Measures

Determining a prioritised list of measures from such a wide range of criteria is potentially complex. Due to their overarching nature, it is anticipated that the strategic measures will provide some of the frameworks by which the other measures will be successfully implemented; therefore they are not assessed in the same way and are regarded as overall priorities for implementation.

In reference to the specific measures; those that satisfy the following criteria have been given highest priority for implementation:

- Provide good potential air quality benefits (with appropriate consideration of cost-effectiveness, feasibility and acceptability etc.)
- Are most likely to contribute (either directly or indirectly) towards NO₂ reductions within the AQMAs.
- Are realistically achievable within the short – medium term.

The specific measures have been subdivided onto the following three categories:

- **Highest priority**
- **Medium priority**
- **Lowest priority**

Those specific measures given **highest priority** are:

- Junction investigations
- ANPR traffic study
- Congestion study
- Road signage and satellite navigation alterations
- Potential relocation of bus stops
- Determine significance of school traffic
- Potential relocation of on-street parking

Justification: *The above measures are those considered the most likely to contribute most significantly (either directly or indirectly) towards NO₂ reductions within the existing AQMAs. Road signage and satellite navigation alterations have been assessed as having a potentially medium local air quality benefit for low costs, whilst both the potential relocation of the bus stops and the relocation of on-street parking have been assessed as having a potentially large air quality benefit for medium and low costs respectively. With the exception of the*

relocation of on-street parking, which is considered to be very cost effective, all other options are considered to be within the medium range of cost-effectiveness and are anticipated to have a direct positive impact on air quality within the AQMAs. Associated co-environmental benefits have been identified, including a reduction in other air pollutants, greenhouse gases and noise. Risks associated with altering road signage and satellite navigation routes and bus stop relocations could be the worsening of air quality in other areas. The relocation of on-street parking is likely to increase traffic speed within the High Street, Northchurch AQMA, which is a road safety issue. Furthermore, bus stop relocation in Northchurch in particular is unlikely to be welcomed by local residents; the installation of a layby at its current location would therefore be the preferred option and this will be investigated further.

In reference to the junction investigations, ANPR traffic study, congestion study and school traffic assessment, whilst there would be no direct air quality improvement associated with these measures, such investigations are required to enable targeting of further high impact, direct measures to improve air quality within the AQMAs. The implementation costs associated with the junction investigations and congestion study are low. In the case of the ANPR traffic study implementation costs would be medium. The school traffic assessment, which simply requires the analysis of the automatic monitoring data, would be cost neutral.

All the above measures are considered to provide good potential air quality benefits (either directly or indirectly) within the AQMAs, and to be cost-effective, acceptable and feasible in the short term to medium term.

Those specific measures given **medium priority** are:

- Reducing emissions from goods vehicles within the AQMAs
- Promote travel planning
- Promote walking and cycling
- Promote the use of public transport
- Promote car share schemes
- Promote TravelSmart projects
- Encouraging smarter driving
- Reduce emissions from Council fleet

Justification: *All the above measures (with the exception of reducing emissions from the Council's fleet) have been assessed as providing a potentially medium local air quality benefit for low costs, thus they are considered to be within the medium range of cost-effectiveness. Although reducing emissions from the Council fleet has been assessed as*

having a small local air quality benefit for medium costs, thus making the option less cost-effective, the Council recognises that it must lead by example so the measure has been given a higher priority. Furthermore, additional economic benefits such as fuel savings are to be gained.

With the exception of reducing emissions from goods vehicles within the AQMAs, all these measures are borough-wide in nature and will contribute towards reducing ambient background NO₂ concentrations in addition to other air pollutants, greenhouse gases, noise and traffic congestion. Potential health and financial benefits have been identified in relation to walking and cycling. Potential risks have also been identified in respect of some of the measures, for example, personal safety concerns in respect of the car share scheme, and road safety concerns in respect of the promotions of walking and cycling (including TravelSmart).

In reference to reducing emissions from good vehicles; the source apportionment study indicated these vehicles contribute to overall NO₂ concentrations within the AQMAs to a lesser degree than ambient background concentrations and cars; as such they have been assigned a lesser priority for implementation than the other AQMA specific measures. The implementation of schemes such as a local freight quality agreement may put additional financial pressure on companies.

Those specific measures given **lowest priority** are:

- Promote the use of electric vehicles (EV)
- Green incentives for taxi drivers

Justification: *The above measures have been assigned as a low priority for implementation. In reference to the promotion of electric vehicles, in the short term this is likely to provide a small local air quality benefit, as a result of limited uptake. The implementation cost is anticipated to be low, thus the measure is considered less cost-effective. In time, with improved infrastructure etc. it is likely that electric vehicles will become more and more popular. This is recognised as a long-term rather than a short-term measure.*

In reference to the green incentives for taxi drivers, this measure is likely to provide a potentially small local air quality benefit to the AQMAs and borough in general, as taxis constitute a relatively small proportion of total vehicles numbers. The cost implications to the Council would be low, thus the measure is considered to be less cost-effectiveness.

8 Action Plan Funding

The capacity to successfully implement an AQAP is heavily dependent upon obtaining adequate funding and resources to deliver the proposed measures. Many of the measures included within the plan are already supported through existing strategies (e.g. Local Transport Plan) but may require some additional funding to facilitate modification in line with the requirements of the AQAP. For other measures, other sources of funding will be required before the measure can be progressed. Other potential sources of funding include:

- Defra Air Quality Grant Funding
- Public Health funding
- Developer contributions

Funding for the implementation of this Action Plan is through the Local Transport Plan where existing projects complement the Action Plan. Further funding will be sought through the Defra air quality grant annual award scheme for the implementation of specific tasks within measures. The opportunity for Public Health funding is currently being explored.

The availability of such funding is likely to determine the progress of the Action Plan.

9 Consultation on the Draft Air Quality Action Plan

During the period of 1 September to 26 October 2014, the Council undertook an extensive consultation process whereby complete and summarised copies of the draft Air Quality Action Plan were made available (in electronic format) to the following consultees:

- All properties within the Air Quality Management Areas
- All relevant Town and Parish Council Members
- All relevant Dacorum Borough Council Departments
- Dacorum Borough Council consultation email group
- All neighbouring Borough and District Councils
- All relevant Hertfordshire County Council Departments
- Defra
- Local Chambers of Commerce
- Bus and Train Operators in Dacorum
- Highways Agency
- Environment Agency
- Natural England
- Sustrans
- Dacorum Borough Council website for general public access

A public workshop event for the draft Air Quality Action Plan was held on 22 October 2014 at Dacorum Borough Council's Civic Centre. The event was attended by local residents, a representative of Berkhamsted Town Council, a representative of Dacorum Environmental Forum and members of the borough and County Council. Despite relatively low attendance figures a wide range of air quality related issues were discussed at this event.

The report was also presented to Dacorum Borough Council's Corporate Management Team (comprising the Chief Executive, Directors and Assistant Directors) on 28 October 2014 and to Dacorum Borough Council's Environment Corporate Working Group on 30 October 2014. The report was taken to Dacorum Borough Council's Overview and Scrutiny Committee on 10 December 2014.

The views and comments received as part of the extensive consultation exercise were considered and the Air Quality Action Plan was revised as appropriate. The revised Air Quality Action Plan was approved by Cabinet on 16 December 2014.

9.1 Draft Air Quality Action Plan: Public Consultation

Summary

The following sections summarise the public consultation process undertaken by the Council in relation to the draft Air Quality Action Plan and the responses received from the general public and representatives from various organisations during the official consultation period.

9.1.1 Written Representations

Formal written representations in respect of the draft Air Quality Action Plan were received from Defra, the Environment Agency, Natural England, Sustrans, Northchurch Parish Council, Berkhamsted Town Council, Chiltern District Council, Hertfordshire County Council (Transport Policy & Growth), Dacorum Borough Council (Legal Governance and Strategic Planning & Regeneration), a number of representations were also received from local residents. These representations have been considered during the finalisation of the Action Plan.

9.1.2 Online Survey

As part of the consultation exercise, interested parties were invited to complete a short online survey, comprising ten questions, in relation to the content of the draft Air Quality Action Plan. The survey, along with all associated documentation, was made available on the Council's air quality webpage. Paper copies of the survey were also made available. The survey sought opinions on the measures proposed within the Action Plan as well as the prioritisation methodology utilised and also provided an opportunity for people to make further comments. In total, 56 responses were received. The views and opinions received, and discussed below, reflect those of the respondents only, and not the whole borough.

In reference to question 1; the majority of responses were received from people who did not live (or work) within an AQMA (64.3 per cent). The remaining 36.7 per cent of responses were received from people who lived or worked within the AQMAs.

Overall, the results of the online survey indicate general support for the majority of proposed action plan measures, with the highest percentage of agreement (>80 per cent) being for the following:

- Junction investigations

- Congestion study
- Reducing emissions from LGVs within the AQMAs
- Reducing emissions from Council fleet
- Promoting walking and cycling

In reference to the ANPR traffic study (Measure 5), the majority of people did not agree that this proposed measure was likely to bring about improvements to air quality within the AQMAs and the borough as a whole (48.1 per cent), compared with 35.2 per cent who agreed. The remaining 16.7 per cent of people were unsure.

In reference to question 6; 17.9 per cent of people agreed that all potential options to improve air quality had been considered. 53.6 per cent of people did not agree that all potential options had been considered, and 28.6 per cent of people were unsure. Question 7 allowed those who answered 'no' to this question to explain why.

In reference to question 8; 25.9 per cent of people thought that the measures had been appropriately prioritised, 29.6 per cent of people did not and 44.4 per cent of people were unsure. Question 9 allowed those who answered 'no' to this question to explain why.

Question 10 gave respondents the opportunity to provide any further comments in relation to the Draft Air Quality Action Plan.

Due to the diversity of comments received in respect of questions 7, 9 and 10, it is not possible to discuss all of these within the report. However, all comments and suggestions received were considered during finalisation of the Action Plan.

The responses received in respect of the survey are presented in **Figures 9.1 – 9.7**.

Full results of the online survey are presented in **Appendix E**.

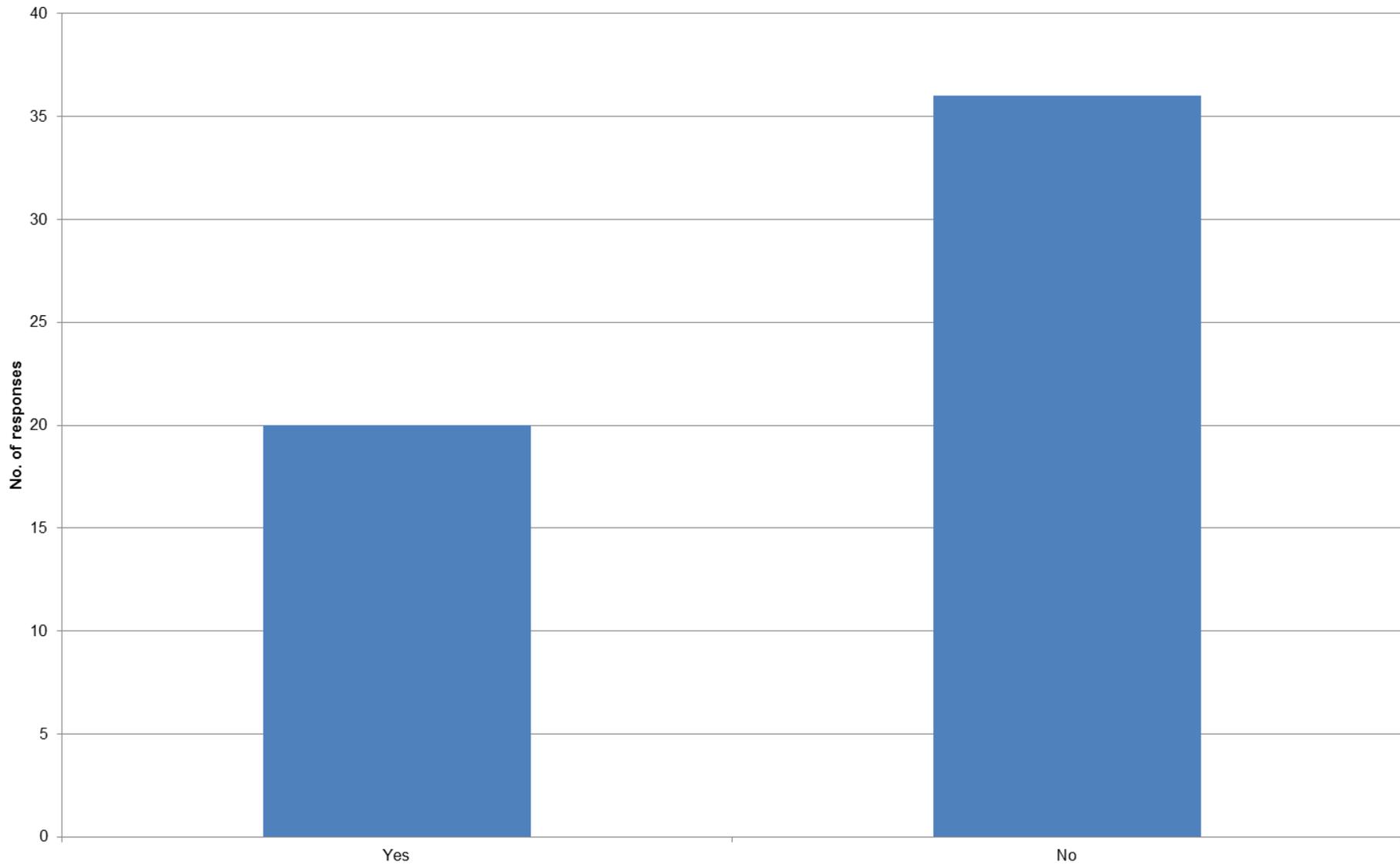


Figure 9.1 Responses to Question 1 - *Do you live or run a business within an Air Quality Management Area?*

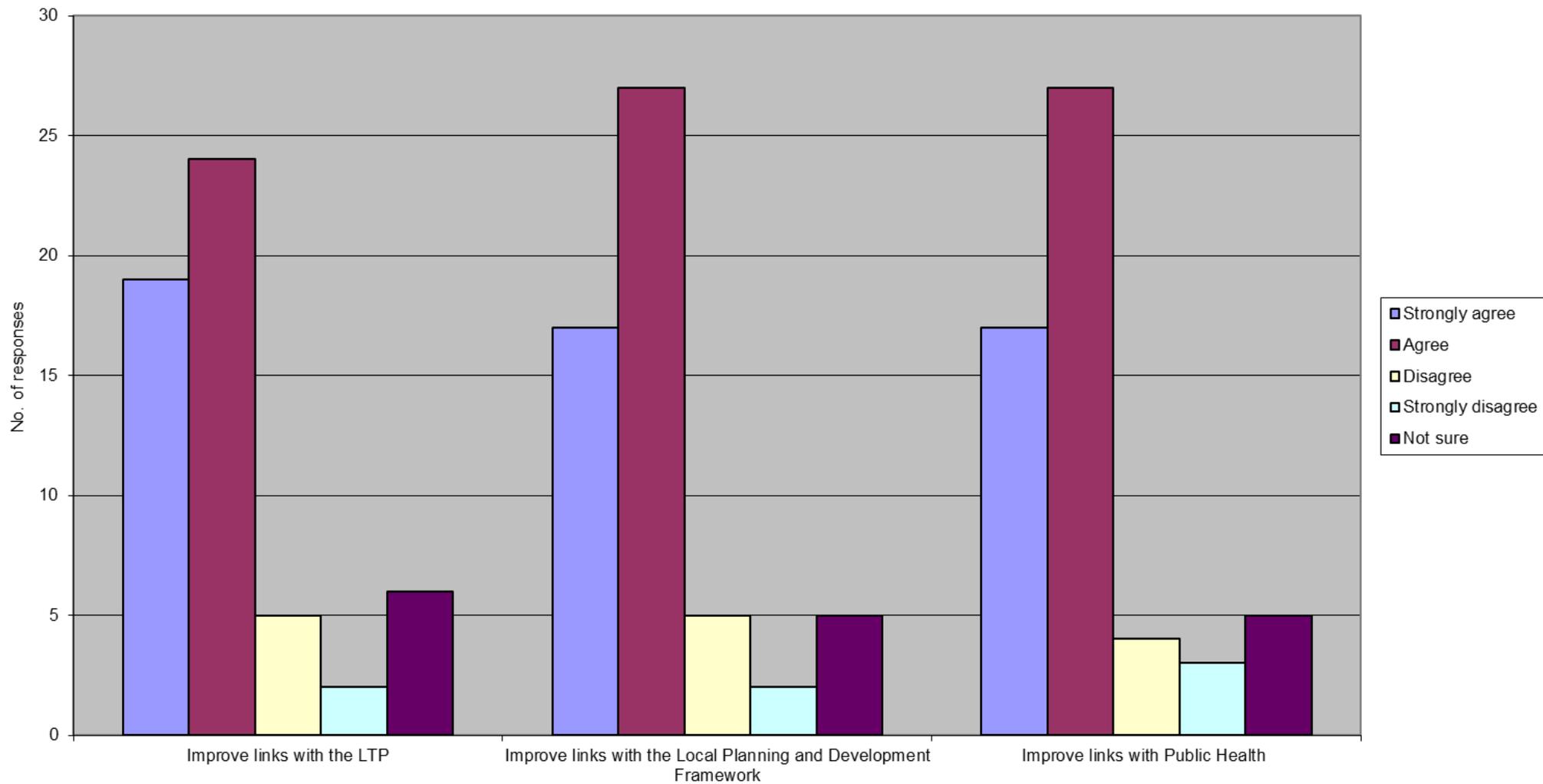


Figure 9.2 Responses to Question 2 - Do you agree or disagree that the proposed measures are likely to improve air quality within the AQMAs and the borough as a whole? Package of Measures 1: Reducing emissions via strategic measures

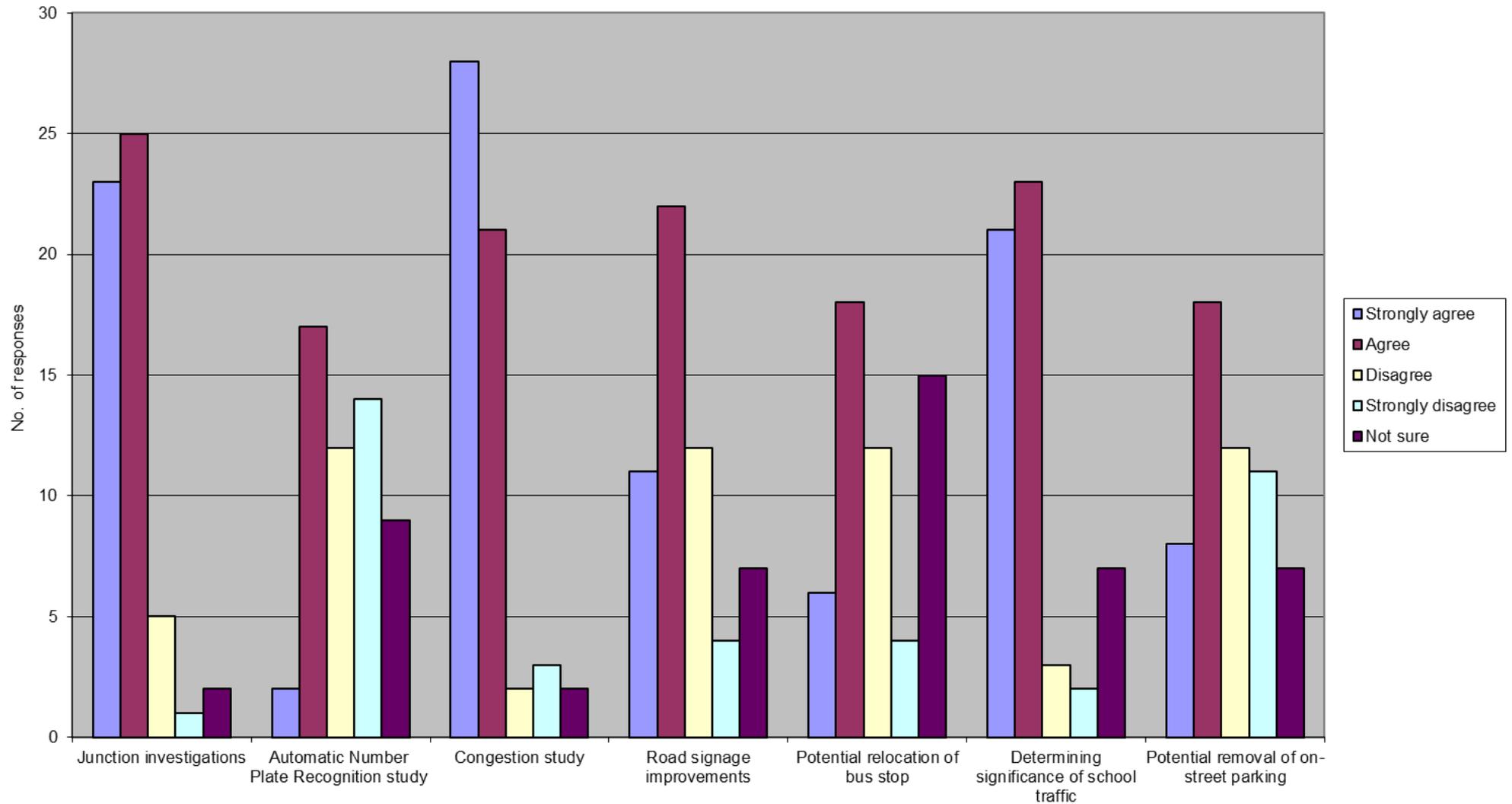


Figure 9.3 Responses to Question 3 - Do you agree or disagree that the proposed measures are likely to improve air quality within the AQMAs and the borough as a whole? Package of Measures 2: Optimising traffic flow through the AQMAs

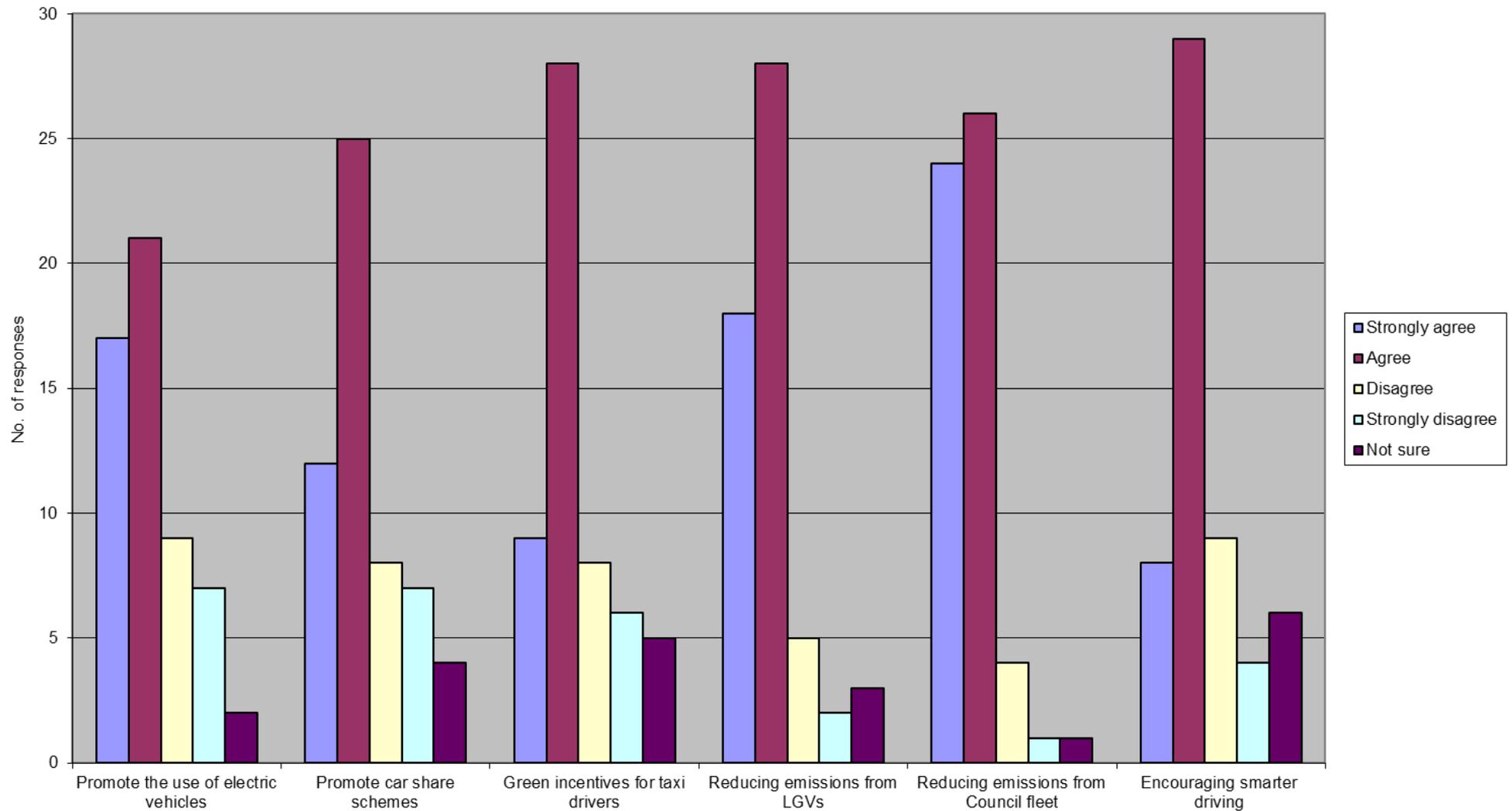


Figure 9.4 Responses to Question 4 - Do you agree or disagree that the proposed measures are likely to improve air quality within the AQMAs and the borough as a whole? Package of Measures 3: Reducing transport emissions

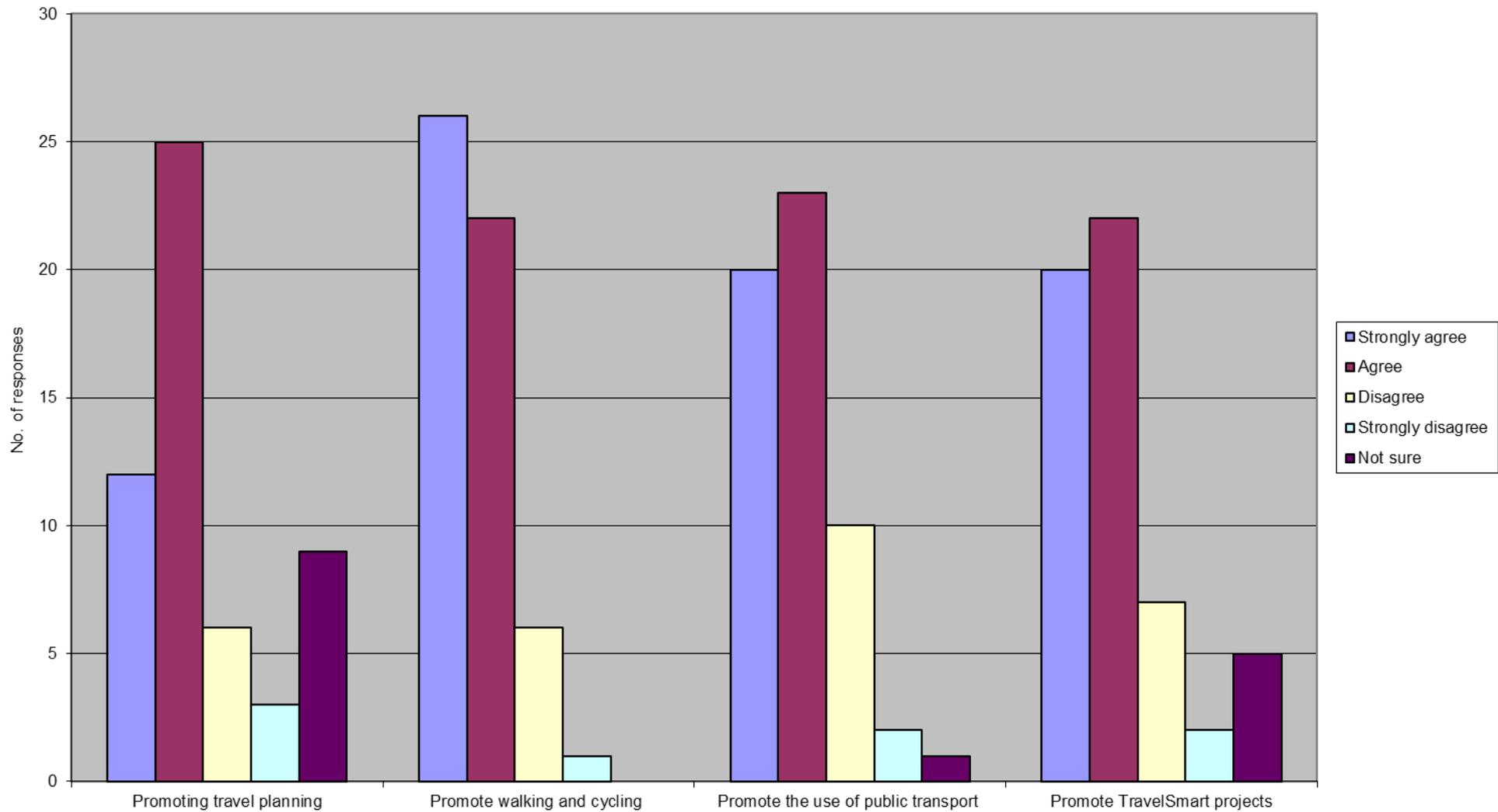


Figure 9.5 Responses to Question 5 - Do you agree or disagree that the proposed measures are likely to improve air quality within the AQMAs and the borough as a whole? Package of Measures 4: Promoting sustainable transport options

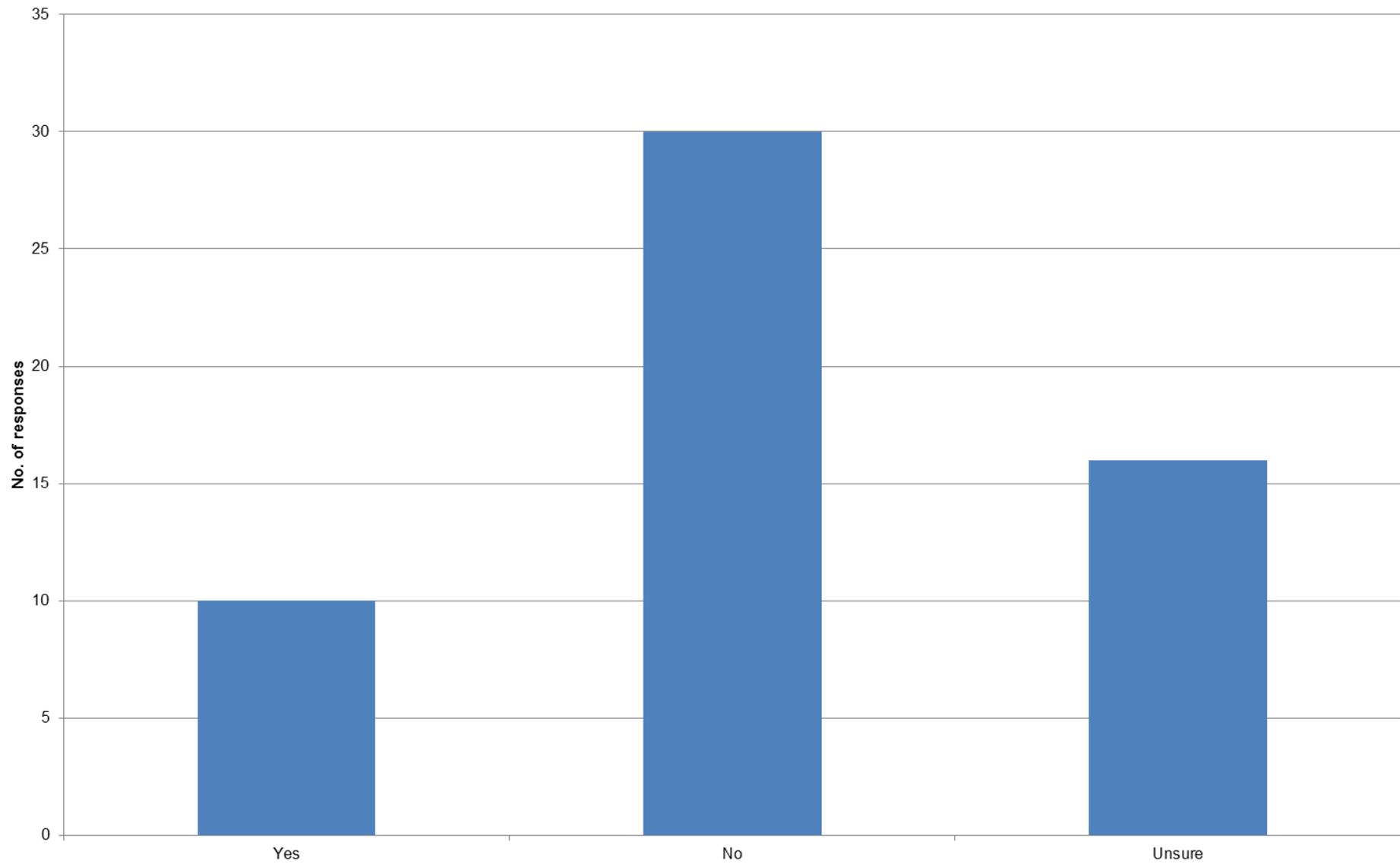


Figure 9.6 Responses to Question 6 - *In your opinion, have all potential options to improve air quality been considered?*

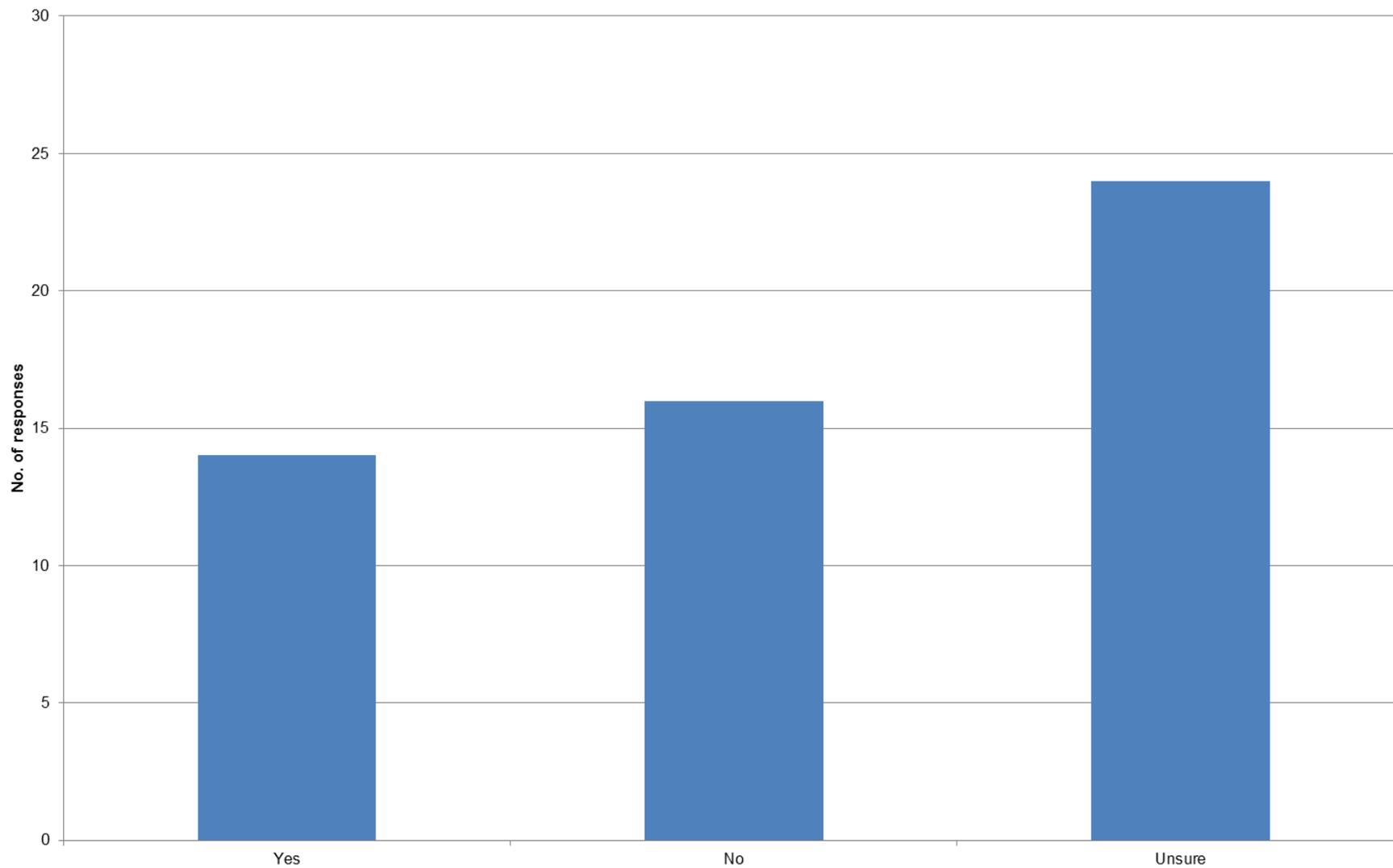


Figure 9.7 Responses to Question 8 - *In your opinion, do you think the measures have been appropriately prioritised?*

9.2 Draft Air Quality Action Plan: List of amendments

Following the consultation a number of amendments have been made to the content of the report, the pertinent amendments are as follows (minor amendments have been omitted from this discussion):

- Title amended to Air Quality Action Plan 2015 - 2018.
- Executive Summary amended to emphasise the considerable NO₂ reductions required and the challenge this will present. Source apportionment findings amended to include HGVs and buses. Prioritisation methodology now also summarised. Sentence added to indicate that this report represents the first three years of a longer-term plan to improve air quality within the borough. The Plan will be revised on a three yearly cycle (or earlier if necessary).
- Page 1 (fifth paragraph) sentence added *'Car ownership within Hertfordshire and the borough of Dacorum is higher than the national average. Based on the last national census conducted in 2011, 84 per cent of households within Dacorum had at least one car, compared to 74 per cent nationally.'*
- Page 2 (first paragraph) sentences added *'This report represents the first three years of a longer-term plan to improve air quality within the borough. The Plan will be revised on a three yearly cycle (or earlier if necessary).'*
- Page 7 (third paragraph) updated and expanded to provide more detail on EU infraction proceedings.
- Page 16 (first paragraph) footnote updated to reflect that the Council has successfully defended the legal challenge. Additional paragraph added *'In September 2014 the pre-submission version of the Site Allocations DPD was published for consultation. This forms a material consideration in the determining of planning applications and includes transport specific proposals to help improve transport movement and encourage alternative forms of transport than the car.'*
- Page 18 (second paragraph) last sentence removed and replaced with *'In April 2014, Planning Practice Guidance: Air Quality was published; this provides guiding*

principles on how planning can take account of the impact of new development on air quality.'

- Page 24 (first paragraph) amended to *'Road traffic was identified as the dominant source of NO_x (NO+NO₂) in all three of the Council's AQMAs in the 2013 Further Assessment. Source apportionment studies identified that ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations within all three AQMAs, followed by emissions from cars and goods vehicles on local roads. Buses also contribute within AQMA 1 and 3.'*
- Page 25 Table 3.2 amended to include HGVs as significant sources of NO₂ emissions in all three AQMAs and also buses within AQMA 1 and 3.
- Page 29 (third paragraph) amended to *'Based on the source apportionment analysis, ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations, followed by emissions from cars and good vehicles on local roads. Buses also contribute within AQMA 1 and 3.'*
- Page 32 (second paragraph) re-worded to provide more detail relating to the decision-making process undertaken as part of the initial assessment. Additional paragraph added below.
- Page 35 (third paragraph) last sentence amended to include *'contributing to sustainable transport.'*
- Page 35 (fourth paragraph) second sentence amended to include *'or Technical Guidance'* and corresponding summary table amended accordingly.
- Page 36 (first paragraph after table) sentence added *'It is proposed to create an Air Quality Strategy for Hertfordshire.'* Corresponding summary table amended accordingly.
- Page 37 (first paragraph) re-worded to emphasis the importance of investigative works in the development of appropriate high impact, direct measures and what the findings will be used for etc.
- Page 38 (second paragraph) added to highlight issues at recently redesigned Orchard Street/London Road junction. Corresponding summary table amended accordingly.

- Page 38 (fourth paragraph) amended to *'It is proposed to investigate the efficiency of the current junction layouts and traffic signal controls, at key junctions within the Lawn Lane, Hemel Hempstead and London Road, Apsley AQMAs, with the view to using the findings to inform the development of a business case or a funding application for highway infrastructure improvements to improve traffic flow within these AQMAs.'*
- Page 39 (first paragraph) re-worded to provide more detail as to the proposed ANPR traffic study. Corresponding summary table amended accordingly.
- Page 40 Measure 7 title amended to *'Road signage and satellite navigation alterations.'* Corresponding summary table amended accordingly.
- Page 40 (fourth paragraph) added to detail the proposals for satellite navigation route alteration. Corresponding summary table amended accordingly.
- Page 41 Measure 8 title amended to *'Potential relocation of bus stops.'* Corresponding summary table on next page amended accordingly.
- Page 41 (second, third and fourth paragraphs) additions and amendments to wordings to include bus stops within London Road, Apsley and Lawn Lane, Hemel Hempstead AQMAs. Corresponding summary table amended accordingly.
- Page 42 Measure 10 title amended to *'Potential relocation of on-street parking.'* Corresponding summary table amended accordingly.
- Page 42 (second paragraph) sentence added *'The lack of parking provision within Northchurch is recognised.'*
- Page 43 (first paragraph) amended to highlight resident's concerns regarding road safety issues (in particular speeding).
- Page 43 (third paragraph) sentence added detailing government grants available. Corresponding summary table amended accordingly.
- Page 44 (sixth paragraph) added to detail the Council's intention to bid for government funding for EV vehicles and charge points and to promote EVs to staff via lease and car loan schemes. Corresponding summary table amended accordingly.

- Page 44 (seventh paragraph) sentence added *'The Council recognises that there are barriers preventing the successful uptake of EV, for example range anxiety and environmental issues relating to the recycling of batteries.'*
- Page 45 (second paragraph) added to highlight the difficulty of bringing about change locally and the need for more to be done at central government level.
- Page 45 (fifth paragraph) added to detail the recently introduced Watford Borough Council E-Car Club and Dacorum Borough Council's intentions to investigate this for potential adoption within the borough. Corresponding summary table amended accordingly.
- Page 47 (third and fourth paragraphs) amended to reflect comments from Dacorum Borough Council's Legal Government Team Leader received as part of the consultation. Previous proposed measures not actionable. Now proposed to offer a subsidy to people who licence newer or cleaner (e.g. electric) vehicles, thus reducing the licence fee paid to below cost-recovery levels subject to procurement of funding. Corresponding summary table amended accordingly.
- Page 48 Measure 14 title amended to *'Reducing emissions from goods vehicles within the AQMAs'*. Corresponding paragraph altered to include HGVs as measures targeting LGV may also be relevant. Sentence also added *'The Council will look at ways to reduce the volume of freight traffic passing through the AQMAs, where possible encouraging the use of the A41.'* Corresponding summary table amended accordingly.
- Page 49 (first paragraph) general re-wording. More emphasis on opportunities to incorporate EV. Production of Sustainable Transport Policy also mentioned. Corresponding summary table amended accordingly.
- Page 49 (fifth paragraph) sentence added *'Fleet/fuel monitoring of Council vehicles is already undertaken by the Council for the purpose of expenditure monitoring and as part of the data required for preparation of the statutory Green House Gas Report.'*
- Page 50 (third paragraph) added to detail the Council's intention to bid for government EV funding. Corresponding summary table amended accordingly.
- Page 50 (fourth paragraph) sentence added *'The Council is also intending to promote and encourage the uptake of electric (plug in and hybrid) vehicles by staff via the*

Council's lease car and loan schemes.' Corresponding summary table amended accordingly.

- Page 51 (second paragraph) added to discuss stop-start technology and that drivers of older vehicles should be encouraged to switch off their engines in traffic and let right-turners cross.
- Page 51 (third paragraph) second sentence amended to include *'erection of road signage'*.
- Page 54 (third paragraph) added *'Hertfordshire County Council is currently investigating measures to improve the pedestrian walking routes in the area around Durrants Hill Road.'*
- Page 56 (second paragraph) added to include comments from consultation feedback (e.g. need for more cycle lanes, maintenance of roads, pavements and towpaths and road safety issues).
- Page 56 (fifth paragraph) added *'Approximately 60 per cent of Dacorum Borough Council Civic Centre employees live within a three mile radius. The Council recognises this as an opportunity to encourage staff to walk/cycle to work.'* Corresponding summary table amended accordingly.
- Page 60 (third, fourth and fifth paragraphs) added to acknowledge barriers (public transport more expensive and less convenience than car), access and timetabling issues, potential funding cuts and the need for real time bus indicators. Corresponding summary table amended accordingly.
- Page 61 summary table amended to reflect that the Council will support and promote all bus routes (e.g. M1/M2).
- Page 63 Table 5.1 updated with amended measure titles.
- Where possible, actions have been given specific target dates for potential completion.
- Page 71 (sixth paragraph) last sentence amended to reflect the new subsidy approach *'The cost implications to the Council would be low, thus the measure is considered to be less cost-effective.'* Table D.2 amended accordingly.

- Chapter 9 consultation outcomes included (with graphs and discussion).
- Page 89 (third paragraph) sentence added *'This report represents the first three years of a long-term plan to improve air quality with the borough. The Plan will be revised on a three yearly cycle (or earlier if deemed necessary).'*

10 Conclusions

This Action Plan describes the air quality assessment process that has taken place in Dacorum to date. It identifies the role of traffic in the current problem and sets out a range of transport-focussed measures that could help improve air quality. In total, twenty measures have been put forward for implementation.

The objective of this Action Plan is to improve air quality within the three AQMAs and borough as a whole to work towards meeting the national air quality objective for the protection of human health. To this end, where possible targets for the measures have been estimated and indicators to demonstrate progress have been identified. Prior to the implementation of this Action Plan a consultation process was undertaken. The Action Plan was amended as appropriate following receipt of comments, prior to formal adoption.

This report represents the first three years of a long-term plan to improve air quality within the borough. The Plan will be revised on a three yearly cycle (or earlier if deemed necessary). The Action Plan will be monitored annually and the results collated for the yearly progress report on the implementation of the plan.

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12 Glossary

ANPR	Automatic Number Plate Recognition
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objectives
AURN	Automatic Urban and Rural Network
CHP	Combined Heat and Power Plant
DBC	Dacorum Borough Council
DEFRA	Department for Environment, Food and Rural Affairs
EIA	Environmental Impact Assessment
EPUK	Environmental Protection UK
EV	Electric Vehicles
HCC	Hertfordshire County Council
HGV	Heavy Goods Vehicles
HWBB	Health and Wellbeing Board
JSNA	Joint Strategic Needs Assessment
LAQM	Local Air Quality Management
LDF	Local Development Framework
LGV	Light Good Vehicles
LTP	Local Transport Plan
LSTF	Local Sustainable Transport Fund
NO _x	Nitrogen oxides (Nitrogen oxide and Nitrogen dioxide)
NO ₂	Nitrogen dioxide
NPPF	National Planning Framework
PAN	Planning Advice Note
PCI	Public Charging Infrastructure (Electric Vehicles)
PHOF	Public Health Outcomes Framework
PM	Particulate Matter
PM _{2.5}	Particulate Matter (of 2.5µm or less)
PM ₁₀	Particulate Matter (of 10µm or less)
PPS 23	Planning Policy Statement 23 - Planning and Pollution Control
PSV	Public Service Vehicles (Buses)
SPD	Supplementary Planning Document
UTP	Urban Transport Plan
µg/m ³	Micrograms per cubic metre

Appendices

Appendix A: Air Quality Objectives

Appendix B: NO₂ Monitoring Locations 2014

Appendix C: Air Quality Management Areas

Appendix D: Development of options and measures

Appendix E: Consultation Online Survey Results

Appendix A

Air Quality Objectives

Table A.1 - Air Quality Objectives included in Regulations for the purpose of LAQM in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m ³	Running annual mean	31.12.2003
	5.00 µg/m ³	Annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m ³	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m ³	Annual mean	31.12.2004
	0.25 µg/m ³	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀) (gravimetric)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m ³	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

Appendix B

NO₂ Monitoring Locations 2014

Table B.1 - NO₂ Diffusion Tube Monitoring Locations 2014

Site ID	Site Name	Site Type	Grid Reference (X)	Grid Reference (Y)	In AQMA	Triplicate or Co-located
DC40	Sawyers Way, Hemel Hempstead	Background	506780	207180	No	No
DC42	Wood Lane End, Hemel Hempstead	Background	508177	207934	No	No
DC46	High Street, Bovingdon	Kerbside	501541	203659	No	No
DC47	High Street, Berkhamsted	Roadside	499365	207724	No	No
DC48	Prince Edward Street, Berkhamsted	Background	499207	207754	No	No
DC50	High Street, Northchurch	Roadside	497346	208835	Yes	Triplicate
DC51	Brook Street, Tring	Kerbside	492552	211824	No	No
DC52	High Street, Tring	Roadside	492335	211386	No	No
DC54	Watford Road, Kings Langley	Roadside	507606	201624	No	No
DC55	High Street, Kings Langley	Roadside	507184	202690	No	No
DC57	Lawn Lane 1 Hemel Hempstead	Roadside	505923	205761	Yes	Triplicate
DC58	Gammons Close, Hemel Hempstead	Background	507058	206727	No	No
DC59	Wadley Close, Hemel Hempstead	Background	506981	206829	No	No
DC60	Field Road, Hemel Hempstead	Background	507483	206898	No	No
DC61	St Agnells Lane, Hemel Hempstead	Roadside	507121	209252	No	No
DC62	New Road, Northchurch	Roadside	497335	208860	Yes	Triplicate
DC63	Darrs Lane, Northchurch	Roadside	497264	208927	Yes	No
DC64	Lawn Lane 2, Hemel Hempstead	Roadside	505969	205726	Yes	Triplicate
DC65	Lawn Lane 3, Hemel Hempstead	Roadside	505930	205740	Yes	Triplicate
DC66	London Road, Apsley	Roadside	505674	205514	Yes	Triplicate
DC67	Allandale	Roadside	505948	207814	No	No
DC68	Belswains Sappi	Roadside	507005	204677	No	No

Site ID	Site Name	Site Type	Grid Reference (X)	Grid Reference (Y)	In AQMA	Triplicate or Co-located
DC69	Lawn Lane, Belswains	Background	506053	205664	No	No
DC70	Lawn Lane 4, Hemel Hempstead	Roadside	505888	205801	No	No
DC71	Orchard Street	Kerbside	505636	205504	No	No
DC73	Durrants Hill Road	Roadside	505734	205519	Yes	Triplicate
DC74	Avia Close	Roadside	505841	205395	Yes	No
DC75	The Meads	Roadside	497472	208730	No	No
DC76	The Cotterells	Kerbside	505355	206504	No	No
DC81	Sappi 2	Roadside	507122	204470	No	No
DC85	Health Centre, London Road	Kerbside	505663	205528	Yes	Triplicate
DC86	Northchurch 1	Roadside	497295	208901	Yes	Triplicate & Co-located
DC87	Northchurch 2	Roadside	497295	208901	Yes	Triplicate & Co-located
DC88	Northchurch 3	Roadside	497295	208901	Yes	Triplicate & Co-located
DC89	High Street, Markyate	Roadside	506227	216317	No	No
DC90	High Street, Northchurch A	Roadside	497346	208835	Yes	Triplicate
DC91	High Street, Northchurch B	Roadside	497346	208835	Yes	Triplicate
DC92	New Road, Northchurch A	Roadside	497335	208860	Yes	Triplicate
DC93	New Road, Northchurch B	Roadside	497335	208860	Yes	Triplicate
DC94	Health Centre, London Road A	Kerbside	505663	205528	Yes	Triplicate
DC95	Health Centre, London Road B	Kerbside	505663	205528	Yes	Triplicate
DC96	Durrants Hill Road A	Roadside	505734	205519	Yes	Triplicate
DC97	Durrants Hill Road B	Roadside	505734	205519	Yes	Triplicate
DC98	London Road Apsley A	Roadside	505674	205514	Yes	Triplicate
DC99	London Road Apsley B	Roadside	505674	205514	Yes	Triplicate
DC100	Lawn Lane 1A	Roadside	505923	205761	Yes	Triplicate

Site ID	Site Name	Site Type	Grid Reference (X)	Grid Reference (Y)	In AQMA	Triplicate or Co-located
DC101	Lawn Lane 1B	Roadside	505923	205761	Yes	Triplicate
DC102	Lawn Lane 2A	Roadside	505969	205726	Yes	Triplicate
DC103	Lawn Lane 2B	Roadside	505969	205726	Yes	Triplicate
DC104	Lawn Lane 3A	Roadside	505930	205740	Yes	Triplicate
DC105	Lawn Lane 3B	Roadside	505930	205740	Yes	Triplicate
DC106	Outside 24 Cotterells	Background	505333	207006	No	No
DC107	Marlowes Roundabout	Roadside	505521	207612	No	No
DC108	Old Town Hemel Hempstead	Background	505476	207985	No	No
DC109	St Marys 1	Background	499373	208847	No	No
DC110	St Marys 2	Roadside	497368	208830	No	No
DC111	St Marys 3	Roadside	497360	208842	No	No
DC112	High Street, Markyate 2	Roadside	506091	216503	No	No
DC113	Chapel Street, Berkhamsted	Background	499475	207854	No	No
DC114	Lower Kings Road, Berkhamsted	Roadside	499127	207935	No	No
DC115	Kings Road, Berkhamsted	Roadside	498886	207519	No	No
DC116	Castle Street, Berkhamsted	Background	499441	207836	No	No
DC117	High Street, Berkhamsted 2	Roadside	498991	207925	No	No
DC118	Outside 158 Marlowes	Background	505535	207036	No	No
DC119	The Point 1	Roadside	505521	206328	No	Triplicate
DC120	The Point 2	Roadside	505521	206328	No	Triplicate
DC121	The Point 3	Roadside	505521	206328	No	Triplicate
DC122	Bridge Street, Hemel Hempstead	Roadside	505503	206926	No	No

Appendix C

Air Quality Management Areas

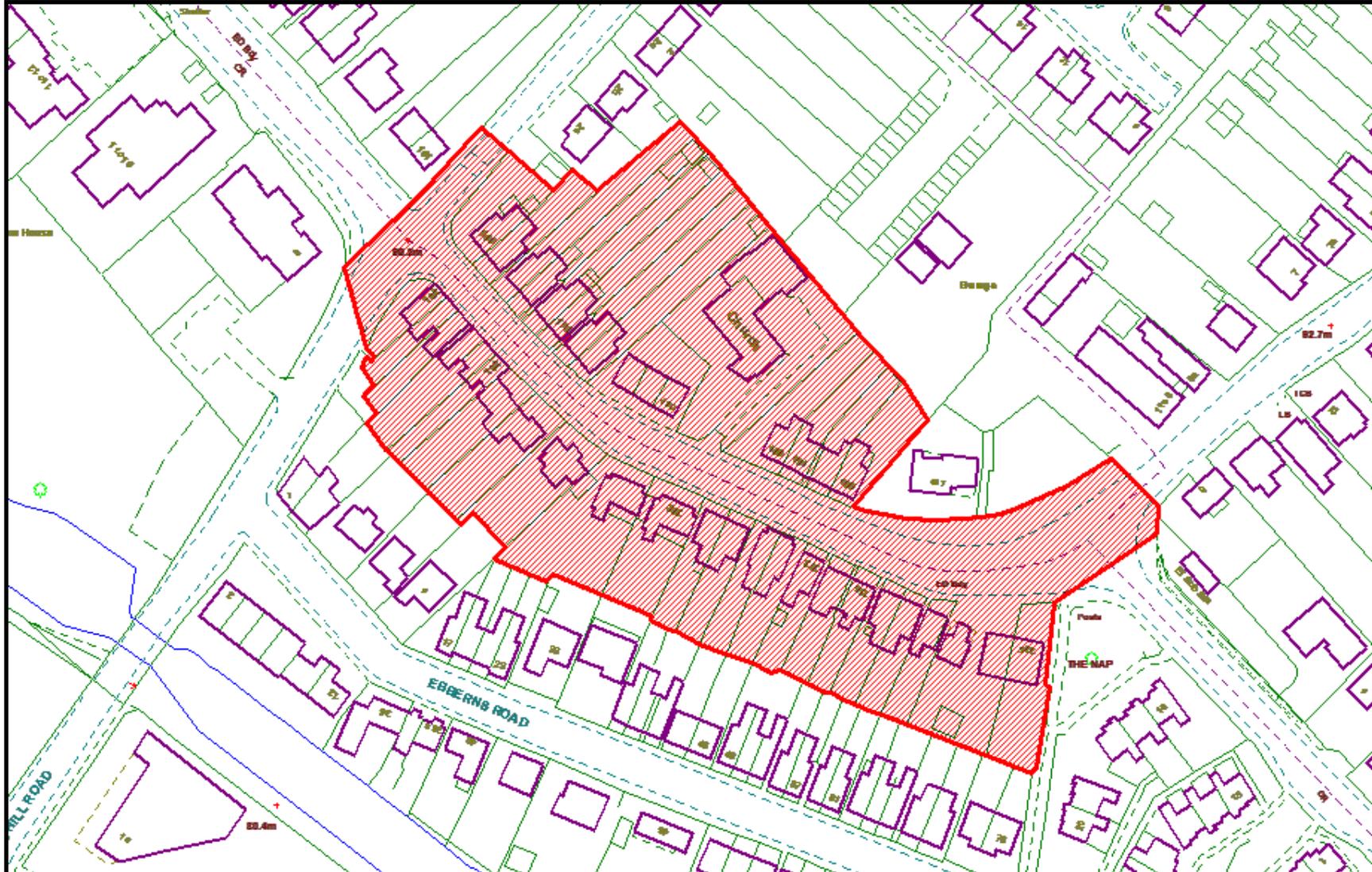


Figure C.1 AQMA 1 Lawn Lane, Hemel Hempstead

Table C.1 – Residential properties within the boundary of AQMA 1 Lawn Lane, Hemel Hempstead

House Name / No.	Street	Town	Postcode
198	Lawn Lane	Hemel Hempstead	HP3 9JF
222	Lawn Lane	Hemel Hempstead	HP3 9JF
212	Lawn Lane	Hemel Hempstead	HP3 9JF
224a	Lawn Lane	Hemel Hempstead	HP3 9JF
206	Lawn Lane	Hemel Hempstead	HP3 9JF
208b	Lawn Lane	Hemel Hempstead	HP3 9JF
210b	Lawn Lane	Hemel Hempstead	HP3 9JF
210c	Lawn Lane	Hemel Hempstead	HP3 9JF
208c	Lawn Lane	Hemel Hempstead	HP3 9JF
206c	Lawn Lane	Hemel Hempstead	HP3 9JF
Flat 3 224	Lawn Lane	Hemel Hempstead	HP3 9BU
Flat 1 224	Lawn Lane	Hemel Hempstead	HP3 9BU
210a	Lawn Lane	Hemel Hempstead	HP3 9JF
208a	Lawn Lane	Hemel Hempstead	HP3 9JF
206b	Lawn Lane	Hemel Hempstead	HP3 9JF
Flat 2 224	Lawn Lane	Hemel Hempstead	HP3 9BU
216	Lawn Lane	Hemel Hempstead	HP3 9JF
163	Lawn Lane	Hemel Hempstead	HP3 9JF
218	Lawn Lane	Hemel Hempstead	HP3 9JF
204	Lawn Lane	Hemel Hempstead	HP3 9JF
200	Lawn Lane	Hemel Hempstead	HP3 9JF
165	Lawn Lane	Hemel Hempstead	HP3 9JF
214	Lawn Lane	Hemel Hempstead	HP3 9JF
220	Lawn Lane	Hemel Hempstead	HP3 9JF
226	Lawn Lane	Hemel Hempstead	HP3 9JF

House Name / No.	Street	Town	Postcode
202	Lawn Lane	Hemel Hempstead	HP3 9JF
191	Lawn Lane	Hemel Hempstead	HP3 9JF
194	Lawn Lane	Hemel Hempstead	HP3 9JF
183	Lawn Lane	Hemel Hempstead	HP3 9JF
182	Lawn Lane	Hemel Hempstead	HP3 9JF
188	Lawn Lane	Hemel Hempstead	HP3 9JF
175	Lawn Lane	Hemel Hempstead	HP3 9JF
184	Lawn Lane	Hemel Hempstead	HP3 9JF
189	Lawn Lane	Hemel Hempstead	HP3 9JF
169	Lawn Lane	Hemel Hempstead	HP3 9JF
192	Lawn Lane	Hemel Hempstead	HP3 9JF
196	Lawn Lane	Hemel Hempstead	HP3 9JF
186	Lawn Lane	Hemel Hempstead	HP3 9JF
171	Lawn Lane	Hemel Hempstead	HP3 9JF
179	Lawn Lane	Hemel Hempstead	HP3 9JF
177	Lawn Lane	Hemel Hempstead	HP3 9JF
181	Lawn Lane	Hemel Hempstead	HP3 9JF
167	Lawn Lane	Hemel Hempstead	HP3 9JF
173	Lawn Lane	Hemel Hempstead	HP3 9JF
190	Lawn Lane	Hemel Hempstead	HP3 9JF
195 Treborina Cottage	Lawn Lane	Hemel Hempstead	HP3 9JF
193	Lawn Lane	Hemel Hempstead	HP3 9JF



Figure C.2 AQMA 2 London Road, Apsley

Table C.2 Residential properties within the boundary of AQMA 2 London Road, Apsley

House Name / No.	Street	Town	Postcode
Flat above 42 Highclere Financial Services	London Road	Hemel Hempstead	HP3 9SB
38a Air Salons	London Road	Hemel Hempstead	HP3 9SB
66b	London Road	Hemel Hempstead	HP3 9SD
70	London Road	Hemel Hempstead	HP3 9SD
Flat 62 The Bull	London Road	Hemel Hempstead	HP3 9SD
215	London Road	Hemel Hempstead	HP3 9SE
201a	London Road	Hemel Hempstead	HP3 9SE
219a	London Road	Hemel Hempstead	HP3 9SE
203	London Road	Hemel Hempstead	HP3 9SE
80a	London Road	Hemel Hempstead	HP3 9SD
207a	London Road	Hemel Hempstead	HP3 9SE
Flat 28 Apsley Chinese Takeaway	London Road	Hemel Hempstead	HP3 9SB
209	London Road	Hemel Hempstead	HP3 9SE
197	London Road	Hemel Hempstead	HP3 9SE
72a	London Road	Hemel Hempstead	HP3 9SD
205a	London Road	Hemel Hempstead	HP3 9SE
Flat 44 The White Lion	London Road	Hemel Hempstead	HP3 9SB
20a	London Road	Hemel Hempstead	HP3 9SB
207	London Road	Hemel Hempstead	HP3 9SE
Flat above 40 Apsley Fish And Chips	London Road	Hemel Hempstead	HP3 9SB
Flat 3 Manila House	Sealy Way	Hemel Hempstead	HP3 9HP
94a	London Road	Hemel Hempstead	HP3 9SD
199a	London Road	Hemel Hempstead	HP3 9SE
92a	London Road	Hemel Hempstead	HP3 9SD
Flat Above 98 Efeler	London Road	Hemel Hempstead	HP3 9SD

House Name / No.	Street	Town	Postcode
201	London Road	Hemel Hempstead	HP3 9SE
108A	London Road	Hemel Hempstead	HP3 9SD
96A	London Road	Hemel Hempstead	HP3 9SD
48A	London Road	Hemel Hempstead	HP3 9SB
26A	London Road	Hemel Hempstead	HP3 9SB
46A	London Road	Hemel Hempstead	HP3 9SB
80B	London Road	Hemel Hempstead	HP3 9SD
Flat	London Road	Hemel Hempstead	HP3 9SB
Flat Above 54 Corals	London Road	Hemel Hempstead	HP3 9SB
Flat 4 Manila House	Sealy Way	Hemel Hempstead	HP3 9HP
199	London Road	Hemel Hempstead	HP3 9SE
197a	London Road	Hemel Hempstead	HP3 9SE
22a	London Road	Hemel Hempstead	HP3 9SB
211a	London Road	Hemel Hempstead	HP3 9SE
219	London Road	Hemel Hempstead	HP3 9SE
76a	London Road	Hemel Hempstead	HP3 9SD
149a	London Road	Hemel Hempstead	HP3 9SQ
Flat 1	Sealy Way	Hemel Hempstead	HP3 9HP
209A	London Road	Hemel Hempstead	HP3 9SE
78A	London Road	Hemel Hempstead	HP3 9SD
211	London Road	Hemel Hempstead	HP3 9SE
Flat Above 104	London Road	Hemel Hempstead	HP3 9SD
74A	London Road	Hemel Hempstead	HP3 9SD
203A	London Road	Hemel Hempstead	HP3 9SE
Flat 1 36	London Road	Hemel Hempstead	

House Name / No.	Street	Town	Postcode
Flat 2 Manila House	Sealy Way	Hemel Hempstead	HP3 9HP
24A	London Road	Hemel Hempstead	HP3 9SB
82	London Road	Hemel Hempstead	HP3 9SD
205	London Road	Hemel Hempstead	HP3 9SE
52	London Road	Hemel Hempstead	HP3 9SB
195A	London Road	Hemel Hempstead	HP3 9SE
18B	London Road	Hemel Hempstead	HP3 9SB
66A	London Road	Hemel Hempstead	HP3 9SD
106	London Road	Hemel Hempstead	HP3 9SD
122	London Road	Hemel Hempstead	HP3 9SD
116	London Road	Hemel Hempstead	HP3 9SD
114	London Road	Hemel Hempstead	HP3 9SD
120	London Road	Hemel Hempstead	HP3 9SD
147	London Road	Hemel Hempstead	HP3 9SQ
145	London Road	Hemel Hempstead	HP3 9SQ
118	London Road	Hemel Hempstead	HP3 9SD



Figure C.3 AQMA 3 High Street, Northchurch (prior to boundary change)

Table C.3 Residential properties within the boundary of AQMA 3 High Street, Northchurch (prior to boundary change)

House Name / No.	Street	Town	Postcode
91	High Street	Northchurch	HP4 3QL
116A	High Street	Northchurch	HP4 3QN
116B	High Street	Northchurch	HP4 3QN
Flat 2 97	High Street	Northchurch	HP4 3QL
2 Tudor Orchard	High Street	Northchurch	HP4 3QP
Flat 3 97	High Street	Northchurch	HP4 3QL
Flat 1 97	High Street	Northchurch	HP4 3QL
3 Tudor Orchard	High Street	Northchurch	HP4 3QP
1 Tudor Orchard	High Street	Northchurch	HP4 3QP
4 Tudor Orchard	High Street	Northchurch	HP4 3QP
99	High Street	Northchurch	HP4 3QL
101	High Street	Northchurch	HP4 3QL
123 125	High Street	Northchurch	HP4 3QL
113 Vale House	High Street	Northchurch	HP4 3QL
3 Wellington House Exhims Mews	Darrs Lane	Northchurch	HP4 3RA
110	High Street	Northchurch	HP4 3QN
106	High Street	Northchurch	HP4 3QN
1 Exhims Mews	Darrs Lane	Northchurch	HP4 3RA
119	High Street	Northchurch	HP4 3QL
108	High Street	Northchurch	HP4 3QN
89	High Street	Northchurch	HP4 3QL
19	Chapel Crofts	Northchurch	HP4 3XG

House Name / No.	Street	Town	Postcode
114	High Street	Northchurch	HP4 3QN
Flat 4 97	High Street	Northchurch	HP4 3QL
2 Exhims Mews	Darrs Lane	Northchurch	HP4 3RA
111	High Street	Northchurch	HP4 3QL
95	High Street	Northchurch	HP4 3QL
121	High Street	Northchurch	HP4 3QL
93	High Street	Northchurch	HP4 3QL
109	High Street	Northchurch	HP4 3QL
2	New Road	Northchurch	HP4 3QY
117	High Street	Northchurch	HP4 3QL
104	High Street	Northchurch	HP4 3QN
115	High Street	Northchurch	HP4 3QL
112	High Street	Northchurch	HP4 3QN

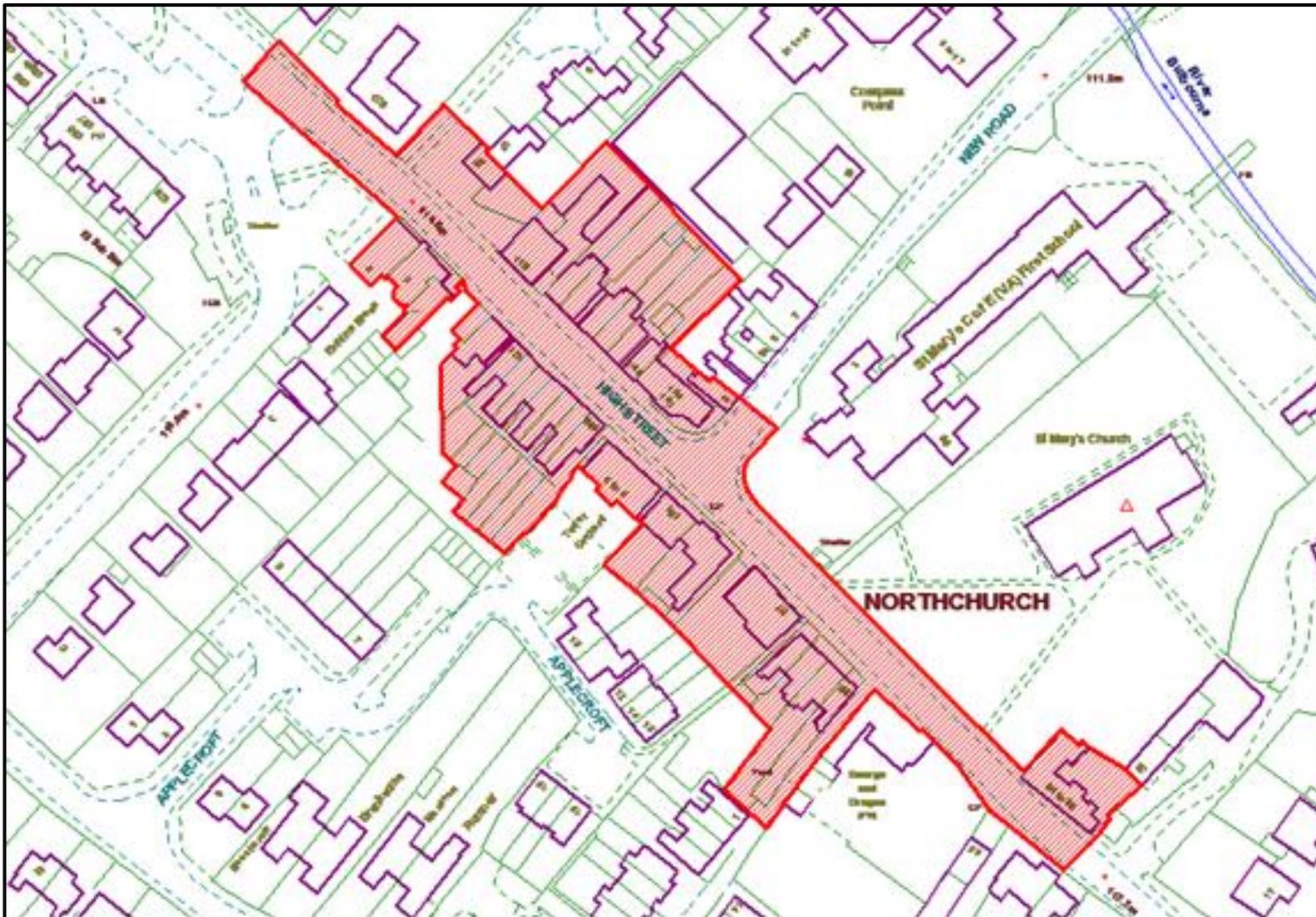


Figure C.4 AQMA 3a High Street, Northchurch (after boundary change)

Table C.4 Residential properties within the boundary of AQMA 3a High Street, Northchurch (after boundary change)

House Name / No.	Street	Town	Postcode
91	High Street	Northchurch	HP4 3QL
116A	High Street	Northchurch	HP4 3QN
116B	High Street	Northchurch	HP4 3QN
Flat 2 97	High Street	Northchurch	HP4 3QL
2 Tudor Orchard	High Street	Northchurch	HP4 3QP
Flat 3 97	High Street	Northchurch	HP4 3QL
Flat 1 97	High Street	Northchurch	HP4 3QL
3 Tudor Orchard	High Street	Northchurch	HP4 3QP
1 Tudor Orchard	High Street	Northchurch	HP4 3QP
4 Tudor Orchard	High Street	Northchurch	HP4 3QP
99	High Street	Northchurch	HP4 3QL
101	High Street	Northchurch	HP4 3QL
84	High Street	Northchurch	HP4 3QN
123 125	High Street	Northchurch	HP4 3QL
113 Vale House	High Street	Northchurch	HP4 3QL
3 Wellington House Exhims Mews	Darrs Lane	Northchurch	HP4 3RA
88	High Street	Northchurch	HP4 3QN
110	High Street	Northchurch	HP4 3QN
96	High Street	Northchurch	HP4 3QN
106	High Street	Northchurch	HP4 3QN
1 Exhims Mews	Darrs Lane	Northchurch	HP4 3RA
119	High Street	Northchurch	HP4 3QL
94	High Street	Northchurch	HP4 3QN
108	High Street	Northchurch	HP4 3QN
89	High Street	Northchurch	HP4 3QL

House Name / No.	Street	Town	Postcode
19	Chapel Crofts	Northchurch	HP4 3XG
114	High Street	Northchurch	HP4 3QN
92	High Street	Northchurch	HP4 3QN
Flat 4 97	High Street	Northchurch	HP4 3QL
2 Exhims Mews	Darrs Lane	Northchurch	HP4 3RA
111	High Street	Northchurch	HP4 3QL
95	High Street	Northchurch	HP4 3QL
121	High Street	Northchurch	HP4 3QL
93	High Street	Northchurch	HP4 3QL
109	High Street	Northchurch	HP4 3QL
2	New Road	Northchurch	HP4 3QY
117	High Street	Northchurch	HP4 3QL
104	High Street	Northchurch	HP4 3QN
115	High Street	Northchurch	HP4 3QL
86	High Street	Northchurch	HP4 3QN
90	High Street	Northchurch	HP4 3QN
112	High Street	Northchurch	HP4 3QN

Appendix D

Development of options and measures

Table D.1 - Initial assessment of proposed measures

Options	Steering group comments	Outcome
Strategic Actions		
Improve links with the Local Transport Plan	Strategic measures that would benefit plan. Source of air quality problem is road traffic related, so this option is particularly relevant.	Shortlisted
Improve links with the Local Planning and Development Framework	Strategic measures that would benefit plan. Potential introduction of regional SPD / Technical Guidance.	Shortlisted
Improve links with Public Health	Strategic measures that would benefit plan.	Shortlisted
Road user charging	Not viable.	Rejected
Road signage to indicate presence of AQMAs	Minimal benefit. Potential blight to residents.	Rejected
Move receptors away from AQMAs		
Remove homes and businesses	Not practicable. No emission reduction.	Rejected
Move sources away from AQMAs		
Pedestrianisation of AQMAs	Unsuitable as AQMAs are important through roads. More generally suited to town centre areas. Alternative route would need to be made available. Likely to increase traffic in near vicinity.	Rejected
Relief Road/Bypass	New roads often induce new traffic. Potential to generate new exposure. Very expensive to implement new infrastructure projects. Link Road between Billet Lane and New Road, Northchurch not supported by Hertfordshire County Council. This scheme is not contained within the current version of the Tring, Northchurch and Berkhamsted UTP.	Rejected
Optimisation of traffic movement through AQMAs		
Traffic signal phasing	Likely to benefit Lawn Lane, Hemel Hempstead and London Road, Apsley AQMAs. Potential high impact, direct measure however further investigation required in order to assess benefit.	On hold

Options	Steering group comments	Outcome
Optimisation of traffic movement through AQMAs (continued)		
Amendments to current road layouts	Likely to benefit Lawn Lane, Hemel Hempstead and London Road, Apsley AQMAs. Potential high impact, direct measure however further investigation required in order to assess benefit.	On hold
Junction Investigations	Will provide information to target future measures.	Shortlisted
ANPR Traffic Survey	Will provide information to target future measures.	Shortlisted
Congestion Study	Will provide information to target future measures.	Shortlisted
Road signage improvements	Likely to reduce through traffic.	Shortlisted
Potential relocation of bus stop	Likely to reduce queuing in High Street, Northchurch AQMA.	Shortlisted
Determine significance of school traffic	Will provide information to target future measures.	Shortlisted
Potential removal of on-street parking	Feasible. Likely to reduce queuing in AQMA.	Shortlisted
Reducing transport emissions		
Vehicle emissions testing	Lack of resource for enforcement.	Rejected
Idling vehicle enforcement	Lack of resource for enforcement.	Rejected
Green incentives for taxi drivers	Proposed approach already implemented in St Albans. Discuss with Dacorum Borough Council Licensing Department.	Shortlisted
Reducing emissions from LGVs within AQMAs	Relevant to source apportionment	Shortlisted
Development of a Local Bus Quality Partnership	Hertfordshire County Council Bus Strategy already has aims re: emission reduction etc. Specific measure not required in this Plan.	Rejected

Options	Steering group comments	Outcome
Reducing transport emissions (continued)		
Reducing emissions from Council fleet	Very important for Council to lead by example. Refuse fleet currently being replaced with Euro VI standard vehicles. Software in use to minimise mileage. Emission limits on lease cars and car loan schemes, regularly reviewed. Corporate Travel Plan. Sustainable Transport Policy. Opportunities for further improvements.	Shortlisted
Fleet/fuel monitoring of Council vehicles	Incorporate with reducing emission from Council fleet. No need for specific measure within Plan.	Rejected
Promote car share schemes	Viable. To increase uptake of existing schemes.	Shortlisted
Encourage smarter driving	Awareness campaign and training.	Shortlisted
Promotion of electric vehicles (EV)	Encourage uptake and promote current infrastructure.	Shortlisted
Promoting Sustainable Transport Options		
Promotion of travel plans	Increase awareness and encourage modal shift.	Shortlisted
Promotion of walking and cycling	Increase awareness and encourage modal shift.	Shortlisted
Encouraging the use of public transport	Increase awareness and encourage modal shift.	Shortlisted
Promotion of TravelSmart	Current project in Hemel Hempstead. Scope for other areas of borough. Previous projects have been successful in creating modal shift.	Shortlisted
Towpath improvements	Combine with promotion of walking and cycling. No need for specific measure within Plan.	Rejected
Other		
Home Energy Efficiency	Not significant in terms of existing problem. Dealt with via HECA.	Rejected

Options	Steering group comments	Outcome
Other (continued)		
Enforcement within Smoke Control Areas	Regulated by separate legislation (Clean Air Act 1993).	Rejected
Environmental Nuisance (including bonfires)	Regulated by separate legislation (Environmental Protection Act 1990)	Rejected
Controlling industrial air pollution emissions	Regulated by separate legislation (Environmental Permitting Regulations 2010 (as amended))	Rejected
Reporting of smoky vehicles	Place link to online reporting form on AQ webpage. No need to be specific measure within this plan.	Rejected
Promote air quality issues	Council already has dedicated webpage for air quality. All LAQM reports available online. Hertfordshire and Bedfordshire Air Quality Network webpage also provides a significant amount of data.	Rejected
Continue to monitor air pollution	Ongoing. Monitoring locations regularly reviewed.	Rejected
Reintroduction of 'AirAlert'	Regional project, with other Hertfordshire authorities. Aiming to attract Public Health funding. No need to be separate measure within this plan.	Rejected

Table D.2 Further assessment of short-listed measures

Measure	Potential AQ impact	Cost to implement	Cost effectiveness	Co-environmental benefits, social and economic impacts	Risk factors	Feasibility / Acceptability
Strategic actions						
Improve links with the Local Transport Plan				Reduction in other AQ pollutants and GHGs.	Care to avoid relocating pollution	Short term / Acceptable
Improve links with the Local Planning and Development Framework				Reduction in other AQ pollutants and GHGs.	Care to avoid relocating pollution	Short term / Acceptable
Improve links with Public Health				Improvements to public health through reductions in air pollution related illness. Improvements in levels of awareness and understanding.	None identified	Short term / Acceptable
Optimisation of traffic flow through AQMAs						
Junction Investigations	N/A	Low	N/A	None identified	None identified	Short term / Acceptable
ANPR traffic survey	N/A	Medium	N/A	None identified	None identified	Short term / Acceptable
Congestion study	N/A	Low	N/A	None identified	None identified	Short term / Acceptable
Road signage improvements	Medium	Low	Medium	Reduction in other AQ pollutants, GHGs and noise.	Avoid relocation of pollution.	Medium term / Acceptable
Potential relocation of bus stop	Large	Medium	Medium	Reduction in other AQ pollutants and GHGs.	Avoid relocating pollution. Not likely to be welcomed by residents.	Short - medium term/ Acceptable
Determine significance of school traffic	N/A	Neutral	N/A	Reduction in other AQ pollutants, GHGs and noise.	None identified	Short term / Acceptable
Potential removal of on-street parking	Large	Low	High	Reduction in other AQ pollutants and GHGs	Not likely to be welcomed. Road safety/speeding.	Medium term / Acceptable
Reducing transport emissions						
Promote the use of electric vehicles (EV)	Small	Low	Low	Reduction in other AQ pollutants and GHGs.	None identified	Long term / Acceptable
Promote care share schemes	Medium	Low	Medium	Reduction in other AQ pollutants and GHGs. Cut congestion.	Personal safety issues	Short term / Acceptable

Measure	Potential AQ impact	Cost to implement	Cost effectiveness	Co-environmental benefits, social and economic impacts	Risk factors	Feasibility / Acceptability
Reducing transport emissions (continued)						
Green incentives for taxi drivers	Small	Low	Low	Reduction in other AQ pollutants and GHGs.	None identified	Unknown at present
Reducing emissions from LGVs within the AQMAs	Medium	Low	Medium	Reduction in other AQ pollutants and GHGs. Reduce congestion.	Potential financial impact on companies.	Medium term / Acceptable
Reducing emissions from Council Fleet	Small	Medium	Low	Reduction in other AQ pollutants and GHGs. Fuel saving for Council.	None identified	Short – medium term Acceptable
Encouraging smarter driving	Medium	Low	Medium	Reduction in other AQ pollutants, GHGs and noise.	None identified	Short term / Acceptable
Promoting sustainable transport options						
Promote travel planning	Medium	Low	Medium	Reduction in other AQ pollutants, GHGs and noise. Health and financial benefits. Cut congestion.	None identified	Short term / Acceptable
Promotion of walking and cycling	Medium	Low	Medium	Encourages sustainable and healthy modes of transport. Reduce traffic congestion. Reduces other AQ pollutants and GHGs. Cut congestion.	Potential road safety issues	Short-medium term / Acceptable
Promote the use of public transport	Medium	Low	Medium	Reduction in other AQ pollutants, GHGs and noise. Cut congestion.	None identified	Short – medium term / acceptable
Promotion of TravelSmart	Medium	Low	Medium	Reduction in other AQ pollutants, GHGs and noise. Health and financial benefits. Cut congestion.	Potential road safety issues	Short – medium term / Acceptable

Appendix E

Consultation Online Survey Results



Draft Air Quality Action Plan 2014/17 Consultation

Please read the supporting documents before completing this survey

Closing date for receipt of all responses is Sunday 26 October 2014.

Air pollution has a well understood negative impact on human health and the surrounding environment. Tackling air pollution is about preventing ill health, improving health and life expectancies, and benefiting our environment and quality of life.

The Government has set air quality standards for certain air pollutants to protect public health. The Council undertakes monitoring of the main local air pollutants associated with urban areas: nitrogen oxides (NO_x; consisting of nitrogen oxide (NO) and nitrogen dioxide (NO₂)). Monitoring has identified three areas within the borough where the air quality objective for nitrogen dioxide is not being met, these are:

- Lawn Lane, Hemel Hempstead
- London Road, Apsley
- High Street, Northchurch

In June 2012, these areas were formally declared as 'Air Quality Management Areas'.

What can be done?

In response, a draft Air Quality Action Plan has been produced outlining the measures the Council intends to implement in order to improve air quality within these Air Quality Management Areas and the borough as a whole. The measures are principally targeted towards reducing pollution from road traffic as this is the principal source of nitrogen dioxide. We are legally required to produce an Air Quality Action Plan to address the sources of poor air quality. The Air Quality Action Plan is a live, working document so will be continually reviewed and updated.

The draft Air Quality Action Plan will be subject to an 8 week consultation period, which will run until 26 October 2014. As part of this process the Council must consult with a number of statutory consultees and other bodies and organisations as appropriate. In addition to the main report, the Council has also created a short Summary Document, which highlights the key points of the draft Air Quality Action Plan.

What can be done?

In response, a draft Air Quality Action Plan has been produced outlining the measures the Council intends to implement in order to improve air quality within these Air Quality Management Areas and the borough as a whole. The measures are principally targeted towards reducing pollution from road traffic as this is the principal source of nitrogen dioxide. We are legally required to produce an Air Quality Action Plan to address the sources of poor air quality. The Air Quality Action Plan is a live, working document so will be continually reviewed and updated.

The draft Air Quality Action Plan has an 8 week consultation period, which will run until 26 October 2014. As part of this process the Council must consult with a number of statutory consultees and other bodies and organisations as appropriate. In addition to the main report, the Council has also created a short Summary Document, which highlights the key points of the draft Air Quality Action Plan.

We need your views

We would like to hear your views and comments on the measures we are proposing to improve local air quality over the next few years.

Q1 Do you live or run a business situated within an Air Quality Management Area (Lawn Lane, Hemel Hempstead)/ London Road, Apsley/ High Street, Northchurch)?

20 (35.7%) Yes

36 (64.3%) No

Do you agree or disagree that the proposed measures are likely to improve air quality within the Air Quality Management Areas and the borough as a whole?

Q2 Package of Measures 1. Reducing emissions via strategic measures

	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
Improve links with the Local Transport Plan	19 (33.9%)	24 (42.9%)	5 (8.9%)	2 (3.6%)	6 (10.7%)
Improve links with the Local Planning and Development Framework	17 (30.4%)	27 (48.2%)	5 (8.9%)	2 (3.6%)	5 (8.9%)
Improve links with Public Health	17 (30.4%)	27 (48.2%)	4 (7.1%)	3 (5.4%)	5 (8.9%)

Do you agree or disagree that the proposed measures are likely to improve air quality within the Air Quality Management Areas and the borough as a whole?

Q3 Packages of Measures 2: Optimising traffic flow through the AQMAs

	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
Junction investigations	23 (41.1%)	25 (44.6%)	5 (8.9%)	1 (1.8%)	2 (3.6%)

Automatic Number Plate Recognition (ANPR) traffic study	2 (3.7%)	17 (31.5%)	12 (22.2%)	14 (25.9%)	9 (16.7%)
Congestion study	28 (50.0%)	21 (37.5%)	2 (3.6%)	3 (5.4%)	2 (3.6%)
Road signage improvements	11 (19.6%)	22 (39.3%)	12 (21.4%)	4 (7.1%)	7 (12.5%)
Potential relocation of bus stop	6 (10.9%)	18 (32.7%)	12 (21.8%)	4 (7.3%)	15 (27.3%)
Determining significance of school traffic	21 (37.5%)	23 (41.1%)	3 (5.4%)	2 (3.6%)	7 (12.5%)
Potential removal of on-street parking	8 (14.3%)	18 (32.1%)	12 (21.4%)	11 (19.6%)	7 (12.5%)

Do you agree or disagree that the proposed measures are likely to improve air quality within the Air Quality Management Areas (AQMAs) and the borough as a whole?

Q4 Package of Measures 3: Reducing transport emissions

	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
Promote the use of electric vehicles (EV)	17 (30.4%)	21 (37.5%)	9 (16.1%)	7 (12.5%)	2 (3.6%)
Promote car share schemes	12 (21.4%)	25 (44.6%)	8 (14.3%)	7 (12.5%)	4 (7.1%)
Green incentives for taxi drivers	9 (16.1%)	28 (50.0%)	8 (14.3%)	6 (10.7%)	5 (8.9%)
Reducing emissions from light goods vehicles	18 (32.1%)	28 (50.0%)	5 (8.9%)	2 (3.6%)	3 (5.4%)
Reducing emissions from Council fleet	24 (42.9%)	26 (46.4%)	4 (7.1%)	1 (1.8%)	1 (1.8%)
Encouraging smarter driving i.e. reducing emissions by improving driving skills, undertaking regular car servicing etc	8 (14.3%)	29 (51.8%)	9 (16.1%)	4 (7.1%)	6 (10.7%)

Do you agree or disagree that the proposed measures are likely to improve air quality within the Air Quality Management Areas and the borough as a whole?

Q5 Package of Measures 4: Promoting sustainable transport options

	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
Promoting travel planning	12 (21.8%)	25 (45.5%)	6 (10.9%)	3 (5.5%)	9 (16.4%)
Promote walking and cycling	26 (47.3%)	22 (40.0%)	6 (10.9%)	1 (1.8%)	0 (0.0%)
Promote the use of public transport	20 (35.7%)	23 (41.1%)	10 (17.9%)	2 (3.6%)	1 (1.8%)

Promote TravelSmart projects, individualised travel marketing which aims to reduce car use for local journeys by encouraging walking, cycling and public transport use 20 (35.7%) 22 (39.3%) 7 (12.5%) 2 (3.6%) 5 (8.9%)

Q6 In your opinion, have all potential options to improve air quality been considered?
10 (17.9%) Yes
30 (53.6%) No
16 (28.6%) Don't know

Q7 If you answered 'no', please explain your answer
32 (100.0%)

Q8 In your opinion, do you think the measures have been appropriately prioritised? Please see p11 in the Summary Document and/or the Draft Air Quality Action Plan (Chapter 7 Prioritisation of Measures p69).
14 (25.9%) Yes
16 (29.6%) No
24 (44.4%) Don't know

Q9 If you answered 'no', please explain your answer
16 (100.0%)

Q10 Please use this space to add any further comments you may have about the Draft Air Quality Action Plan
25 (100.0%)

Responses to Question 7:

- *"Cycle Lanes in all areas, we have hardly any!"*
- *"Why do both the council and planning continue to approve major developments in areas that have been shown to have dangerous air quality?"*
- *"What can DBC do when county make ludicrous decisions on school places which increases the volume of cars. We were given a school to which we have to drive to 3 days a week when a closer school would have meant no car journeys at all. We wrote to the council indicating all of this but this wasn't even acknowledged."*
- *"I ticked the no box but really I'm not sure if tree shrub flowers and grass planting can offer any cost effective benefits by absorbing some of the pollution?"*
- *"The real game-changer is to get people on short local journeys such as delivering kids to school to do so in ways other than car transport. School buses, cycling and walking have to be the top priorities."*
- *"Could any areas become one-way? Could road junctions be designed differently?"*
- *"Emissions from individual vehicles are falling. The cause of the problem, like most of our social/environmental problems, is too many people in SE England. The root cause is authorities who accept packing the entire population of the country, and the world, into our area. You are trying to fix one symptom."*
- *"Lot of traffic congestion, pollution occurs at places where there is red traffic light. 1 make a flyover or underpass at junctions 2 install clocks at traffic lights that counts seconds for the light to turn green or red. This is what is installed in other countries. this will allow people to switch off engine"*
- *"You may improve air quality, but by promoting electric vehicles you are encouraging horrendous recycling problems with Electric batteries that are more pollutant to make and recycle, this is bad management for green credentials, other things is Diesel was promoted as better for environment now proven to be bad."*
- *"You must not build any more houses. more houses means more vehicles, which obviously adds to pollution. house building has not been mentioned. wherever you mention the word ""promote this that or the other"" means that more tax payers money will be spent, something that nobody wants."*
- *"Air quality in Northchurch High Street would be greatly improved if the long mooted link road between New Road and Springfield Road were to be constructed."*

- *"Possible electric/gas fleet of the buses? They contribute a significant amount to poor air quality"*
- *"The phasing of traffic lights is a major contribution as large volumes of cars sit at the lights awaiting their turn. Traffic management techniques must be able to improve the traffic flow, minimising waiting times. Installing 'countdown' traffic lights and signage to switch off engines at lights."*
- *"Improvement or/and better maintenance of roads and pavements would promote cycling and walking. Harsher penalties for those vehicles belching out fumes. Lobby manufacturers to make, cleaner vehicles. Repair potholes."*
- *"What part do bonfire and fumes from chimneys play in contributing to poor air quality in surrounding areas? If an area such as those mentioned, has high pollution, do bonfires have an even more negative effect on air quality?"*
- *"Encourage drivers to switch off engines whilst queuing to enter the magic roundabout. Encourage school children and staff to walk/cycle to school (walking busses?). Ban cars from areas around schools during start and end of the school day."*
- *"You must include Lower Kings Road in Berkhamsted and Bridgewater Road. 2 - tier extra car parking next to Waitrose will only encourage yet more traffic. LIDL at the Billett Lane junction will encourage more traffic = congestion too. We need to extend the 20mph limit and cycle lanes throughout Berkhamsted."*
- *"The biggest way to encourage cycling would be implement cycle paths. Cycling on the road with cars is so dangerous for cyclists that it puts me off using a greener/healthier means of getting to places. If there were cycling paths and a good bus service, I would prefer not to have a car."*
- *"The 3 areas are in valleys; the canyon effect. NO₂ is being produced by motor vehicles. To reduce the NO₂ levels the motor vehicles must be prevented from entering these areas. Suggestions: 1 Erect displays of current NO₂ levels so drivers will read them (similar to current speed displays). Character limit hit!"*
- *"The problems are caused by continuous stationary and crawling traffic through Apsley high street. Curtail any further building work, the retail units could be moved somewhere with better accessibility. Construction of another road from manor estate/ Apsley to the A41 could relieve the pressure a bit."*

- *"In Apsley the flow of traffic is continually held up with traffic congestion from Durrants Hill, temporary traffic lights (is there no end to road works on London Road) and 350 new homes above the Manor Estate. Who is greasing whose palm."*
- *"I think more consideration should be taken when designing road schemes as previous schemes have led to the congestion which is more than likely to be a cause of the air quality issues. In addition, more modern traffic light solutions with maximised turn options would again improve flow."*
- *"No more retail development in Apsley, which suffers not just during peak work and school times, but especially at the weekend with people travelling to Dunelm Mill and the retail park next to Sainsburys."*
- *"London Rd recent 'improvements' have made traffic worse - installing island opposite bus stop meaning cars cannot pass a bus. Moving traffic lights? Lights at Orchard Street which means London Rd comes to a standstill. Took 1hr to Kings Langley the other day. New Markings badly done - tried to cover up with paint!"*
- *"Check phasing of traffic lights. Especially London Road where you've made matters so much worse regarding traffic flow and air pollution. Sheer council incompetence!"*
- *"London road has been improved with the opening of the new A41. Congestion is now a weekend thing. Having the shops has created this. Nothing above is going to fix this. Traffic survey over a wider area might give clues"*
- *"There was insufficient consideration of the impact on air quality of recent planning decisions regarding commercial retail outlets and new housing were made. The poor air quality was a thoroughly predictable outcome of all the expansion work in Apsley the council allowed."*
- *"Advertising via newspaper articles about smooth driving and letting right turners cross as oppose to standing COUPLED WITH on street signs 'Reduce emissions Drive Smoothly let vehicles cross'"*
- *"I feel that the link through the Chiltern Park estate through to New Road Northchurch has been mothballed presumably due to residents objections. If this were to go ahead it would significantly reduce the amount of traffic at the New Road/High street junction adjacent to St. Marys School. This is the only solution"*
- *"The road could be restricted to ""access only"" for HGVs."*
- *"Fines for vehicles left running unattended. Catch more speeding motorists. Dust-capturing vegetation. Two-way Durrants Hill Road canal bridge. More sophisticated"*

traffic light controls in many places. Major re-engineering of traffic flows at junction Green Lane / Breakspear Way (knock-on effects unknown)....."

- *"Since poor air quality has been identified in London Road. Planning has been approved for various commercial and residential developments. All have contributed towards the increase congestion in London Road. None have been asked to make a contribution towards easing traffic congestion. Why?"*
- *"If the current NO₂ level exceeds the maximum recommended level, red light should flash and direct motor vehicle traffic via an alternative route (this will need to go via higher ground). There should also be signage to say that entering this zone may be bad for your health."*

Responses to Question 9:

- *"Traffic congestion needs to be reduced in areas of pollution, so stop giving planning permission for unnecessary supermarkets in these designated areas."*
- *"No real substance"*
- *"The prioritisation seems to reflect ease and low cost rather than sustainable improvements in air quality. The highly prioritised measures are short-term fixes, and at a minimum should be done in conjunction with the medium priority measures which are likely to deliver real improvements that sustain over time."*
- *"You forget that rail travel costs more than to drive, therefore without rail costs going down the car will not disappear, Even travel to industrial areas by public transport are really bad/stoke non-existent are 9am and 7pm when people who are mixed hours/shifts still travel"*
- *"Prioritisation, summary documents, draft air quality action plans. All this nonsense coming out of very expensive talking shops and we all know that very little will change. In fact you know that pollution will get worse while you continue to build houses and encourage people from outside to live in the borough."*
- *"See previous"*
- *"What about the impact of all the residential buildings that are being put up in the area? It is really disturbing to see all these buildings going up, putting further pressure on an already stretched infrastructure. The roads in the Apsley area and magic roundabout are a nightmare - it's like a rat race!"*
- *"The ones with the greatest impact have been given the lowest priority! All electric vehicles (council vehicles and public transport) will reduce NO2 levels. The ones which may give only a small improvement in a longer term have been given highest priority (e.g. those which require changes in public behaviour)."*
- *"I agree generally (although I have no direct experience of Northchurch, only Apsley and Lawn Lane), but I think that the encouragement of smarter driving should be higher."*
- *"Yes, but no point wasting £££ on expensive surveys - just ask the drivers. Got rid of parking bays on London Rd and now the cars park on the pavements. No zigzags on new pedestrian crossing - cars park there too. Durrants Hill Rd. bridge needs 2 lanes (like used to be) - if you just did that it would be 1000% better"*
- *"Air quality problems completely predictable given the commercial and housing expansions in Apsley"*

- *"I think that green incentives for taxi drivers should be given a higher priority. Apart from the improvement of taxi emissions, which would be worth the effort, it would be an action that would be noticed and be an encouragement for taxi passengers to select the greener taxis for their journeys."*
- *"Promoting the use of electric vehicles should be a top priority"*
- *"As in my previous answer, the link road is the only thing that would make a significant difference to air quality. Our house is actually on this junction. Two of my family have serious asthma even though we have double glazing and have done everything we can to improve air quality inside our house."*
- *"Very sensible! BTW the clarity of the summary document deserves a Very Highly Commended."*
- *"The measures involve lots of studies and no action, You have had 2 years to carry out studies. You've given planning to businesses and developments that have increased congestion."*

Responses to Question 10:

- *"Change in transport mode in London has been revolutionary, particularly as regards the use of bicycles. With the growing penetration of e-bikes the hill terrain around Hemel Hempstead and Northchurch are much less of a barrier to people bicycling. The real barrier in virtually all surveys on the topic is concern over safety. This is something that planners in Hemel/Northchurch/Berkhamsted need to address in order to deliver sustainable improvements in air quality."*
- *"Must get bus and rail travel cheaper than it is to travel by car. Better access to all areas of commerce and industry, better access to different areas of Dacorum before anyone will switch, so far it is more convenient to go by car or taxi to get to facilities/hospitals /doctors surgeries, shops etc. than to travel by public transport. Walking and cycling are fine in good weather but not in bad so unless you are considering cover areas everywhere not going to be an all-round activity"*
- *"As I have stated previously, all action plans consultations, meetings etc. are all a waste of time and tax payers money. I am not interested in action plans being amended, scrap all that nonsense and join the real world. The only way that pollution problems will be solved is by reducing the world's population. Trying to reduce pollution in Dacorum borough will not make a scrap of difference in the grand scheme of things."*
- *"A definite good idea and overdue. At the age of 58 I developed late onset asthma, which AQ could be a contributory factor. Perhaps the project could look at the population with asthma in the Action Plan areas to see if they go down as a result of the measures." "There's a lot to, do but one must start somewhere!"*
- *"As a walker I always find the smell of the traffic at Heath Park bad."*
- *"Are bonfires banned in areas of high pollution? Being asthmatic I am very aware of the effect of bonfires on air quality."*
- *"Building car parks only encourages more traffic. The plan to build a multi-storey car park in centre of Berkhamsted is a disastrous decision if we want to cut emissions in Lower Kings Road and the High Street. The plans for Lidl at the other end of town also have the potential to have a huge impact on increasing traffic pollution in Northchurch. None of this seems to have been considered by Dacorum Borough Council when they approved planning permission for these projects."*
- *"If I were the council I would stop putting up all these extra residential buildings in the Dacorum area. Tell the government to put these buildings elsewhere. Every new building put up brings more people to the area and its beginning to feel like we are all*

crammed in to a smaller and smaller space. Roads are full, supermarkets are full, etc. - the pace of life is faster and faster. I have noticed in the last few years that the air quality on some days is really very bad. I would only build council houses/flats."

- *"There is a great need to lessen the queues in these areas. This could be achieved by having one way streets into the main roads and roundabouts at some of the junctions instead of lights. It may mean that motorists have to use a longer route, but it would move the traffic faster. E.g. Durrants Hill Road from London Road - one way to Lawn Lane. Lawn Lane from Durrants Hill Road - one way in either direction towards Plough roundabout and Belswains Lane."*
- *"The traffic flow needs to be looked at carefully. Queues down Durrants Hill congest Apsley. Would a roundabout be better at that junction? Traffic has to go through the red light to maintain flow, often there is no choice. A box junction should be put where the new traffic lights are to make sure cars coming on to the London Road don't sit for hours at the junctions."*
- *"This air pollution is a real concern, especially at the weekend. Measures need to be put in place as soon as possible"*
- *"It would be nice to see more serious buy in from the Council and elected members as at the moment it seems to be a tick in the box exercise because you are duty bound to deal with the decreased air quality. For example, there has been no outward communication about this consultation; it took a neighbour alerting me to it."*
- *"Just add 2 lanes to Durrants Hill Rd bridge. Make the 'new' bus stop off the road (like it used to be). Remove Orchard St traffic lights, move pedestrian crossing back to where it was. Move island opposite bus stop, as it stops cars getting past a stationary bus. Seems crazy you spend millions changing the road infrastructure by putting in extra lights and islands, and reducing Durrants Lane bridge to 1 lane, and then moan that the CO₂ is too high due to traffic clogging up London Road. Before these changes were made, there was no problem at all!"*
- *"I am wondering why London Road is now considered to be an area of poor air quality. When you undertook a survey to consider the effect of traffic from the new build around the Manor Estate - the conclusion was that it would have no effect as traffic on London Road was not an issue!!!! Was the survey done at 4 in the morning?!"*
- *"Significant road building plans are necessary to take traffic to the new Aspen Park and the retail outlets in London Rd Apsley away from Apsley High Street. I.e. direct*

access onto the A41 and better access from the Kings Langley South West routes. Learn your lesson, NO MORE DEVELOPMENT IN APSLEY"

- *"Whatever changes within the Apsley area you will never reduce traffic volumes significantly whilst there are so many superstores within an area served effectively by one road (London Road) and the housing stock is increased (Bovis development). There needs to be a do not enter box at the new lights from Orchard St. onto London Road, a 2-way bridge on Durrants Hill to prevent back-up onto London Road and yellow lines opposite Moores motorcycle store to prevent a bottleneck with parking either side of the road."*
- *"Ensure that any action taken does not simply move the air quality problem to an area outside of the AQMA rather than improve the overall air quality for the larger area."*
- *"Need to be careful about removing on street parking pinch points where vehicle speeds may increase and cause safety related speed collisions - on-street parking is perfect traffic parking."*
- *"Please listen to the concerns of those who are within the High Street area. Our health is being ruined and Dacorum Borough Council is responsible because the only solution which would make any difference is being ignored."*
- *"Make the bridge in Durrants Hill 2 way traffic to prevent traffic queues all around lawn lane, Durrants hill and Apsley"*
- *"It is essential that road safety issues are taken into consideration. Some of the measures to improve air quality are likely lead to traffic driving faster through the area of High Street Northchurch (e.g. currently it slows to get past parked vehicles). Let's NOT solve one problem to make another one worse. Traffic speed and safety is already an issue in High Street Northchurch as shown by the survey I've completed which is available at <https://www.surveymonkey.net/results/SM-7MYFVSBL/> . Contains 236 responses.*
- *"The following comments have been received from Manor estate residents. Improve the bridge over the canal on Durrants Hill Rd Make large businesses who benefit financially to pay for road improvements. Rephase the traffic lights to speed up traffic flow. Put a yellow box at the end of Orchard St to help traffic to get out, set up a regular direct bus service to the town centre from the Manor Estate. Create a cycle route along the canal and Boxmoor common from Kings Langley to Berkhamsted with feeder routes into all the town centres with a decent road service."*