NORTH HERTFORDSHIRE DISTRICT COUNCIL

ACTION PLAN

for the

STEVENAGE ROAD, HITCHIN AIR QUALITY MANAGEMENT AREA

Final Action Plan: September 2013

CONTENTS

Executive Summary

The Environment Act 1995 (The Act) [(1)] requires all local authorities to review air quality within their areas. If it appears that any Air Quality Objectives (AQO) prescribed in the regulations are not likely to be achieved then the local authority must designate any area where this occurs as an Air Quality Management Area (AQMA). The Act then requires that an Action Plan be produced for the AQMA, setting out the actions that the local authority intends to take with the aim of improving air quality to a level to where it no longer exceeds the AQOs.

In July 2011 North Hertfordshire District Council (NHDC) produced a Detailed Assessment Report [(2)] as part of its Local Air Quality Management (LAQM) duties pursuant to The Act. This report concluded, on the basis of air quality monitoring results, that the AQO for nitrogen dioxide (NO_2) was being exceeded at residential properties located along Stevenage Road (A602) Hitchin. This was followed in April 2012 by an Updated Screening and Assessment Report [(3)], also a LAQM requirement, which based on a subsequent year worth of monitoring data confirmed the conclusion that the NO_2 AQO was being exceeded at residential properties along Stevenage Road, Hitchin. The main cause of the NO_2 AQO being exceeded was attributed to emissions from the internal combustion engines of road traffic.

The AQMA for Stevenage Road, Hitchin was designated by NHDC in 2012 and formally adopted by means of Air Quality Management Order No.1 2012 on the 29th June 2012 [(4)]. A plan showing the extent of the AQMA is included with the Order as is a list of the individual properties within the AQMA. It is available via a link on the following webpage:

http://www.north-herts.gov.uk/index/environment_and_planning/environmental_protection/air_quality.htm#airqualitymanagementareasinnorthherts

The Draft Action Plan for the Stevenage Road AQMA was developed during 2012 and 2013 following consideration of the air quality monitoring data collected during 2012 and road traffic data, alongside consultation within NHDC with transport policy and planning officers and transport planning officers at Hertfordshire County Council. A statutory and a public consultation process for the Draft Action Plan was held over a twelve week period, which closed on the 9th August 2013.

The Action Plan confirms that the main source of nitrogen oxides (NOx) emissions (a precursor to NO_2) is road traffic and the associated congestion, with cars contributing the majority of source of air pollution emissions from vehicles using the area's roads. The Action Plan looks at six (6) main groups of measures that may be utilised with the aim of reducing levels of air pollution and improving air quality. These are:

- Partnership work both internally and externally to share best practice and knowledge, establish guidance documents to influence decision making
- Ongoing monitoring of air quality and levels of traffic
- Publicity and education to raise awareness of air pollution issues
- Improving infrastructure to support the uptake of alternative modes of transport
- Encourage the use of alternative fuels and reducing vehicle emissions
- Traffic infrastructure alterations

At this time the projected quantified emission reduction that may be achieved by the implementation of any combination of these measures is not available. However, the scale of reduction necessary has been calculated as a decline in NO_x of 8.93$\mu g/m^3$ which represents a percentage improvement of 16%.

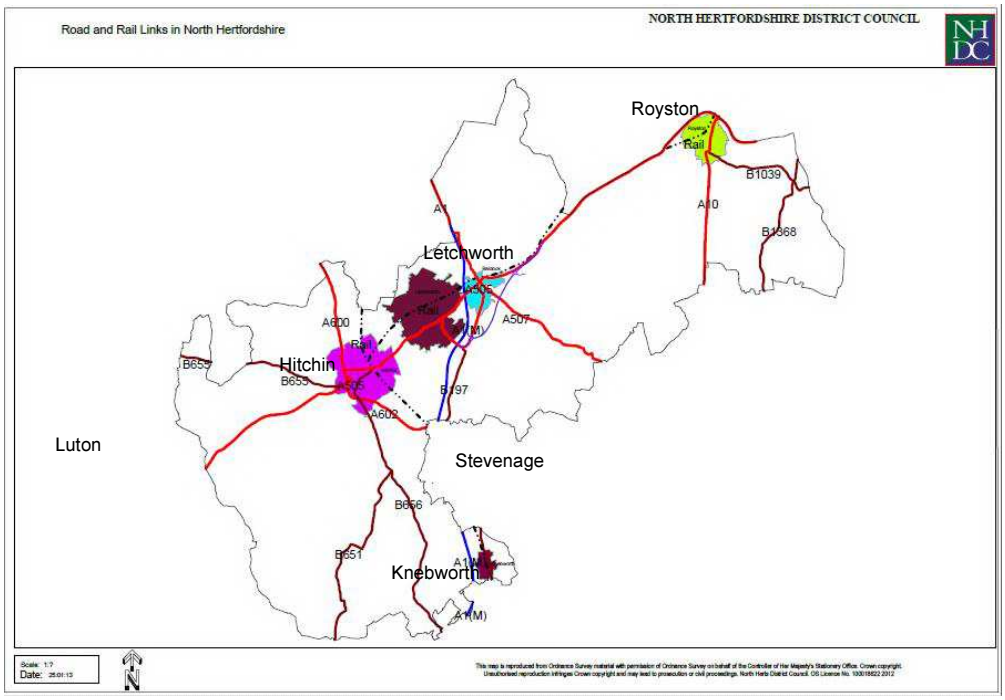
It is acknowledged that the Action Plan is a continuously evolving document involving numerous stakeholders and which is necessarily linked to, among other things, changes in government legislation and policies, science and technology and local and regional scale developments. Equally it is acknowledged that North Hertfordshire is a diverse area and that there will always be a need to balance the requirements of local businesses and communities in relation to improving local air quality. As such it is to be expected that the Action Plan will need to be kept under review with a view to updating and amending it in the future.

For further information concerning this report please contact env.health@north-herts.gov.uk with "NHDC Air Quality Action Plan" identified as the subject heading.

1. Introduction

This local Air Quality Action Plan identifies a range of measures that are to be pursued with the aim of improving air quality around the Stevenage Road area of Hitchin; an area of the district of North Hertfordshire that has been identified as suffering from levels of air pollution that exceed the health based national air quality objective (AQO). The AQO that is exceeded is the mean annual average for NO_2 and as a consequence, in line with Part IV of the Environment Act 1995, an Air Quality Management Area (AQMA) was designated along a length of Stevenage Road, Hitchin in 2012. The elevated NO_2 is predominantly a result of emissions from road vehicles.

North Hertfordshire is a largely rural District Council that has two main roads (A1M and the A10) passing through it on a north - south axis in addition to the A505 which crosses the District on a southwest - northeast axis. Of these roads, the A505 is the road that is associated with two of the three areas of the District where air pollution is at, or approaching, an air quality objective (AQO). However, it is the A602 (Stevenage Road) as it passes through the south of Hitchin that is the road associated with the AQMA. The A602 is the most direct route between the two large towns of Stevenage and Luton, both of which are located outside of North Hertfordshire (Figure 1).



NHDC estimated population based on 2011 census data = 127,000

Figure 1: North Hertfordshire District

This Action Plan is to be led by North Hertfordshire District Council (NHDC) but implemented in partnership with Hertfordshire County Council (HCC). NHDC has already consulted with HCC and will consult with the public and other statutory consultees on the content of this plan in advance of the final version that will submitted for approval by the District Council and Central Government.

1.1. The importance of air quality

Air pollution has a well understood negative impact on human health and the surrounding environment. Therefore, tackling air pollution is important to prevent ill health, improve health and life expectancies and to benefit our environment and quality of life.

It is widely acknowledged that exposure to air pollutants, even at the levels found in the UK, damages health. In 1992 the Department of Health set up a Committee on the Medical Effects of Air Pollution (COMEAP) to examine the toxicity and effects on health of air pollution. In their 1998 report COMEAP concluded that up to 24,000 deaths were 'brought forward' in the UK in 1995/1996 due to the short term effects of air pollution. Research also indicated that long term exposure could have an even greater impact, although this has been difficult to quantify (5).

The most recent estimate, agreed by COMEAP, is that annually as many as 29,000 deaths are caused by air pollution with life expectancy of every person in the UK reduced by an average of 7-8 months. Furthermore the recent Environmental Audit Committee Report puts the financial burden of air pollution at between £8.5 and £20 billion per year (6).

The specific health impacts of air pollution depend upon the particular pollutant and the impacts of those pollutants mentioned above are listed here:

- Sulphur dioxide (SO_2) – coughing, tightening of chest, irritation of lungs
- Nitrogen dioxide (NO_2) – irritation and inflammation of lungs
- Particulate Matter (PM_{10} and $PM_{2.5}$) – inflammation of lungs and linkage of long-term exposure to coronary heart disease and cancer.
- Volatile Organic Compounds (VOC) – cause of cancer

The elderly and young people and those with respiratory diseases such as asthma and bronchitis are affected most by those pollutants that impact on the lungs and those impacts will also worsen the symptoms suffered by people with heart conditions.

1.2. Principle sources of air pollutants

Historically the emission of smoke and SO_2 from domestic coal fires and the burning of coal in industrial furnaces and boilers represented the main source of air pollutants in the UK. However, a move away from coal as a fuel source and the environmental regulation of industry has meant that on a local environmental scale these pollutants are no longer the air pollutants of most concern.

Emissions from the combustion of petrol and diesel in the engines of road vehicles now represent the most significant local source of air pollution as a consequence of increased road traffic; a six fold increase having been recorded between 1955 and 2001 (6), and the resulting congestion on

road networks. The air pollutants generated from this source are VOC and PM_{10} and $PM_{2.5}$ and nitrogen oxides (NOx) which include, and are a precursor, to NO_2.

NO_2 is the air pollutant of concern at Stevenage Road. It is a gas that comprises one nitrogen atom and two oxygen atoms and with nitric oxide (NO) are collectively known as nitrogen oxides (NOx). All combustion processes produce NOx emissions, mainly in the form of NO, which is subsequently converted to NO_2 largely through chemical reaction with ozone (O_3). Accordingly, the Action Plan focuses on measures that will reduce emissions of NO_x

1.3. The legislative framework for air quality

Part IV of the Environment Act 1995 gives local authorities duties and responsibilities that are designed to secure improvements in air quality, in particular at the local level. The significance of the role that local authorities have been given under this legislation was reflected by the Environmental Audit Commission report of 2010. This identified local authorities as 'key to improving air quality', alongside the recommendations that 'the profile of air quality should be raised with all local authorities …… and that it is given sufficient attention across all areas of local authority responsibility, not just within environmental departments' **(5)**.

The duties and responsibilities include the monitoring, review and assessment of key air pollutants in their area and where the results of this work are shown to exceed a health based AQO set by government the local authority is required to take particular steps.

The local authority must, by order, designate any part of its area so affected as an AQMA and must then prepare and implement a remedial Action Plan of measures to reduce air pollution levels in that AQMA.

The AQO that are of relevance to this Action Plan for the AQMA at Stevenage Road, Hitchin are those relating to NO_2. Both an annual mean and a 1 hour mean AQO have been established for NO_2. The 1 hour mean is 200$\mu g/m^3$ which is not to be exceeded more than 18 times a year and the annual mean is 40$\mu g/m^3$. It is the annual mean AQO that is being exceeded, by approximately a 5% (1.8$\mu g/m^3$), within the AQMA at Stevenage Road, Hitchin that was designated in July 2012.

2. Stevenage Road, Hitchin AQMA–Background Concentrations & Source Apportionment

2.1. Background NO_2 concentrations

Background air quality in North Hertfordshire is generally representative of it being a largely rural district with minimal heavy industry and this is reflected in the Department for Environment Food and Rural Affairs (Defra) National Air Quality Mapping database.

For 2012 this database estimated that the mean average background nitrogen dioxide (NO_2) concentration across the District was 12.8μg/m^3.The same database estimated a background NO_2 concentration of 16.5μg/m^3 in the Stevenage Road area in 2012.

The background database relies on an estimation for each 1km grid square of the country based on generic emission contributions from the following sources: motorways, A-roads, industrial point sources, domestic, institutional and commercial space heating, aircraft, rail and a regional rural contribution. It is obviously not possible to assess the actual contributions from every road within a 1km grid square, which is why it is necessary for local authorities to carry out air quality monitoring at roads in their area that are suspected to be heavily used and therefore more likely to be contributing significantly to air pollution.

Table 1 displays the background NO_2 and NOx concentrations representative of the Stevenage Road area of Hitchin alongside the measured NO_2 concentrations and the annual AQO for NO_2, (and their equivalent NOx concentration). This data will be used in Section 3 to calculate the required reduction in NO_2 emissions.

Table 1: NO_2 Concentrations (μg/m^3): Stevenage Road Area of North Hertfordshire

Pollutant	Annual AQO	2012 Back-ground	Highest conc. measured in AQMA in 2012	Highest conc. at receptor in AQMA in 2012
NO_2	**40**	16.481	53.6 *	41.8*
NO_x	**73.79**	25.78	116.47 *	82.72*

(* = based on provisional diffusion tube data as at 27/02/2012 at the worst case monitoring location)

2.2. Source Apportionment

The Stevenage Road AQMA includes the residential properties fronting the southern side of the A602 (Stevenage Road) from the Hitchin Hill roundabout to the properties at 94-98 Stevenage Road located to the east of the Hitchin Hill roundabout. Hitchin Hill is a busy roundabout serving five roads, Stevenage Road (A602) enters the roundabout from the east, London Road (B656) and

Gosmore Road from the south, Park Way (A602) from the west and Hitchin Hill (B656) from the north. (Figure 2).

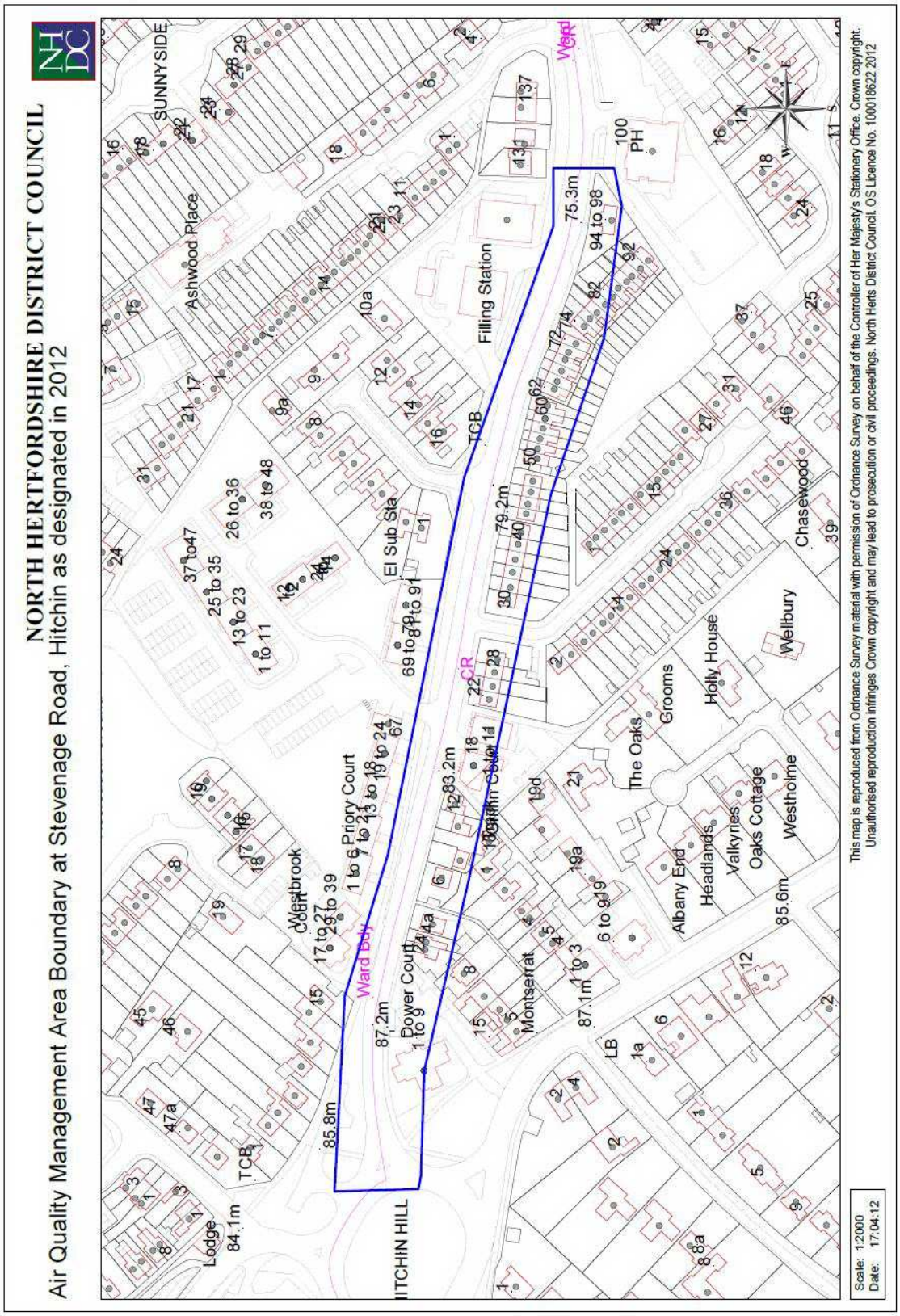


Figure 2: Stevenage Road AQMA (as designated June 2012)

Stevenage Road has an uphill approach to the Hitchin Hill roundabout and passes through a largely residential area of Hitchin and has a large number of side roads leading to other areas of the town and turnings serving properties fronting Stevenage Road. The land use to the south of Stevenage Road is residential with the exception of a public house (Orange Tree) located just outside of the AQMA and a small convenience store. As a rule, the properties on the south of Stevenage Road are more closely located to the road than those to the north. The land use to the north is also primarily residential with the exception of a petrol filling station/convenience store and a sign-writing business.

London Road, Gosmore Road and Hitchin Hill are roads that have only residential properties fronting them, although there is a public house (Three Moorhens) located immediately to the north of the Hitchin Hill roundabout. Park Way passes through the undeveloped fields of Priory Park in the immediate vicinity of the Hitchin Hill roundabout.

The perception of the road network around the Hitchin Hill roundabout, based on local knowledge, is that it is very busy and that the majority of the traffic is travelling east and west along Stevenage Road and Park Way (A602) as this represents the main route between Stevenage and the A1M to the east and Luton to the west. For this reason air quality monitoring was focussed on this road network with the results supporting that perception and confirming that road traffic is the main source of NO_2 in the area.

Whilst road traffic is acknowledged as the main source of NO_2 in the area and therefore the main cause of the breach of the NO_2 annual AQO it is necessary to determine the extent to which the different types of vehicles are contributing to this pollution (source apportionment). This is important as it allows the options that are being proposed in the Action Plan to be better assessed in terms of the impact that they might have on air quality.

Table 2 summarises the peak period traffic count data obtained from a survey on Thursday 20th September 2012. It shows that the majority of the traffic using the Hitchin Hill roundabout approaches from the east and west along the A602. More specifically, Figure 3 illustrates the percentage fleet composition for the Hitchin Hill roundabout as a whole, measured on Thursday 20th September 2012 and indicates that cars account for the majority of the traffic.

Figures 4 & 5 illustrate the fleet composition (number of vehicles) approaching Hitchin Hill roundabout along Stevenage Road (A602) and Park Way (A602) respectively over the same period and show, when compared with the numbers of vehicles approaching from the north and south, (Figures 6 & 7) that more light and heavy goods vehicles access the area from the west and east.

Table 2: Summary of Traffic Count Data – Thursday 20th September 2012

(Peak hour count periods only: 6am to 9am and 4pm to 7pm

	Park Way (A602) Eastbound	Hitchin Hill (B656) Southbound	Stevenage Road (A602) Westbound	London Rd (B656) Northbound	Gosmore Rd Northbound	Overall Total
Traffic Count	6,316	3,420	5,425	2,329	835	**18,325**

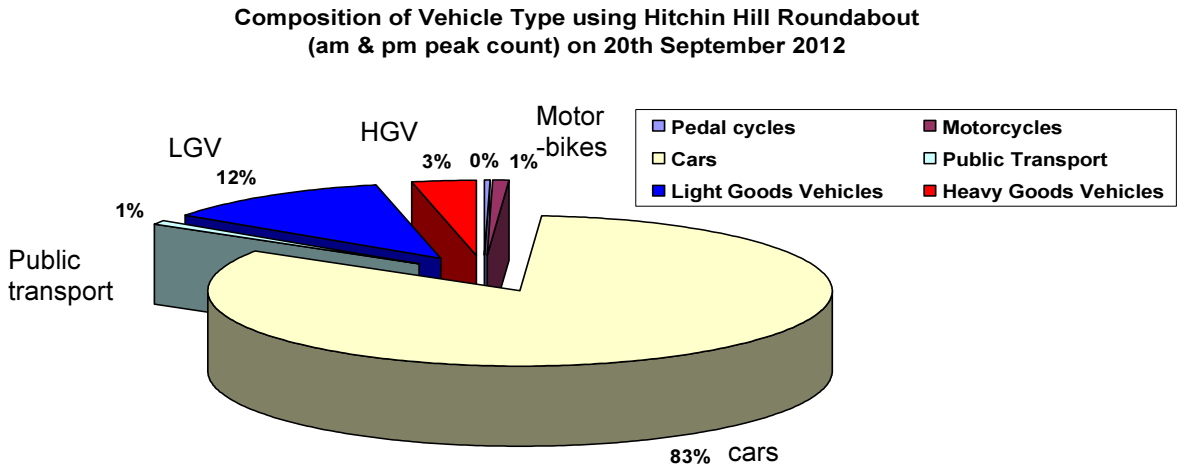


Figure 3: Fleet Composition – Hitchin Hill Roundabout

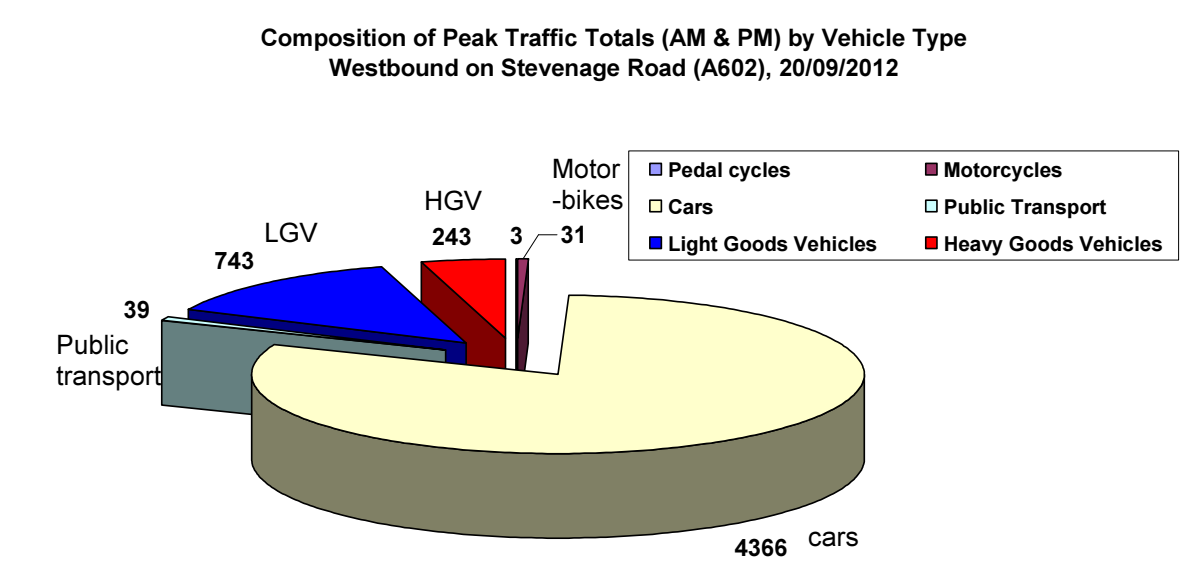


Figure 4: Fleet Composition approaching Hitchin Hill Roundabout from Stevenage Road (A602)

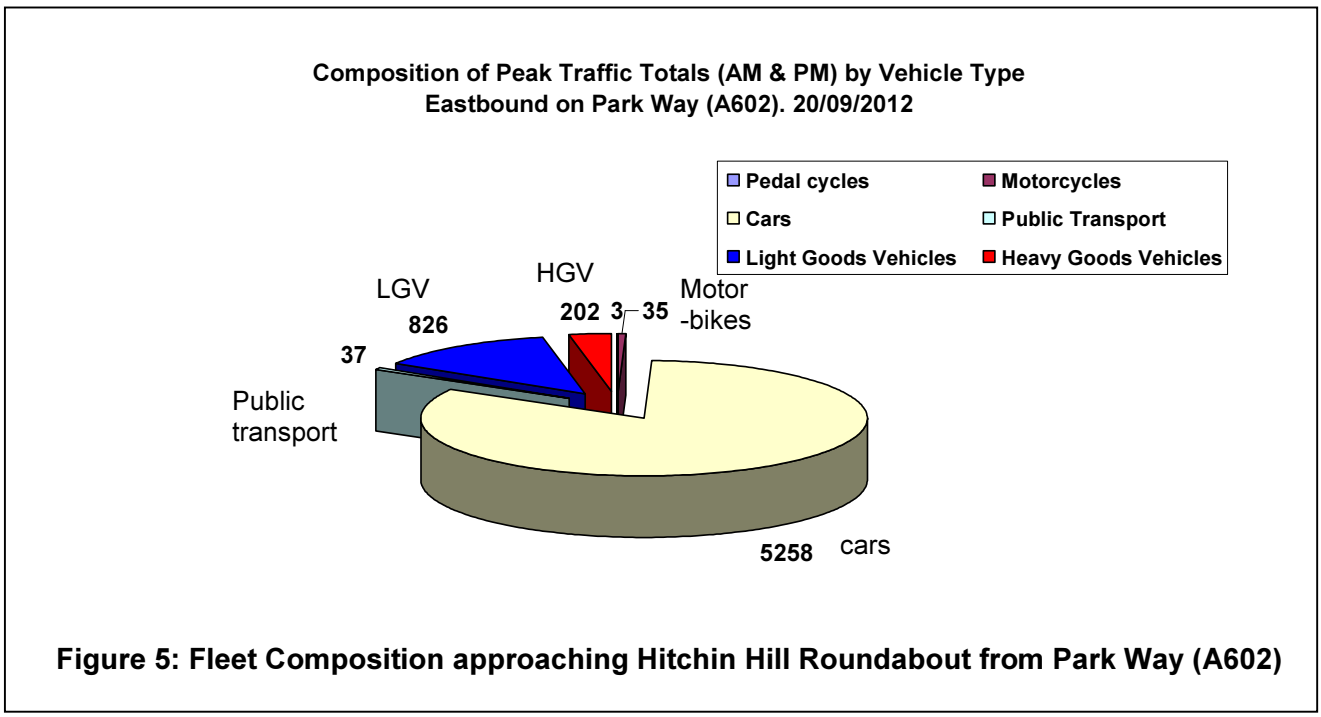


Figure 5: Fleet Composition approaching Hitchin Hill Roundabout from Park Way (A602)

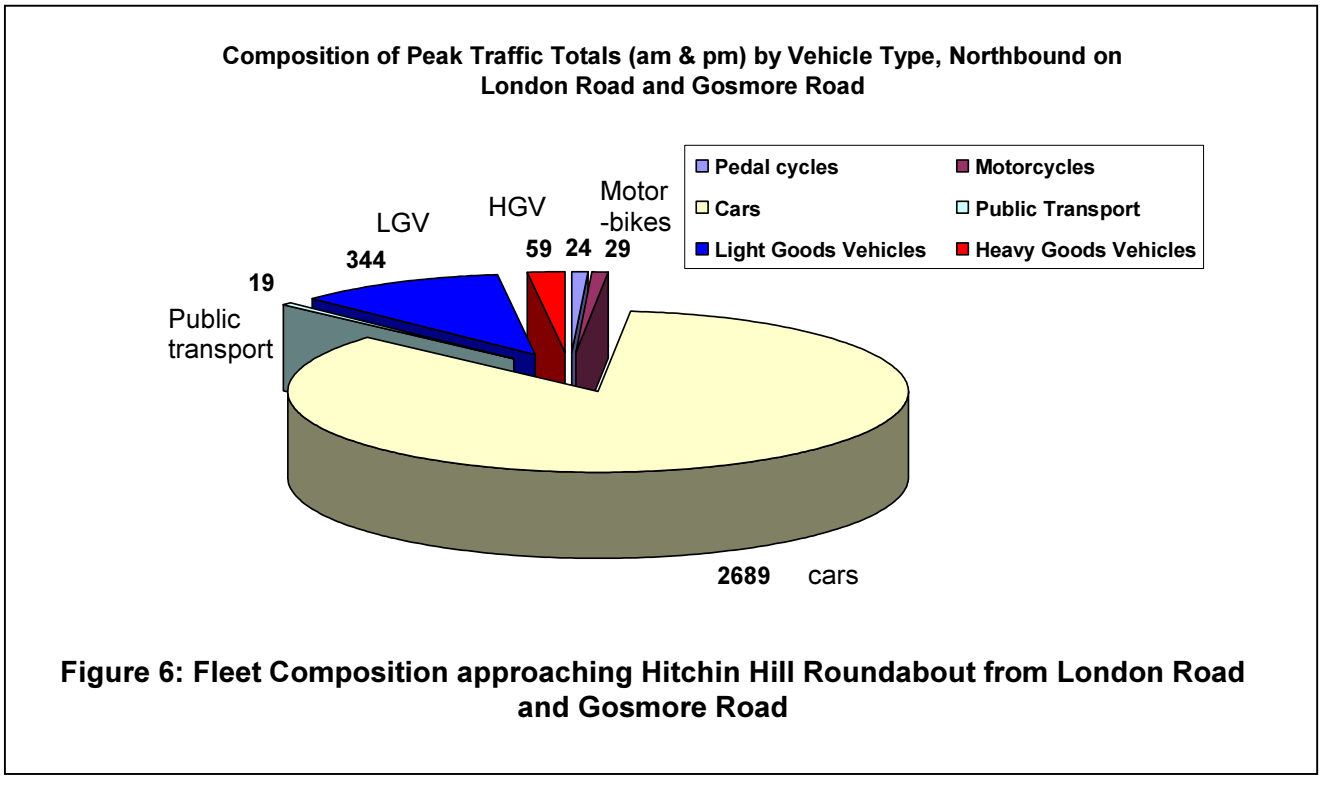


Figure 6: Fleet Composition approaching Hitchin Hill Roundabout from London Road and Gosmore Road

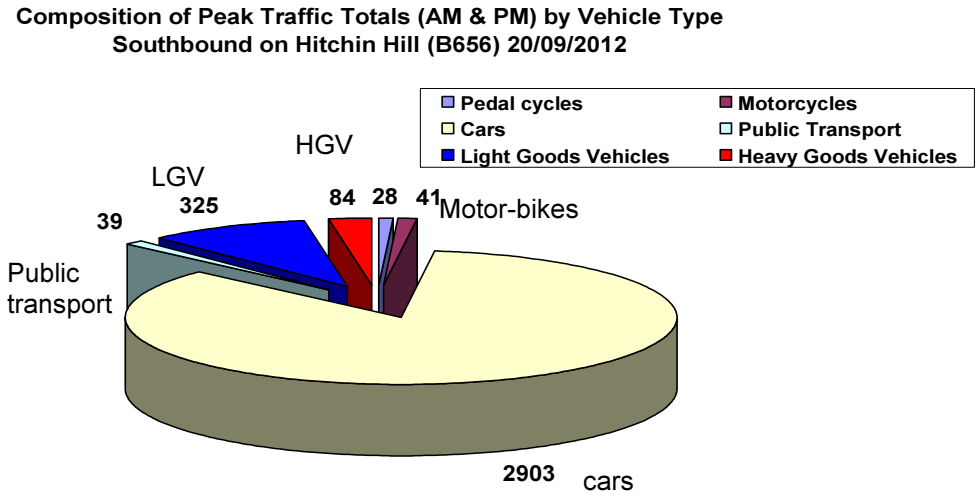


Figure 7: Fleet Composition approaching Hitchin Hill Roundabout from Hitchin Hill (B656)

Despite cars comprising the dominant category of road traffic using Stevenage Road and, more generally the Hitchin Hill roundabout, proportionately they may not constitute the greatest source of NO_2. The different fuel, age and exhaust emission standards that apply to different vehicle types need to be taken into account in estimating the contribution of each vehicle category to the NO_2 air pollution in the area.

The calculation of the contribution from each vehicle type was achieved by using the Defra Emission Factors Toolkit for Vehicle Emissions (v.5.2). Table 3 shows the outputs from this Toolkit using the 20th September 2012 traffic count data for the Hitchin Hill Roundabout as a whole and this can be compared to Table 4 which shows the outputs from the Toolkit for Stevenage Road.

Table 3: Percentage contribution to NOx emissions of different vehicle types at Hitchin Hill Roundabout

Vehicle Type	Vehicle Count	% contribution to NOx emissions
Motorcycles	136	1%
Cars	15,216	44%
Public Transport Vehicles	151	9%
Light Commercial Vehicles	2,238	15%
Heavy Goods Vehicles	588	31%

Table 4: Percentage contribution to NOx emissions of different vehicle types approaching Hitchin Hill Roundabout from Stevenage Road (A602)

Vehicle Type	Vehicle Count	% contribution to NOx emissions
Motorcycles	31	1%
Cars	4,366	37%
Public Transport Vehicles	39	8%
Light Commercial Vehicles	743	15%
Heavy Goods Vehicles	243	39%

In summary, it is apparent that although cars are by far the most common vehicle type using Stevenage Road and the Hitchin Hill roundabout, heavy goods vehicles are making a comparable level of contribution of NOx to the atmosphere to cars.

3. Level of Reduction Necessary to Achieve Air Quality Objectives

Table 5 provides a summary of the background NO_2 and NOx concentrations within the AQMA, alongside the equivalent AQO and the worst case concentrations measured during 2012. Also within Table 5 are the reductions in concentrations ($\mu g/m^3$) that have been calculated as necessary to be able to achieve the AQO.

Table 5: Stevenage Road AQMA - Concentrations of NO2 & NOx including required reductions

Pollutant	Annual AQO	2012 Back-ground	Contribution from road traffic up to AQO limit (i)	Highest conc. at receptor in AQMA in 2012	Contribution from road traffic to highest conc. (ii)	Reduction needed to achieve AQO (iii)
NO_2	**40**	16.481	23.519	41.8 *	25.319	1.8
NO_x	**73.79**	25.78	48.19	82.72 *	56.94	8.93
		(i) = 40 – 16.481 (i) = 73.79 – 25.78	(ii) = 41.8 – 16.481 (ii) = 82.72 – 25.78		(iii) = 41.8 – 40 (iii) = 82.72 – 73.79	

(* = based on provisional diffusion tube data as at 27/02/2012 at the worst case monitoring location)

The required reduction in NO_2 is extrapolated to be achievable by reducing NOx concentrations by $8.93 \mu g/m^3$, which as a percentage of the $56.94 \mu g/m^3$ NOx contribution from road traffic is a 16% reduction.

It is apparent that a substantial reduction in NOx concentrations is required and logically the most effective means of reducing the levels of NOx emissions would be to target the most significant sources of emissions. At Stevenage Road this has been shown to be heavy goods vehicles and cars and so particular attention will be given to these sources in identifying possible mitigation measures in the Action Plan.

4. Development of Action Plan Proposals

An air quality Action Plan must include the following:

- quantification of the source contributions to the predicted exceedences of the relevant objectives
- evidence that available options have been considered
- how the local authority will use its powers and work in conjunction with other organisations in aiming to achieve the air quality objectives (AQO)
- timescales in which the authority and their partners propose to implement the identified measures
- where possible quantification of the expected impacts of the proposed measures and an indication as to whether the measures will be sufficient to allow the AQO to be met
- how the authority intends to monitor and evaluate the effectiveness of the plan

Appendix 1 contains the Summary of Measures identified by the Action Plan .

Once an Action Plan has been adopted NHDC will report on progress with the implementation of the Action Plan and revise it whenever necessary.

Sections 4.1 to 4.6 addresses certain aspects of the identified measures in a little more detail, under the six categories of measure that are being proposed. It is important to recognise that a number of the measures within different categories will have the potential to support or enhance the impact of other measures. For each category reference is also made to the support expressed by the public in response to the consultation.

4.1. Partnership Working

Previous sections of this Action Plan have established a causative link between emissions from road traffic and the identified air quality problem. Because road traffic is inextricably linked to factors including, the road network and layout, public behaviour and education and economic and population growth and by consequence the residential, commercial and industrial development in its support, it is apparent that the Council will need to work in conjunction with partners.

In response to the consultation the public considered Partnership Working in its broad sense to be the 5th most important category of action out of the 6 categories identified. However, the need to include air quality considerations within the Council's Local Plan (measures 1.1 and 1.2) were, as individual measures, identified as the second most important by the respondents.

Measure numbers 1.1 and 1.2 concentrate on internal partnership working with Planning Policy, Transport Policy and Development Control Officers with aims including:

- establishing air quality as an important planning consideration with specific relevance to North Hertfordshire within strategic planning documents, to ensure air quality is considered

early enough in the planning process to influence final proposals and where appropriate decision making

- establishing air quality mitigation measures as considerations for funding within Section 106 agreements and/or as items on a Community Infrastructure Levy list (it is acknowledges that there will be transport related measures included on such lists that would be expected to benefit air quality and so duplication would need to be avoided)

Measure number 1.3 focuses on working with NHDC's Transport Policy Officer and the HCC Transport Planners with aims including:

- input and integration with NHDC Green Travel Plan and the Hitchin Urban Transport Plan 2011
- input and integration with HCC Local Transport Plan
- support for and inclusion within HCC transport and travel initiatives, whether school travel plans, public transport initiatives or cycling and walking schemes.

Measures 1.4 and 1.5 aims to work with partners directly linked to public health initiatives, specifically NHDC's Community Services team and HCC's Public Health role with objectives including:

- establishing a link between a change in mode of travel and increasing exercise and improved health. It would be expected that this would link to the HCC Active Travel Strategy.
- raise the profile of air quality as a public health issue with a view to obtaining funding and establishing initiatives with potential to improve air quality. In particular linking to Hertfordshire's Health and Wellbeing Board and its Strategy will be of benefit.

4.2. Ongoing Monitoring of Air Quality and Levels of Traffic

Continuing to monitor levels of air pollution and levels of traffic in the area is essential to the requirement for NHDC to be able to:

- monitor and evaluate the effectiveness of the Action Plan
- report on and where necessary revise the Action Plan

This category of action was identified as the most important by the respondents and this was found to be consistent with the identification of monitoring of air quality as the joint 5th most important specific measure identified by the respondents.

4.3. Raising Awareness of Air Pollution Issues

Over time there are likely to be a number of different opportunities for initiatives within this category of measure and it is anticipated that effective partnership working will increase the chance of NHDC being involved. Particular opportunities known to exist, or that have been provisionally identified, are:

- the use of NHDC media resources
- engagement with local schools, including utilisation of the outcome of the Hertfordshire and Bedfordshire School Travel Plan Project, which has been funded by Defra
- targeted engagement with local business that rely on the road network

This category of action was identified as the least important category of action by the respondents and that opinion was reflected by none of the specific measures identified within this category being included in the top five most important measures.

4.4. Improving Infrastructure to Support Uptake of Alternative Modes of Transport

Measures identified within this category should, because of the contribution of cars and HGVs to NOx emissions, be focussed on three main areas:

- facilitating a move away from the need to make short journeys by car and towards cycling and walking
- providing infrastructure to encourage and support the proportion of cars that are powered by means other petrol and diesel. The focus has been placed on electric vehicles because Government funding and car manufacturers appear to supporting this alternative over hydrogen fuels and because there are more examples and experience within local authorities of supporting initiatives for electric vehicles
- investigate potential to establish gas or biomethane refuelling infrastructure at large commercial developments or facilities as this has the potential to reduce NOx emissions.

This category of action was identified by the respondents as the 4th most important of the six options listed and none of the specific measures identified were in the top five as ranked by the respondents.

4.5. Encouraging Use of Alternative Fuels and Reducing Vehicle Emissions

To encourage the utilisation of any improvements in infrastructure for zero or low emission vehicles it makes sense to try to provide incentives for residents and business to consider such vehicles. Naturally any successful measures within this category would also be expected to have a positive feedback on the measures proposed within section 4.4. The initial focus being proposed is:

- incorporation of an emission element to controlled parking charges. The intention would be to benefit owners of zero or low emission vehicles, rather than increase costs for other owners
- work with business to encourage a higher proportion of zero or low emission vehicles within their fleet

This category of action was selected as the 3rd most important of the six options identified and two of the specific measures were ranked as the joint 5th most important measure. The two measures were linked to working with local businesses to use lower emission vehicles and otherwise reduce vehicle emissions. These measure are closely linked to one of the measures identified under the "improving infrastructure to support alternative modes of transport", namely infrastructure for alternative fuel vehicles, which were not identified as priorities by the respondents.

4.6. Traffic Infrastructure Alterations

An alternative approach to reducing emissions by increasing the number of low or zero emission vehicles on the road at the same time as trying to encourage people to find alternative modes of travel to using the road is to try to reduce congestion through engineering or traffic management. A south of Hitchin bypass was initially considered but at a cost of approximately £60 million there is insufficient justification to warrant such a scheme purely on the grounds of air quality. Smaller schemes that are being proposed include:

- investigate alternative routes to Hitchin's industrial areas for HGVs
- review parking provision along Stevenage Road
- investigate changes to the layout of Stevenage Road including traffic management options

This category of action was identified by the respondents as the most important and this opinion was reiterated in the response to the attribution of importance to individual measures within this category. Specifically the need to investigate alternative routes for HGVs was ranked as the most important and the investigation of layout changes to Stevenage Road was identified as the 4th most important.

5. Draft Action Plan Consultation Summary

Schedule 11 of the Environment Act 1995 requires local authorities to consult with a range of interested parties. Those of relevance to North Hertfordshire District Council are:

- the Secretary of State
- the Environment Agency (EA)
- the Highways Agency (HA)
- neighbouring local authorities

- the county council
- bodies representing local business interests and other organisations as appropriate
- residents within the AQMA

In addition, because the measures being proposed for this AQMA may in some instances have the potential to have an influence on, or to impact other areas of North Hertfordshire, it is proposed not to restrict the consultation to residents and businesses in the AQMA.

Defra recommends that the duration of the consultation period should not last for less than 8 to 12 weeks and so the consultation period ran for 12 weeks.

The scope of the proposed consultation will comprised the following:

- direct correspondence to residents and businesses within the AQMA with a link to access a questionnaire about the Action Plan and an alternative option for accessing the questionnaire
- direct correspondence to the county council, neighbouring local authorities, the EA, the HA and the Secretary of State
- a press release notifying the residents of North Hertfordshire of the opening of the consultation period that will include contact details and reference to the NHDC website
- notification of the consultation period on the NHDC website alongside a link to the Action Plan questionnaire

5.1. Responses from Residents

A total of 25 individual responses to the questionnaire were received. Of the respondents, 3 did not provide any indication of their location. 11 were from Stevenage Road, Hitchin, 8 were from other addresses within Hitchin, 1 was from Baldock and 2 were from outside of Hertfordshire.

Level of concern about air pollution prior to the consultation was gauged as being of moderate or serious concern, 44% and 24% of respondents respectively. Level of concern following the consultation increased to 64% of respondents expressing serious concern and 28% moderate concern. No respondents answered that air pollution was of no concern following the consultation on the action plan compared to 16% before the consultation.

The relative importance given, by the public, to the general actions and the specific measures identified have been referenced in the previous sections. In the responses to the question of “what other measures should the Council be considering” many reiterated their support and argued for

measures that were already identified in the Action Plan. However, in addition a number of slightly different measures were identified and are summarised below:

- remove sleeping policemen (speed bumps) from Whitehill Road and replace with other traffic calming measures in attempt to persuade more traffic to use that road rather than Stevenage Road.

- Widen A1M to dissuade people from using London Road
- Bypass around Hitchin
- Alternative road access to Kingshott School
- Establish a low emission zone
- Incentives for not using cars
- Speed cameras
- Plant more trees

In response to the request for any other air quality related comments the following were received:

- NHDC is apathetic to air quality issues and should be doing more to prevent it becoming an issue in the first place.
- Traffic has been increasing on Stevenage Road over the last 40 years.
- Education and improved cycling and walking is important but these are focused on the residents of Hitchin, which is less important than focusing actions on those travelling through Hitchin, for example HGVs and commuters.
- As a wheelchair user I suffer more as a result of being closer to the point of release of the emissions.
- More and better public transport needed.
- Need to take a holistic view to addressing HGV traffic and should not just result in moving the problem to somewhere else.

5.2. Responses from External Organisations

- *Highways Agency* – responded with "no comments to make".

  This reflects the fact that the roads associated with the air quality issue are the responsibility of Hertfordshire County Council and not the Highways Agency.
- *Hertfordshire County Council Transport Policy, Modelling and Highways* – the response received has been summarised as follows:
  - Drew attention to the existence of more recent transport strategy documents
  - Highlighted the existence of the Hertfordshire Health and Wellbeing Board and its Strategy
  - Identified the existence of a number of additional supporting organisations and funds that could be called upon for help
  - Stated that if it could be proved that bus stops were causing significant congestion then changing the locations could have a considerable impact on air quality and that any changes to bus infrastructure would be considered for funding by Hertfordshire County Council (HCC).
  - Stated that any changes in the layout of Stevenage Road would be considered for funding by HCC.
- *Department for Environment and Rural Affairs (Defra)* – the response received has been summarised as follows:
  - Welcomed the linking of air quality to strategic issues and associated policy documents.
  - Encourages NHDC to focus on "defined & confirmed (concrete) measures".

The other response that was received and is considered within this Section is that received from the Hitchin Forum. The Hitchin Forum exists to develop and channel energy and enthusiasm for the town. Anyone with an interest in Hitchin can join the Forum, either as an individual or as a nominated representative of an organisation in the town.

- *Hitchin Forum* – The response originated from the Chair of Hitchin Forum
    - Welcome the designation of the AQMA as recognition of the need to reduce the impact of traffic on the town's environment
    - Identifies the following measures as positive steps:
        - Improve cycling infrastructure
        - Consider the quality of footways, pedestrian links and signage (provided this resulted in action)
        - Investigate the possibility of re-routing HGV travelling to the industrial estates
    - Draws a link between the 3rd measure identified above as being integral to improving the success in the 1st and 2nd measure
    - Disappointed that there was no specific evidence to support the case for re-routing HGV traffic
    - Considers that 1 day of traffic data collection is insufficient and reiterates this in respect of the destination of HGV traffic
    - Raises the potential risk of just displacing the problem of HGV emissions to a different area of the town and suggests that the temporary construction road associated with the Rail Curve development demonstrates a viable alternative HGV route.
    - Considers that mixed messages are being given about the health impact of the level of air pollution being measured and are concerned that the contradiction represents a means of justifying inaction in the face of competing priorities.
    - Concern was raised over how the respondents would interpret Q.4 of the questionnaire and more generally how responses would be utilised.
    - Measure 2.2 should be re-written to ensure that traffic counts should be performed more frequently and at more locations. And that particulates should also be monitored *(presumably in relation to Measure 2.1)*.
    - The option of a new access road to the industrial area should be given active consideration.
    - The level of health impact should be less ambiguous.
    - The survey questions should be more carefully designed and posed.
    - NHDC should make it clear to respondents how their input will be used and the degree to which it will affect any decision.

5.3. Summary of Consultation Process

The consultation process has been interpreted to be broadly supportive of the need for the Action Plan and the measures identified within it. As such it is considered un-necessary to make any changes to the Summary of Measures identified within Appendix 1. However, the collective responses will be taken into account when assigning a priority to identified measures where funding and/or opportunity for more than one measure arises at the same time. Also the individual comments about specific measures will also be kept on record and considered in reference to any actions to which they are related.

6. Implementation of the Action Plan

If the Action Plan is adopted by Cabinet, the Environmental Protection & Housing Team will be responsible for implementing the plan and reporting on its progress through the statutory reporting mechanisms. There will be a requirement for the Environmental Protection & Housing Team to work closely with other departments within NHDC and also Hertfordshire County Council and for representatives from such to be willing to engage in the process. Equally integral to the success of the process will be community engagement and the ability to obtain support from central government in the form of funding to support the implementation of measures.

Contacts

Air Quality Issues / Local Air Quality Management

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References

1) Environment Act 1995. http://www.legislation.gov.uk/ukpga/1995/25/contents

2) NHDC. July 2011. *Detailed Assessment Report 2011.* http://www.north-herts.gov.uk/index/environment_and_planning/environmental_protection/air_quality.htm

3) NHDC. April 2012. *Updated Screening and Assessment Report 2012.* http://www.north-herts.gov.uk/index/environment_and_planning/environmental_protection/air_quality.htm

4) NHDC. July 2012. *Air Quality Management Order No. 1 2012.* http://www.north-herts.gov.uk/index/environment_and_planning/environmental_protection/air_quality.htm

5) COMEAP. 1998. *Quantification of the effects of air pollution on health in the UK.*

6) House of Commons Environmental Audit Commission. March 2010. *Air Quality – Fifth Report of Session 2009-2010 Vol. 1.* www.publications.parliament.uk

Glossary

AQMA	Air Quality Management Area
AQO	Air Quality Objective
COMEAP	Committee on the Medical Effects of Air Pollution
Defra	Department for Environment, Food and Rural Affairs
EA	Environment Agency
HA	Highways Agency
HCC	Hertfordshire County Council
HGV	Heavy goods vehicle
NHDC	North Hertfordshire District Council
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
m^3	Cubic metre
O_3	Ozone
PM_{10} and $PM_{2.5}$	Particulate matter
SO_2	Sulphur dioxide
VOC	Volatile Organic Compounds
μg	microgram

APPENDIX 1: SUMMARY OF MEASURES

North Hertfordshire District Council Draft Air Quality Action Plan 2013

Summary of Measures

Measure Number	Description of Measure	Lead Responsibility	Supporting Organisations	Policy Linkages	Timescales	Target/Assessment of Success	Impact on Air Quality	Estimated NHDC Cost
1	**Partnership Working** (Liaison & joint working with: NHDC colleagues, other Local Authorities, Hertfordshire County Council and Defra)							
1.1	Inclusion of Air Quality in NHDC's Local Plan (LP) and development of a Supplementary Planning Document (SPD) for Air Quality	NHDC - Environmental Protection (EP)	NHDC - Planning Policy (PP)	LP; National Planning Policy Framework (NPPF);	2013	Air quality included in LP and SPD produced	Low - but with potential to mitigate pollution level increases associated with future growth.	No cost
1.2	Respond to planning consultations arising from air quality SPD, including consideration of S106 and/or Community Infrastructure Levy (CIL)	EP	PP and Development Control (DC)	NPPF; SPD; NHDC CIL	Ongoing	Air quality impacts considered on relevant planning applns and appropriate S106/CIL contributions obtained	Low-medium depending on developments	No cost
1.3	Liaison on Urban Transport Plans (UTPs) and Local Transport Plans (LTPs)	EP & PP	PP, HCC	Hitchin UTP; NHDC Green Travel Plan; Local Transport Plan 3 (LTP3)	Ongoing	Air quality issues considered in developing UTP and LTP initiatives	Low - but joint work increases opportunity to influence decision makers	No cost
1.4 (see also 3.2)	Investigate possibility of linking with NHDC Community Services (CS) to promote cycling/walking	EP	CS; HCC	HCC Active Travel Strategy; Hitchin UTP	2013	Establish link between change to transport mode and exercise and health	Low - but with potential to increase walking and cycling	No cost
1.5 (see also 1.4)	Link into the Public Health agenda via the Joint Strategic Needs Assessment (JSNA)	Hertfordshire Local Authority officers	HCC - Health and Wellbeing Board	Hertfordshire JSNA	2013 and ongoing	Establish presence and profile of air quality within JSNA	Low - but with potential to exert influence on decision makers	No cost

Measure Number	Description of Measure	Lead Responsibility	Supporting Organisations	Policy Linkages	Timescales	Target/Assessment of Success	Impact on Air Quality	Estimated NHDC Cost
1.6	Apply for Defra funding to help implement selected Action Plan measures	EP	Defra, HCC Transport Policy Team	LTP3	Annual applications from 2013 onwards	Successful grant applications and utilisation of funds	Dependent on the measures to be funded	Variable, external source of funding
2	**Ongoing Monitoring of Air Quality and Levels of Traffic**							
2.1	Continue to monitor air quality in the District and to keep suitability of monitoring locations under review with particular focus on the AQMA	EP	None	Part IV Environment Act 1995; NHDC corporate priority	Jan. 13, NOx monitor in Stevenage Rd Review diffusion tube network Annual Defra reporting	Automatic analyser in place at Stevenage Rd for start of 2013 Relevant diffusion tube network Annual reports accepted by Defra	Low - but provides the necessary evidence base for air quality related decision making	Within existing budgets
2.2	Establish annual traffic count location at the Hitchin Hill roundabout, Stevenage Rd	EP	HCC	LTP3	Sep. 12 with annual follow up counts	Traffic data obtained inc vehicle types	Low - but provides evidence for decision making	Est. £775.00 per count
3	**Publicity and Education to Raise Awareness of Air Pollution Issues**							
3.1 (see also 3.3, 4.8)	Utilise NHDC media resources to raise awareness within NHDC and among the community	NHDC - EP	NHDC - Communications Team	NHDC Green Travel Plan	Ongoing	Publish at least one AQ related article in NHDC News and in Outlook per year; appropriate information on website	Low - indirect impact by increasing awareness of issues	No cost
3.2 (see also 3.3)	Engage with local schools to raise air quality awareness in general & specifically with regard to travel to school	NHDC - EP	HCC - School travel plan & road safety advisors NHDC - Communications Team	HCC Active Travel Strategy Hitchin UTP relevant safer routes to school projects	Short-term(st) and Medium term (mt) targets	(st) - identify schools in vicinity of AQMA & understand current status of travel plans & general awareness (mt) - utilise outcome of Herts & Beds School Travel Plan Project (Defra	Low to Medium -depending on how many schools, their sizes & the current status of travel plan implementation	Start up project Defra funded No cost assume work can be taken on by existing staff

Measure Number	Description of Measure	Lead Responsibility	Supporting Organisations	Policy Linkages	Timescales	Target/Assessment of Success	Impact on Air Quality	Estimated NHDC Cost
						funded) Overall reduction in school commutes by road, resulting from change in mode of travel	& awareness of air quality issues	
3.3 (see also 3.1, 3.2, 1.5, 1.6, 4.4, 4.5 5.2)	Engage with local business, particularly haulage companies, public transport & taxi companies but also any companies that show an interest in improving efficiency & reducing emissions from vehicle fleet or travel planning for staff that commute	NHDC - EP & Transport Planners	HCC Transport Planners, Green Transport Initiatives, whether, private companies government, or higher education based. Energy Saving Trust	NHDC Green Travel Plan LTP3	(st), (md) (lt)	(mt) - NHDC buy into Green Travel Planning & changes to vehicle fleet (st) - awareness raising within the business community (mt - lt) uptake of travel plans & change to private company vehicle fleets	Medium to High - depending on success of awareness raising & uptake resulting in more energy efficient or alternative fuel vehicles	Low - most schemes would aim to work on an invest to save basis
4	Improving Infrastructure to Support Uptake of Alternative Modes of Transport							
4.1	Support measures to improve bus and rail usage including Intelligent Transport System (ITS), Bus Strategy, and Intralink Strategy	HCC	PP	LTP3 and daughter documents; HCC ITS Strategy; Bus Strategy;	Ongoing	Improved journey times; increased bus and rail patronage;	Low impact on Stevenage Rd because despite being congested bus traffic is 1% of total traffic	None

Measure Number	Description of Measure	Lead Responsibility	Supporting Organisations	Policy Linkages	Timescales	Target/Assessment of Success	Impact on Air Quality	Estimated NHDC Cost
4.2	Improve cycling infrastructure in Hitchin area, including provision of off-carriageway cycle route between Stevenage and Hitchin, and improved cycle network and cycle parking in Hitchin	HCC & PP	EP	LTP3, Inter-Urban Route Strategy (IURS), HCC Active Travel Strategy, Hitchin UTP	Hitchin-Stevenage cycle route 2014/2015 Hitchin cycle network & parking facilities ongoing	Cycle route implemented More cycle routes & integration with other transport modes; Improve mapping & signage	Medium - reduced vehicle movements along Stevenage Rd Medium - reduced vehicle movements in Hitchin	None Costs out-lined in Hitchin UTP; possible use of s106
4.3	Consider the quality & provision of footways & pedestrian links & signage in vicinity of Stevenage Rd in relation to key destinations	NHDC Transport	NHDC EP HCC Highways	LTP3, Hitchin UTP	Ongoing Contribute to 2015/16 & future targets for increasing % journeys on foot	Improved pedestrian priority and footpath continuity to key destinations e.g. local shops, schools, town centre, public transport. To include pedestrian crossings	Low - contribute to encouraging change of mode of travel from motor vehicles to foot for local journeys	£250,000 for toucan crossing at Stevenage Rd/Hitchin Hill. HCC or poss. s106 contribution
4.4 (see also 3.1, 3.3)	Installation of electric vehicle charging infra-structure to encourage uptake of electric vehicles	NHDC & HCC	Green Transport Initiatives, whether, private companies, government, e.g "plugged in places" and Office of Low Emission Vehicles (Olev) or higher education based	LTP3, NHDC Green Travel Plan	2013 include charging infrastructure requirements in SPD & associated planning docs 2013 ongoing	Inclusion of electric charging points in new builds via planning regime Presence of electric charging points in NHDC car parks	Medium - higher proportion of electric vehicles on NHDC roads	Low - if NHDC infra structure is externally funded & developers include in costs

Measure Number	Description of Measure	Lead Responsibility	Supporting Organisations	Policy Linkages	Timescales	Target/Assessment of Success	Impact on Air Quality	Estimated NHDC Cost
4.5 (see also 1.1, 1.2, 3.3)	Consider potential for gas or biomethane refuelling facilities at supermarkets or large commercial developments	NHDC & HCC	Retail companies & business community	LTP3, NHDC Green Travel Plan	Include in AQ SPD for adoption in 2013	Presence of gas or biomethane refueling facilities within North Hertfordshire	Medium - higher proportion of goods vehicles using alternative fuels	None if externally funded by retail companies
5	Encouraging Use of Alternative Fuels and Reducing Vehicle Emissions							
5.1	Investigate incorporation of emissions element to controlled parking zone charges	EP, PP & Parking		NHDC Parking Strategy	TBC	Implementation of new parking charges scheme incorporating emissions criteria	Low-medium depending on success in encouraging use of lower emission vehicles	Cost of implementing scheme (TBC)
5.2	Changing company fleets (inc NHDC's) to encourage use of lower emission vehicles by use of procurement and other levers	NHDC Transport, PP, EP & Legal	HCC & local business community	NHDC Green Travel Plan Local Transport Act 2008	2013 Secure agreement to principle within NHDC; 2014 Implement proposals	Principle accepted; establish baseline; improvements secured;	Low if uptake is limited to NHDC, medium if implemented outside NHDC	Low-zero in one-off vehicle purchases; zero for external fleets
6	Traffic Infrastructure Alterations							
6.1	Investigate an alternative route of access for HGVs from the east/south east to the Cadwell/Wilbury /Burymead industrial area of Hitchin	HCC and PP	Local businesses	Hitchin UTP	Not known	Assessment of practicality	Medium-High as HGVs representing 39% & LGVs representing 15% of NOx emissions at Stevenage Rd	High, if requiring new build, Low if achievable by signs or restrictions

Measure Number	Description of Measure	Lead Responsibility	Supporting Organisations	Policy Linkages	Timescales	Target/Assessment of Success	Impact on Air Quality	Estimated NHDC Cost
6.2	Investigate impact of altering current bus-stop locations on Stevenage Road to disperse impact of idling & reduce congestion	HCC transport planners	PP	HCC bus strategy	Not known	Assessment of practicality Implementation or not	Low	HCC cost?
6.3	Review parking provision and restrictions along Stevenage Road with the aim of reducing congestion	PP		Hitchin UTP NHDC parking strategy	Not known	Assessment of practicality Implementation or not	Low	Low
6.4	Investigate improvements to layout of Stevenage Road to ease congestion	HCC & PP		Hitchin UTP	Not known	Assessment of practicality Implementation or not	Low	HCC cost?