



Report for:	Strategic Planning and Environment Overview and Scrutiny Committee
Date of meeting:	21 November 2017
Part:	I
If Part II, reason:	

Title of report:	Air Quality Update
Contact:	Janice Marshall, Portfolio Holder for Environmental, Sustainability and Regulatory Services Author/Responsible Officer Danielle Newnham Scientific Officer Andrew Walker, Team Leader (Environmental Protection and Housing)
Purpose of report:	To provide Members with an update regards air quality
Recommendations	For information only.
Corporate objectives:	A Clean, Safe and Enjoyable Environment
Implications:	<u>Financial</u> None.
'Value for money' implications	<u>Value for money</u> Exercising statutory duty within existing budget arrangements plus external funding from DEFRA and Hertfordshire County Council Public Health.
Risk implications	Risk Assessment completed for each service area as part of service planning and reviewed quarterly. Key risks are recorded on the Council's Risk Register which has been updated recently. If statutory duties around Local Air Quality Management are not achieved there are the following implications:

	<ul style="list-style-type: none"> • Potentially public health put at risk • Legal action taken against the Council • Reputational damage to Council
Equality Impact Assessment	Equality issues addressed in improving Air Quality as studies show that lowest socio-economic groups tend to live in and be disproportionately affected by areas of air pollution (Marmot Review 2010)
Health and safety Implications	None
Consultees:	Widespread public consultation in developing and publishing Air Quality Action Plans (including letters to all residents with Air Quality Management Areas)
Background papers:	Air Quality Action Plan 2015 - 2018, December 2014
Historical background <i>(please give a brief background to this report to enable it to be considered in the right context).</i>	See Section 1 below.
Glossary of acronyms and any other abbreviations used in this report:	See below.

1. Background

Part IV of the Environment Act 1995 requires 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 annual mean air quality objective for nitrogen dioxide (NO₂) (40µg/m³) would not be met, these areas are:

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

Following the formal declaration of the three AQMAs, Dacorum Borough Council commissioned the undertaking of a Further Assessment, which was published in March 2013. This included air quality modelling, source apportionment (i.e. a breakdown of contributors by source) and calculated the degree of improvement needed in order for the annual mean objective to be achieved. The assessment

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 as a precautionary approach. The source apportionment exercise indicated that ambient background concentrations contributed 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. 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).

Based on the conclusions of the Further Assessment; the High Street, Northchurch AQMA boundary was extended to incorporate 86 - 94 High Street. The AQMA boundary amendment was subject to a consultation period, which finished on 3 July 2013.

The AQAP was produced in 2014 and approved by Cabinet on 16 December 2014 and formally adopted. The AQAP was subjected to statutory and public consultation and amended accordingly prior to formal adoption. The Plan contains twenty air quality improvement measures proposed for implementation over a three year period (2015 – 2018).

The Council continues to monitor air quality (specifically NO₂) at fifty six locations across the borough using passive diffusion tubes. Multiple (three) diffusion tubes are exposed at some individual monitoring sites within the borough, predominantly within the AQMAs to improve precision and accuracy. Individual diffusion tubes at triplicate monitoring sites are denoted by the suffix A, B and C (i.e. High Street, Northchurch A, B and C). For reporting purposes an average concentration per triplicate monitoring site is calculated, however the individual diffusion tube results are presented in this report to provide additional detail.

A real-time analyser is positioned adjacent to High Street, Northchurch, which records concentrations of NO₂ and Particulate Matter (PM); this data is uploaded to the Hertfordshire and Bedfordshire Air Quality Network website www.airqualityhertsbeds.co.uk on an hourly basis.

2. Air Quality Update

Air Quality data for the last three years is discussed within this report (results obtained since the publication of the AQAP).

2.1 Air Quality Monitoring Data 2014

Bias adjusted passive diffusion tube data for 2014 indicated that the annual mean air quality objective for NO₂ was exceeded at eleven monitoring sites within the borough, specifically:

- High Street, Northchurch (A, B and C)
- Watford Road, Kings Langley
- Lawn Lane, Hemel Hempstead 1 (A, B and C)
- Lawn Lane, Hemel Hempstead 3 (A, B and C)
- London Road, Apsley (A, B and C)
- Avia Close, Apsley
- Former Sappi Graphics, Hemel Hempstead
- Health Centre, London Road, Apsley (A, B and C)

- Lower Kings Road, Berkhamsted
- The Point, Hemel Hempstead (A, B and C)
- Bridge Street, Hemel Hempstead

With the exception of Watford Road, Kings Langley; Former Sappi Graphics, Hemel Hempstead; Lower Kings Road, Berkhamsted; The Point, Hemel Hempstead and Bridge Street, Hemel Hempstead all other monitoring sites exhibiting exceedances were situated within the three AQMAs.

Further action is only required where an air quality exceedance is identified at a point of 'Relevant Exposure' i.e. where receptors are present for the duration of the objective. In the case of the annual mean objective for NO₂, examples would be the façade of a residential building, school, hospital etc.

The Lower Kings Road, Berkhamsted monitoring site is representative of relevant exposure.

No relevant exposure is apparent at the following monitoring sites:

- Watford Road, Kings Langley
- Former Sappi Graphics, Hemel Hempstead
- The Point, Hemel Hempstead

Utilising current guidance/calculations, the annual average NO₂ concentration at the nearest receptor/site of relevant exposure was estimated to be 32.3 µg/m³ at the Watford Road, Kings Langley monitoring site and 27.8 µg/m³ at the Former Sappi Graphics, Hemel Hempstead monitoring site, therefore below the relevant air quality objective in both cases. In respect of The Point, Hemel Hempstead, this monitoring site is located immediately adjacent to 'The Plough Roundabout'. The closest existing residential receptor is located approximately 36 metres to the east-northeast. Lawn Lane intersects the pathway between the monitoring site and the nearest existing residential receptor. The monitoring site was commissioned in order to establish current NO₂ concentrations at this particular location in response to a pre-application enquiry for 25 one-bedroom residential units on the site of the current car wash. Following advice from Defra, it was considered that estimating the annual average NO₂ concentration at the nearest receptor/site of relevant exposure (a property on Lawn Lane) would not be accurate, representative or relevant.

Annual mean NO₂ concentrations of >36µg/m³ (i.e. approaching the annual mean air quality objective) were recorded at nine monitoring sites in 2014, specifically:

- High Street, Berkhamsted
- New Road, Northchurch (A, B and C)
- Lawn Lane, Hemel Hempstead 2 (A)
- Belswains Lane, Hemel Hempstead
- Lawn Lane, Hemel Hempstead 4
- The Cotterells, Hemel Hempstead
- Durrants Hill Road, Apsley (B)
- High Street, Berkhamsted 2
- Outside 158 Marlowes, Hemel Hempstead

Of the nine monitoring sites approaching the annual mean air quality objective for NO₂ in 2014 (>36 µg/m³); three were situated within existing AQMAs and six were not.

Annual mean NO₂ concentrations were bias adjusted by a factor of 0.88. This bias adjustment factor was derived by Dacorum Borough Council's local co-location study.

The real-time analyser recorded an annual mean NO₂ concentration of 30.0µg/m³ for 2014. No exceedances of the 1-hour mean objective for NO₂ (200µg/m³ not to be exceeded more than 18 times a year) occurred during 2014.

2.2 Air Quality Monitoring Data 2015

Bias adjusted passive diffusion tube data for 2015 indicated that the annual mean air quality objective for NO₂ was exceeded at eight monitoring sites within the borough, specifically:

- High Street, Northchurch (A, B and C)
- Watford Road, Kings Langley
- Lawn Lane, Hemel Hempstead 1 (A, B and C)
- Lawn Lane, Hemel Hempstead 3 (A, B and C)
- London Road, Apsley (A, B and C)
- Avia Close, Apsley
- Lower Kings Road, Berkhamsted
- The Point, Hemel Hempstead (A)

With the exception of Watford Road, Kings Langley; Lower Kings Road, Berkhamsted and The Point, Hemel Hempstead all other monitoring sites exhibiting exceedances were situated within the three AQMAs.

The Lower Kings Road, Berkhamsted monitoring site is representative of relevant exposure.

As previously stated no relevant exposure is apparent at the following monitoring sites:

- Watford Road, Kings Langley
- The Point, Hemel Hempstead

Utilising current guidance/calculations, the annual average NO₂ concentration at the nearest receptor/site of relevant exposure was estimated to be 29.6 µg/m³ at the Watford Road, Kings Langley monitoring site. For reasons previously explained, the annual average NO₂ concentration at the nearest receptor/site of relevant exposure in respect of The Point, Hemel Hempstead, had not been calculated.

Annual mean NO₂ concentrations of >36µg/m³ (i.e. approaching the annual mean air quality objective) were recorded at six monitoring sites in 2015, specifically:

- Lawn Lane, Hemel Hempstead 4;
- Former Sappi Graphics, Hemel Hempstead
- Health Centre, London Road, Apsley (A, B and C)
- New Road, Northchurch (B)
- The Point, Hemel Hempstead (B and C)
- Bridge Street, Hemel Hempstead

Of the six monitoring sites approaching the annual mean air quality objective for NO₂ in 2015 (>36µg/m³); two were situated within existing AQMAs and four were not.

Annual mean NO₂ concentrations for 2015 were bias adjusted by a factor of 0.85. This bias adjustment factor was derived by Dacorum Borough Council's local co-location study.

The real-time NO₂ analyser recorded an annual mean NO₂ concentration of 26.0µg/m³ for 2015. No exceedances of the 1-hour mean objective for NO₂ (200µg/m³ not to be exceeded more than 18 times a year) occurred during 2015.

The real-time PM analyser recorded an annual mean PM₁₀ concentration of 13µg/m³. The annual mean air quality objective for PM₁₀ (Gravimetric) is 40µg/m³. 1no. exceedance of the 24-hour mean objective for PM₁₀ (Gravimetric) occurred during 2015. The 24-hour mean objective is 50µg/m³ not to be exceeded more than 35 times a year.

The real-time PM analyser recorded an annual mean for PM_{2.5} of 8µg/m³. There is no national air quality objective for PM_{2.5}. The EU limit value is 25µg/m³ as an annual mean (Directive 2008/50/EC).

In relation to PM, the instrument was commissioned on 12 August 2015, therefore data capture for 2015 was limited (38.7%).

2.3 Air Quality Monitoring Data 2016

Bias adjusted passive diffusion tube data for 2016 indicated that the annual mean air quality objective for NO₂ was exceeded at seven monitoring sites within the borough, specifically:

- High Street, Northchurch (A, B and C)
- Watford Road, Kings Langley
- Lawn Lane, Hemel Hempstead 1 (A, B and C)
- Lawn Lane, Hemel Hempstead 2 (B)
- Lawn Lane, Hemel Hempstead 3 (A, B and C)
- London Road, Apsley (A, B and C)
- The Point, Hemel Hempstead (C)

With the exception of Watford Road, Kings Langley and The Point, Hemel Hempstead all other monitoring sites exhibiting exceedances were situated within the three AQMAs.

As previously stated no relevant exposure is apparent at the following monitoring sites:

- Watford Road, Kings Langley
- The Point, Hemel Hempstead

Utilising current guidance/calculations, the annual average NO₂ concentration at the nearest receptor/site of relevant exposure was estimated to be 28.4 µg/m³ at the Watford Road, Kings Langley monitoring site. For reasons previously explained, the annual average NO₂ concentration at the nearest receptor/site of relevant exposure in respect of The Point, Hemel Hempstead, has not been calculated.

Annual mean NO₂ concentrations of >36µg/m³ (i.e. approaching the annual mean air quality objective) were recorded at seven monitoring sites in 2016, specifically:

- Lawn Lane, Hemel Hempstead 4
- Avia Close, Apsley
- Former Sappi Graphics, Hemel Hempstead
- New Road, Northchurch (B and C)
- Health Centre, London Road, Apsley(B and C)
- Lower Kings Road, Berkhamsted
- The Point, Hemel Hempstead (A and B)

Of the seven monitoring sites approaching the annual mean air quality objective for NO₂ in 2016 (>36µg/m³); three were situated within existing AQMAs and four were not.

Annual mean NO₂ concentrations for 2016 were bias adjusted by a factor of 0.81. This bias adjustment factor was derived by Dacorum Borough Council's local co-location study.

The real-time NO₂ analyser recorded an annual mean NO₂ concentration of 29µg/m³ for 2016. No exceedances of the 1-hour mean objective for NO₂ (200µg/m³ not to be exceeded more than 18 times a year) occurred during 2016.

The real-time PM analyser recorded an annual mean PM₁₀ concentration of 12µg/m³. 1no. exceedance of the 24-hour mean objective for PM10 (Gravimetric) occurred during 2016.

The real-time PM analyser recorded an annual mean for PM2.5 of 8µg/m³.

2.4 Lower Kings Road, Berkhamsted – Further Action

With regards to the Lower Kings Road monitoring site, the monitoring data for 2014 to 2016 has indicated exceedances of the annual mean NO₂ concentration in 2014 and 2015. The annual mean NO₂ objective was not exceeded in 2016. In terms of the further action, Defra have advised Regulatory Services should await the results of the 2017 data before taking further action. An exceedance for 2017 would form a just cause to declare an AQMA.

2.5 Air Quality Action Plan 2015 – 2018 Progress

The Air Quality Action Plan 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. These measures have been grouped into four '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).

The four 'Packages of Measures' are:

- 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 progress to date is detailed for each measure individually in the following below.

Package of Measures 1: Reducing emissions via strategic measures

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 (LTP)		
Definition	Measure / Indicator	Progress to date
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. (Long-term action)	<p>The Draft LTP4 (currently out for consultation) acknowledges the air quality issues in the County and includes an air quality policy statement that says that Hertfordshire County Council <i>'will work with district/borough councils to monitor and assess air pollution levels, and working in partnership with them to deliver any declared AQMA joint action plans'</i>.</p> <p>Previously, Hertfordshire County Council integrated the individual Action Plans for each AQMA into the LTP, by producing an AQMA monitoring report annually that was included as an appendix to their LTP Annual Progress Report. Annual monitoring format for the new LTP4 yet to be finalised, likely to require the production of an air quality monitoring report, as part of Hertfordshire County Council's annual monitoring process.</p>
Responsibility		
Hertfordshire County Council and Dacorum Borough Council		

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	Progress to date
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.	Awaiting specific figures from Development Control. This information will be provided annually via the Air Quality Annual Status Report to Defra. Regulatory Services requests Air Quality Assessments at the planning consultation stage for all developments which meet the criteria set out in EPUK/IAQM guidance entitled ' <i>Land-Use Planning & Developments Control: Planning for Air Quality</i> ' (January 2017).
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.	Awaiting specific figures from Development Control. This information will be provided annually via the Air Quality Annual Status Report to Defra. Majority of Air Quality Assessments consider construction phase impacts (if deemed relevant).
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.	Awaiting specific figures from Development Control. This information will be provided annually via the Air Quality Annual Status Report to Defra.

		<p>Informative recommending good practice principles (as contained within Chapter 5 of the EPUK/IAQM guidance) now included on all application meeting the following criteria:</p> <ul style="list-style-type: none"> • No. of proposed dwellings is 10 or above • Residential development on a site of more than 0.5ha • More than 1000m² of commercial floorspace • Development carried out on land if 1ha or more
Produce Supplementary Planning Document / Technical Guidance for Hertfordshire and Bedfordshire.	Guidance published and followed. December 2015.	Hertfordshire and Bedfordshire Air Quality Forum working together. North Hertfordshire District Council have produced an Air Quality Guidance Document, which is available for all Herts and Beds Local Authorities to use. Hertfordshire County Council Public Health are keen to see this widely utilised. A template memorandum has also been produced for Air Quality Officers to use to communicate to their colleagues in Development Control. Initial discussions with Development Control re: introduction of a Herts & Beds Air Quality guidance document.
<p>Responsibility Dacorum Borough Council: Regulatory Services, Strategic Planning and Regeneration, Development Control.</p>		

In addition to the above, it has been recognised that a closer working relationship is needed between Strategic Planning and Regulatory Services regards air quality as early involvement where this may be a potential constraint is essential. Closer working relationship currently being developed.

Measure	Title	
3	Improve links with Public Health	
Key Intervention		
Strengthen the link between Public Health and air quality		
Definition	Measure / Indicator	Progress to date
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 is considered wherever relevant. Creation of Hertfordshire Air Quality Strategy. December 2015.	The Air Quality Strategic Plan for Hertfordshire was published in June 2015. The Public Health Air Quality Planning Group discusses the delivery of the strategy. Dacorum Borough Council are invited to attend the Public Health Air Quality Planning Group.
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.	Dacorum was awarded £20,000 from Hertfordshire County Council Public Health for Particulate Matter monitoring. Bought 'Fidas 200'. Commissioned August 2015 in Northchurch. Monitoring results reported to Hertfordshire County Council. Air Alert is not being taken further. Considered that those living and working in Hertfordshire can currently sign up to air quality alerts and forecasts through the DEFRA twitter account and/or email bulletin, and access DEFRA alert information through the Health in Herts Healthy Places webpage. The Herts_AQ_Update twitter account provides information about the DEFRA alerts. Hertfordshire County Council consider that promoting sign up to these free national alert systems is the best current no cost option for an air quality alert system.
Responsibility		
Hertfordshire County Council, Dacorum Borough Council (and other Local Authorities across County).		

Package of Measures 2: Optimising traffic flow through the 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	Progress to date
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.	Lawn Lane junction and crossing opportunities included in shortlist for future scheme investigation. Two Waters junction included in the highways aspects of the Two Waters Masterplan.
Responsibility		
Hertfordshire County Council - Highways		

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	Progress to date
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.	No progress to report to date.
Responsibility		
Hertfordshire County Council – Highways and Dacorum Borough Council		

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	Progress to date
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.	Congestion Working Group was previously set up, mainly to tackle congestion in the southwest Hertfordshire area. Hertfordshire County Council have moved away from honing in on congestion per se as this would be picked up in other areas, and the priority is enhancing sustainable travel. Congestion Action Plan no longer relevant.
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.	As above.
Responsibility		
Hertfordshire County Council – Policy Team		

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	Progress to date
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.	No progress to report to date. There is an opportunity to cover this in the Growth Transport Plan (GTP).
Investigate the possibility of altering satellite navigation routes to avoid AQMAs where possible.	Undertake investigation into satellite navigation rerouting. April 2016.	No progress to report to date. There is an opportunity to cover this in the GTP.

Responsibility	
Hertfordshire County Council – Highways and Dacorum Borough Council	

Measure	Title	
8	Potential relocation of bus stops	
Key Intervention		
Determine significance of stationary buses on congestion within the AQMAs.		
Definition	Measure / Indicator	Progress to date
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.	Funding bids to pursue this action have been unsuccessful to date. Strong local opposition.
Responsibility		
Hertfordshire County Council – Passenger Transport		

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	Progress to date
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.	Hourly NO ₂ concentrations were obtained from the analyser and average hourly concentrations calculated for term time, school holidays and weekends. The graphs produced indicated a significant morning and afternoon peak in average hourly NO ₂ concentrations during term time, which was more pronounced than school holidays and weekends. This would indicate that school traffic has a significant effect on hourly NO ₂ concentrations at High Street, Northchurch.
Responsibility		

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	Progress to date
Investigate the provision of on-street parking to determine its contribution to congestion within the AQMA and explore possibilities for relocation outside if the AQMA.	Undertake on-street parking investigation. April 2016.	Funding bids to pursue this action have been unsuccessful to date. Strong local opposition. Expensive to trial. Need to relocate parking – no obvious alternatives.
Responsibility		
Hertfordshire County Council – Highways and Dacorum Borough Council		

Package of Measures 3: Reducing transport emissions

Measure	Title	
11	Promote the use of electric vehicles (EV)	
Key Intervention		
Encourage the uptake and use of electric vehicles		
Definition	Measure / Indicator	Progress to date
Communicate the benefits of EVs to residents and businesses. Publicise central government grants and tax incentives available.	No. of EV enquiries. Report annually.	No specific EV enquires received by Regulatory Services (with the exception of one relating to the transition from free to chargeable electricity at Canal Fields charge point). This information is to be provided annually via the Air Quality Annual Status Report to Defra. Digital display boards within the Forum now include details of existing publically

		<p>available EV charge points and the benefits of EVs.</p> <p>Dacorum Borough Council webpage also set up.</p>
Explore the possibility of providing local incentives, such as the waiving of car park charges or priority parking for electric (plug in and hybrid) vehicles throughout the borough.	Undertake sufficient research to conclude whether incentives are viable. April 2016.	No progress to report to date.
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.	<p>This information is to be provided annually via the Air Quality Annual Status Report to Defra.</p> <p>Dacorum BC awarded £9,000 following successful bid application for Air Quality Grant funding to install EV highway signage to indicate existence of current charge points. Money received February 2017. Signage design and locations agreed and currently being ordered.</p>
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.	<p>This information is to be provided annually via the Air Quality Annual Status Report to Defra.</p> <p>No bid applications made for further EV charge points to date.</p> <p>E-Car Club for Dacorum Borough Council staff and residents no longer deemed viable. Not being taken further.</p>
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.	<p>Awaiting figures from Procurement.</p> <p>General benefits of EVs advertised on digital display boards in the Forum and on</p>

		<p>webpage.</p> <p>This information is to be provided annually via the Air Quality Annual Status Report to Defra.</p>
Encourage the installation of EV charging points in new developments.	<p>No. of new developments with EV charge points. Report annually.</p>	<p>Awaiting figures from Development Control.</p> <p>Informative recommending good practice principles (as contained within Chapter 5 of the EPUK/IAQM guidance) now included on all application meeting the following criteria:</p> <ul style="list-style-type: none"> • No. of proposed dwellings is 10 or above • Residential development on a site of more than 0.5ha • More than 1000m² of commercial floorspace • Development carried out on land if 1ha or more. <p>This includes the provision of 1 rapid charge EV charge point per 10 residential units and/or 1000m² of commercial floorspace.</p> <p>This information is to be provided annually via the Air Quality Annual Status Report to Defra.</p>
Promotion of the Maylands EV car club.	<p>No. of new EV car club members and percentage increase in usage. Ongoing. Report annually.</p>	<p>Maylands EV car club folded immediately the LSTF funding ran out.</p>
Investigate possibility of E-Car Club for Council Staff and residents in Dacorum.	<p>Undertake sufficient research to conclude if viable.</p>	<p>E-Car Club for Dacorum Borough Council staff and residents no longer deemed</p>

		viable. Not to be taken further.
Responsibility		
Hertfordshire County Council and Dacorum Borough Council		

Measure	Title	
12	Promote car share schemes	
Key Intervention		
Increase awareness and uptake of existing car share schemes		
Definition	Measure / Indicator	Progress to date
Promote existing car share schemes 'Herts Liftshare' and 'Maylands Car Share Scheme'.	Increase in no. of registered members. Report annually.	<p>Maylands Liftshare folded immediately the LSTF funding ran out with barely 100 people signed up.</p> <p>Amazon have launched a closed Liftshare group and may allow adjacent businesses to join.</p> <p>Hertfordshire County Council made an offer to the Maylands Distribution Group that companies with <250 employees can get a free closed scheme under the Hertfordshire County Council Herts Liftshare umbrella contract.</p>
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.	No progress to report to date.
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.	No progress to report to date.
Responsibility		
Hertfordshire County Council and Dacorum Borough Council.		

Measure	Title	
13	Green incentives for taxi drivers	
Key Intervention		
Encourage Taxi companies / drivers to use less polluting vehicles		
Definition	Measure / Indicator	Progress to date
Explore the possibility of offering a subsidy to taxi companies and drivers who licence newer or cleaner (e.g. electric) vehicles.	Discuss with Dacorum Borough Council Licensing to determine viability and possible implementation. December 2016.	Initial discussions with Dacorum Borough Council Licensing department and also other Local Authority Licensing departments. Successfully implemented elsewhere, however some reservations and queries from Ross Hill regards altering fees and charges. Fees and charges not considerable so won't be able to offer a big enough incentive etc. Further discussions required. Other potential opportunities being explored by Sustainability Officer re: electric taxis.
Responsibility		
Dacorum Borough Council – Regulatory Services and Legal Governance		

Measure	Title	
14	Reducing emissions from good vehicles within the AQMAs	
Key Intervention		
Target reduced emissions from LGVs and HGVs operating within the three AQMAs		
Definition	Measure / Indicator	Progress to date
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.	No progress to report to date.
Liaise with businesses within the London Road, Apsley	Initiate meeting with local businesses and	No progress to report to date.

and High Street, Northchurch AQMAs to establish the potential for limiting delivery times to outside of peak traffic times.	report outcomes. December 2017.	
Investigate ways to reduce the volume of freight traffic passing through the AQMAs.	Undertake investigation. December 2015.	No progress to report to date.
Responsibility		
Dacorum Borough Council – Regulatory Services		

Measure	Title	
15	Reducing emissions from Council fleet	
Key Intervention		
Target reduced emissions from Council fleet vehicles		
Definition	Measure / Indicator	Progress to date
Continue to target reductions in emissions from the Council's transport fleet.	Environmental management system performance indicator for annual fuel usage reduction. Report annually and ongoing.	This is recorded by Finance monthly and emailed to our Environmental Sustainability Officer and uploaded onto CORVU. Findings to be incorporated within the Council's Air Quality Annual Status Report to Defra.
Continue to consider fuel consumption figures and CO ₂ emissions during the procurement process.	No. of vehicles purchased / leased. December 2015.	This is now a legal requirement; all new vehicles purchased have to meet Euro Emission Standards Euro 6 (2014) standards.
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.	SERCO now do salaries and will not release mileage information, so no way of continuing this.
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.	SERCO now do salaries and will not release mileage information, so no way of continuing this.
Support the adoption and implementation of a corporate travel plan for the Council.	Creation and adoption of a corporate travel plan. December 2016.	Sustainable Travel Plan produced for The Forum by Aecom. This needs to be converted into a practical plan for Dacorum Borough Council. Environmental Sustainability Officer provisionally nominated to co-ordinate.

		3 x pool bicycles to be available to Council staff as of March 2017.
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.	E-Car Club for Dacorum Borough Council no longer considered viable. Not to be taken further.
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.	EVs and hybrids are part of the lease car offering to employees. Figures to be incorporated within the Council's Air Quality Annual Status Report to Defra.
Responsibility		
Dacorum Borough Council – Regulatory Services, Finance, Procurement and Fleet Manager.		

Measure	Title	
16	Encouraging smarter driving	
Key Intervention		
Raise awareness of the benefits of smarter driving techniques		
Definition	Measure / Indicator	Progress to date
Undertake awareness raising to encourage residents and businesses to adopt smarter driving methods.	Incorporating messages into relevant communication channels and campaigns. December 2016.	Digital display boards within the Forum now include smart driving tips. Dacorum webpage created, which includes describes what smart driving is and tips.
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.	No progress to report to date.
Responsibility		
Dacorum Borough Council – Regulatory Services		

Package of Measures 4: Promoting sustainable transport options

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	Progress to date
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.	Awaiting figures from Hertfordshire County Council. Annual reporting to be incorporated within the Council's Air Quality Annual Status Report to Defra.
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.	Hertfordshire County Council Schools Team to co-ordinate. Awaiting figures. Annual reporting to be incorporated within the Council's Air Quality Annual Status Report to Defra.
Support the creation of a corporate travel plan for the Council.	Creation of a corporate travel plan for the Council. December 2016.	Sustainable Travel Plan produced for The Forum by Aecom. Needs to be converted into a practical plan for Dacorum Borough Council. Environmental Sustainability Officer provisionally nominated to co-ordinate.
Responsibility		
Hertfordshire County Council – Schools Team and Dacorum Borough Council.		

Measure	Title	
18	Promote walking and cycling	
Key Intervention		
Encourage a shift to more sustainable, healthier forms of travel.		
Definition	Measure / Indicator	Progress to date
Support and promote local walking groups.	No. of new members.	Hertfordshire Health Walks – pre-arranged weekly group walks within each borough/district. Scheme

		<p>received no financial support from Dacorum Borough Council.</p> <p>Context of the scheme is available here https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/countryside-management/walking-events/hertfordshire-health-walk-events.aspx</p> <p>Dacorum performance figures for 2016/17 financial year:</p> <ul style="list-style-type: none"> • Total attendance: 13626 • Number of new walkers: 233 • Number of guest walkers: 45 • Number of volunteer leaders: 45 • Number of individual walkers: 791 • Number of walks: 489 • Number of walks with walkers: 479
Support the Council's Cycling Strategy.	Meet targets contained with the strategy.	No specific involvement from Regulatory Services to date.
Support and promote the Council's 'Cycle to Work' and 'Cycle Loan' schemes.	No. of applicants. Report annually.	Internal promotion undertaken by Environmental Sustainability Officer and Communications. Figures to be reported within the Council's Air Quality Annual Status Report to Defra.
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.	Internal promotion undertaken by Environmental Sustainability Officer and Communications. Figures to be reported within the Council's Air Quality Annual Status Report to Defra.
Encourage Council employees to walk/cycle to work.	No. of promotional campaigns. No. of employees walking/cycling to work. Report annually.	Internal promotion undertaken by Environmental Sustainability Officer and Communications. Figures to be reported within the Council's Air Quality Annual Status Report to Defra.
Responsibility		
Dacorum Borough Council – Regulatory Services		

Relevant data obtained from Department for Transport National Travel Survey. Nationally most of the trips people made in 2016 were by car, either as a driver or a passenger (62%), or by walking (25%). 87% of all trips were accounted for by these modes of transport. Data available for regions.

In addition to the above, in November 2016, Dacorum submitted a bid application to Defra for Air Quality funding – requesting £175,000 to fund towpath upgrade (remaining unsurfaced stretch between Kings Langley and Hemel Hempstead – confirmed unsuccessful).

The production of a management plan for the Dacorum section of the Nickey Line is being undertaken by the Countryside Management Service on behalf of Environmental Services and will focus on improving the route for public access, non-motorised transport and biodiversity.

Measure	Title	
19	Promote the use of public transport	
Key Intervention		
Encourage a shift to more sustainable forms of transport.		
Definition	Measure / Indicator	Progress to date (February 2017)
Support Hertfordshire's Bus Strategy.	Meet targets contained with the strategy.	No contribution from Regulatory Services to report to date.
Promote available public transport discounts.	Increased bus patronage. April 2015.	No progress to report to date.
Support and promote existing bus routes (e.g. ML1 and ML2).	Increased bus patronage. April 2015.	No progress to report to date. ML1 is operational with a revised route. ML2 has not run since around 2015.
Investigate gaps in bus service (routes and timetabling)	Identify gaps and opportunities for improvement. December 2016.	No progress to report to date.
Responsibility		
Hertfordshire County Council and Dacorum Borough Council		

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	Progress to date
Publicise the results of the Hemel Hempstead	Ensure the findings of the Hemel	Results of Hemel Hempstead

<p>TravelSmart project.</p>	<p>Hempstead TravelSmart project are widely publicised through the relevant communication channels (including the Council's Air Quality webpage). April 2015.</p>	<p>TravelSmart project were not as positive as previous projects (e.g. Watford and St Albans). However, the Active Travel Map produced for the TravelSmart project was the first walking/cycling map ever produced for Hemel Hempstead.</p>
<p>Explore opportunities for further TravelSmart projects within the borough.</p>	<p>Identify further areas and potential sources of funding. December 2016.</p>	<p>Sustrans have tried to get funding for work in schools. Funding is an issue. If funding allows, Sustrans would like to run another TravelSmart project in a few years. Sustrans were also working on another relatively small project called 'Active Explore' to reward people who travel by foot and cycle to certain locations in the Hemel area.</p>
<p>Responsibility</p>		
<p>Dacorum Borough Council – Regulatory Services.</p>		

Glossary:

$\mu\text{g}/\text{m}^3$	Microgrammes per cubic metre
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
Defra	Department for the Environment and Rural Affairs
E-Car	Electric Car
EPUK	Environmental Protection UK
EV	Electric Vehicles
GTP	Growth Transport Plan
IAQM	Institute of Air Quality Management
LTP	Local Transport Plan
NO_2	Nitrogen Dioxide
PM	Particulate Matter
$\text{PM}_{2.5}$	Fine Particulate Matter (up to 2.5 micrometres)
PM_{10}	Particulate Matter (up to 10 micrometres)