



Dacorum Borough Council Draft Air Quality Action Plan

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

2019 – 2024

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1. Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the actions we will take to improve air quality in Dacorum from 2019 to 2024.

This draft action plan replaces the previous action plan which ran from 2015 – 2018. This version of the AQAP contains suggested measures to address air quality in Dacorum. It incorporates a mix of measures from the previous AQAP and a number of new measures where further work is required develop these concepts in further detail as well as a consideration of their cost-effectiveness, feasibility and acceptability, as per the requirements of the action planning process.

The latest revision of the AQAP proposes a number of measures which directly address emissions from road transport sources, such as feasibility for a Clean Air Zone (CAZ) and a work place parking levy (WPL). These measures are recommended alongside retaining a number of measures from the previous AQAP. The key reasons for justifying the approach laid out in this AQAP are largely fourfold. These are:

- Despite monitoring within the Lawn Lane and London Road AQMA identifies a general overall reduction in monitored ambient nitrogen dioxide levels, when comparing 2013 with 2017 results, these levels remain well above objective limits for this pollutant (levels range from 45 – 56 microgrammes ($\mu\text{g}\text{m}^{-3}$)).
- The potential for fines arising from the instigation of infraction proceedings against the UK by the European Commission for a breach of nitrogen dioxide limit values under the under the EU Air Quality Directive¹. The UK may be subject to fines, of which a proportion may be passed down to local authorities under the Localism Act. Until a Brexit deal has been finalised, this item remains an uncertainty.

¹ Air Pollution Infraction Fines [Online]. Accessed 07/02/19
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/311450/Annex_B_Letter_to_LAs_on_NO2_infraction.pdf

- Repeated high court challenges against the UK government over harmful levels of air pollution, that measures at a strategic level have not gone far enough and the current policy on air pollution ruled as ‘unlawful’².
- Growing evidence of the impacts on health due to exposure to poor air quality.

Measures that have been supported by the previous action plan include:

- Improving links with the Local Transport Plan and with Public Health – Partners from Hertfordshire County Council (HCC) Highways and Public Health Teams are regular attendees to meetings of the Herts and Beds Air Quality Network.
- Incorporation of policies specific to air quality with the latest revision of Local Transport Plan 4 (LTP4). The LTP4 also recognises the damaging effect of air quality on health and integrates the public health concerns into the plan.
- The development of a draft Growth and Transport Plan (GTP) which is a daughter document of the LTP4. The stated intention of the GTP is the promotion of modal shift to non-motorised and public transport, providing greater modal choice, and facilitating growth sustainably. The GTP has set 7 objectives of which there 2 specific to air quality.

Air pollution is associated with a number of adverse health impacts. Health evidence linked to exposure to poor air quality is recognised at a local and national level. LTP4 states³;

‘One of the most direct impacts on health by transport is through lives lost and life limiting conditions caused by road collisions and poor air quality. There is evidence to suggest that the premature deaths (40-50,000 per year in the UK) caused by poor air quality in the UK dwarfs the number of deaths caused by road casualties (1,732 in 2015 in Great Britain), and public awareness of poor air quality, its impacts and the contribution of transport to this has grown in recent years’.

² Air pollution: UK government loses third court case as plans ruled 'unlawful' [Online]. Accessed 07/02/19 <https://www.theguardian.com/environment/2018/feb/21/high-court-rules-uk-air-pollution-plans-unlawful>

³ Hertfordshire County Council [2018] Hertfordshire’s Local Transport Plan

The UK Government's own Clean Air Strategy⁴ suggests the health impact is lower, but still significant, stating that exposure to man made air pollution has an impact on shortening life spans which is equivalent to 28,000 – 36,000 deaths.

Air pollution is also associated with a number of other adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer as well conditions caused or exacerbated by air quality (e.g. asthma, bronchitis, COPD). Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{5,6}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion⁷. Dacorum Borough Council is committed to reducing the exposure of people in Dacorum to poor air quality in order to improve health.

The Council's suggested actions is based on achieving an overall emissions reduction across the borough through supporting and accelerating the uptake of low emission vehicles, recognising that in some cases this will also benefit of areas of policy, e.g. climate change, carbon reduction, public health outcomes, transport.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are a large number of air quality policy areas that are outside of our influence (such as national vehicle taxation policy and Euro standards), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond Dacorum's direct influence.

⁴ Department for Environment, Food and Rural Affairs [2019] Clean Air Strategy 2019.

⁵ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

⁶ Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

⁷ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

Responsibilities and Commitment

This AQAP was prepared by the Environmental and Community Protection Department of Dacorum Borough Council with the support and agreement of the following officers and departments:

List officers/departments involved in the preparation of the AQAP

This AQAP has been approved by:

<Details of high level Council members who have approved the AQAP (This could also include support from County Councils or from Highways England where appropriate) e.g. Head of Transport Planning, Head of Public Health, with e-signature>.

This AQAP will be subject to an annual review, appraisal of progress and reporting to the relevant Council Committee (specify if relevant). Progress each year will be reported in the Annual Status Reports (ASRs) produced by Dacorum Borough Council, as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP please send them to Neil Polden at:

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2. Introduction

This local Air Quality Action Plan (AQAP) sets out a draft work programme for the improvement of air quality within the borough of Dacorum. It revises and replaces the previous AQAP which ran from 2015 – 2018. The work is led by Dacorum Borough Council (hereon referred to as ‘the Council’) and implemented in partnership with the Local Transport Authority (hereon referred to as “the County Council”).

Previous rounds of review and assessment undertaken by the Council have identified locations in the district as unlikely to meet the national objectives for air quality, and hence the Council have declared three Air Quality Management Areas (AQMAs). Monitoring of air quality within each of the AQMAs has identified ambient levels of nitrogen dioxide (NO₂) remaining above the intervention limit values. As such the status of these AQMAs should be retained. When comparing monitoring data from 2013 with 2017, there has been an overall reduction in the measured levels. However monitoring data from the Lawn Lane and London Road AQMAs note ambient levels for NO₂ are still well above intervention limit values. In some cases the annual averages at locations of relevant exposure have increased.

The air quality problem in Dacorum is predominantly as a result of emissions from road vehicles, as is the case in other parts of the UK. Car ownership with the Hertfordshire and the borough of Dacorum is higher than the national average. A network analysis completed by the County Council of the Hemel area note that the majority of trips are made by private car.

The revision of this AQAP has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

This Plan is designed to be a fluid document and will form a framework for action on air quality. The measures within this draft document may be subject to ongoing amendment or revision as implementation of the AQAP progresses. Measures may also be withdrawn on the basis they are not, or are no longer feasible. A formal review of the AQAP will be set every 5 years. Any new evidence, revisions or amendments will be introduced as appropriate, e.g. supporting appendices. Progress on measures set out within this draft plan will be reported on annually within the Council's air quality Annual Status Report (ASR).

3. Air Quality in Dacorum

The UK Air Quality Strategy (AQS), released in July 2007, provides the overarching strategic framework for air quality management in the UK and contains national air quality standards and objectives established by the Government to protect human health. The AQS objectives take into account EU Directives that set limit values which member states are legally required to achieve by their target dates.

The Council is meeting all of the national AQS objectives other than for the gas Nitrogen Dioxide (NO₂). The Council is meeting the current objectives for Particulate Matter (PM₁₀ and PM_{2.5}) but as this pollutant is non-threshold pollutant (damaging to health at any level), this remains a pollutant of concern. Local Authorities are expected to work towards reducing emissions and concentrations of PM_{2.5} in their local area as practicable.

3.1 Air Quality Management Areas

The Local Air Quality Management process derives from Part IV of the Environment Act 1995. It places a legal obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where they are not, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

The Council designated three AQMAs in June 2012 as result of exceedances of the air quality objective for nitrogen dioxide (NO₂) at the following locations within the Borough:

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

In 2013 the boundary of AQMA 3 was amended due to exceedances predicted outside of the originally declared boundary. The extent of the AQMA boundaries is presented in Appendix 1.

The table below indicates the total number of residential properties included within each of the three AQMAs.

AQMA	No. of residential properties in each AQMA
AQMA 1 Lawn Lane, Hemel Hempstead	47
AQMA 2 London Road, Apsley	66
AQMA 3 High Street, Northchurch	42

Table 1 – Total number of residential properties within an AQMA

3.2 Monitoring within the AQMAs

The Council recently submitted its latest ASR to Defra which contained monitoring results for NO₂ for each AQMA. This compiled the results of monitoring over 5 years, 2013 – 2017. Overall monitoring data shows a general decrease in ambient nitrogen dioxide levels for the AQMA monitoring networks.

However in the Lawn Lane and London Road AQMAs ambient average levels remain substantially above the objective limit value where exceedances are being measured. This ranged from 45 to 56 ug^m-³. The objective for this pollutant is 40 ug^m-³. Comparing the averages from 2013 against 2017, this also identifies that air quality have worsened at some receptors.

In the Northchurch AQMA, and locations where an exceedance is being measured a comparison of the 2013 and 2017 annual averages identifies no change. 3 out of 10

monitoring locations in this AQMA have measured exceedances, which range from 40 to 43 $\mu\text{g m}^{-3}$.

3.3 Source Apportionment

Nitrogen oxides (NO_x) are a group of gases that are predominantly formed during the combustion of fossil fuels. The majority of NO_x emitted as a result of combustion is in the form of nitric oxide (NO). When NO reacts with other gases present in the air, it can form nitrogen dioxide (NO₂), which is harmful to health.

The Air Quality Strategy 2019 states the main sources of NO_x are road transport (34%), energy generation, for example power stations and refineries (22%), domestic and industrial combustion (19%) and 'other' transport such as rail and shipping (17%).

Source apportionment completed in 2013 and reported in the previous AQAP identified road traffic as the dominant source of NO_x (NO + NO₂) in all three of the AQMAs. This identified that ambient background concentrations were contributing the largest individual proportion to NO₂ concentrations, followed by emissions from cars and good vehicles on local roads. Buses were also recognised as contributors within AQMA 1 and 3.

The source apportionment study drew the following conclusions:

- Ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations within all three AQMAs (31.6 to 85.7 per cent);
- Cars contribute significantly to local NO₂ emissions within all three AQMAs (7.8 to 42 per cent);
- LGVs contribute to local NO₂ emissions in all three AQMAs albeit to a lesser extent than cars (3.1 to 21.4 per cent);

- HGVs also contribute to local NO₂ emissions in all three AQMAs albeit to a lesser extent than LGVs (1 to 10.8 per cent);
- Buses (PSVs) are estimated to make a relatively insignificant contribution to local NO₂ emissions (<0.1 per cent) in AQMA 2, but make greater contributions in AQMAs 1 (<9.4 per cent) and 3 (<6.2 per cent);
- Motorcycles are estimated to make a relatively insignificant contribution to local NO₂ emissions in any of the three AQMAs (<0.2% per cent).

Noting the recent findings by the County Council in their draft GTP⁸ it is assumed that as the majority of journeys are made by private car that cars will continue to be one of the main contributors to local NO₂ emissions. However as the last source apportionment exercise was completed in 2013 this will need updating to confirm if original conclusions remain the same.

3.4 Scale and extent of the problem

Based on the 2013 source apportionment analysis, ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations in all three AQMAs. Private cars are very relevant to local NO₂ emissions in all AQMAs so a reduction from them would provide a benefit across the Borough. Goods vehicles contribute to NO₂ emissions in all AQMAs, albeit to a lesser degree than cars. Buses make a contribution to local NO₂ emissions in AQMA 1 and 3. The table below indicates the degree of reduction necessary to meet the objectives.

⁸ Hertfordshire County Council [2018]. Hemel Hempstead Transport Pack Evidence Summary

AQMA	Location of highest measured annual mean concentration 2017	Highest measured annual mean NO ₂ concentration (ug/m ⁻³) 2017	Reduction necessary ug/m ⁻³)
AQMA 1	DC105	56	17
AQMA 2	DC98	56	17
AQMA 3	DC91	43	4

Table 2 – Degree of reduction necessary to meet the air quality objectives for AQMAs

3.5 Conclusions

The three AQMAs have a problem with local NO_x emissions causing levels of NO₂ to be above the health-based annual mean standard of 40µg/m³. Road transport in all of the AQMAs is the dominant local source of NO_x emissions. Therefore any successful action planning will require input and action from Hertfordshire County Council as ambient NO₂ levels are to be reduced below intervention limits.

Based on the source apportionment analysis, ambient background concentrations contribute the largest individual proportion to existing NO₂ concentrations, followed by emissions from cars and goods vehicles on local roads. Buses also contribute within AQMA 1 and 3. However as the source apportionment analysis was completed 5 years ago, this exercise should be repeated to confirm if the original analysis remains valid.

Based on 2017 results, these measures would need to reduce annual mean concentrations by 17 µg/m³ in AQMAs 1, 2 and 4 µg/m³ in AQMA 3 to achieve the air quality objective.

Although the Action Plan must primarily focus on making progress towards achieving the annual mean objective for NO₂, actions and measures will seek to provide an overall emissions reduction and with it other benefits, such as:

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

4. Measures to improve air quality

4.1 Consultation and Stakeholder Engagement

In revising this AQAP, Dacorum will work with other local authorities, agencies, businesses and the local community to improve local air quality. The response to any stakeholder consultation and engagement will be published and made available publicly. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed below:

- The Secretary of State
- The Environment Agency
- Hertfordshire County Council (HCC)
- Highways England
- All Hertfordshire local authorities, and those sharing an administrative border with Dacorum, i.e. Aylesbury, Chiltern, Central Beds, Three Rivers and St Albans
- Members and other departments of Dacorum Borough Council
- Public Health England & the Public Health Director for HCC
- Bodies representing local business and public interest

4.2 Steering Group

The purpose of the steering group will be to oversee the update and implementation of an effective AQAP with an overall objective to work together with the common goal of seeking to improve the air quality in the Borough of Dacorum.

The development of a steering group is yet to be completed, but representation should be determined by individuals who can influence action plan implementation as a result of their local knowledge and area of responsibility. This should consider representatives from Dacorum Borough Council (Environmental Health and Planning

Dacorum Borough Council

& Development Control) and Hertfordshire County Council (Transport & Highways, Planning and Public Health).

5. AQAP Measures

The measures detailed within this AQAP are those the Council feels are worthy of further investigation in pursuit of the air quality standards within the declared AQMAs, as well striving to reduce emissions across the Borough as a whole.

The Council does not necessarily have the power to implement them all directly but it does have the potential to influence those bodies or individuals who could. Some of the measures suggested here retain measures from the previous AQAP as well proposals for new measures centred on emissions reduction.

Some measures contained within this draft AQAP have not yet been subject to consideration of cost-effectiveness, feasibility and acceptability as part of the action planning process, and these will be required before the Council could take a decision.

The process of action planning can also be a protracted one. Where there is overwhelming support for the principle of specific actions, but it requires the engagement of only one or two individuals then the consideration of action plan measures and their delivery may be better served by consultation at the appropriate time. This would enable a more flexible approach to development and delivery and the hence statement that this draft AQAP is seen as a framework document which will be supported by appendices for each individual action.

In total the AQAP has identified 12 measures for action and are detailed within this chapter, below.

AQAP 1: Responsibilities and Commitment

Measure	Title
1	Responsibilities and commitments
Key Intervention	
A corporate commitment to putting air quality at the heart of the decision-making process, particularly in other policy areas, such as planning decisions or including air quality in regional spatial strategies/local development frameworks	
Definition	Measure / Indicator
The AQAP should be approved at a high level, e.g. chief executive and council leader, as well as support from Head of Transport Planning and Public Health	Support / signatures contained with the commitment and responsibilities section
Responsibility: Dacorum Borough Council and Hertfordshire County Council	

AQAP 2: Maintaining links with key stakeholders

Under the previous AQAP measures included the need to improve links with:

- the local transport plan
- the local planning and development framework
- public health

It is considered that the Council has met most of these stated aims and the focus should now be to maintain those links. There is good evidence contained in Hertfordshire County Council's LTP of the integration of air quality into the LTP and links to public health. In particular LTP4 contains the following statements:

“With respect to air quality the county council has an agreed protocol with the districts on how it responds to transport-related air quality issues, and is an active member of the Hertfordshire and Bedfordshire Air Quality Network. The county council will support the district and borough councils with writing their statutory air quality actions plans and assist where appropriate when funding opportunities arise for mitigating air quality”

“The county council’s transport and public health teams will continue to work with district and borough council partners to understand how best to address areas that suffer from particularly high levels of emissions which put human health at risk. Detailed plans will be developed as part of the AQMA process and through the update to the county council’s Air Quality Strategic Plan. This will be informed by the content and guidance included in the Government’s new UK Air Quality Plan”.

LTP4 also contains 2 policies which are specific to air quality. These are Policy 19 (emissions reduction) and Policy 20 (air quality).

Measure	Title
2	Maintaining links with the Local Transport Plan, the Local Planning and Development Framework, and Public Health
Key Intervention	
A commitment to working closely with relevant authorities responsible for highways, planned new development and public health on possible emissions reduction measures	
Definition	Measure / Indicator
Reference to air quality, in particular the three AQMAs, to continue to be referenced in future versions of transport plans and strategy	Support objectives for Air Quality in the Local and Growth Transport Plans
Responsibility: Dacorum Borough Council and Hertfordshire County Council	

AQAP 3: Influencing emission reduction from new developments

Air quality is a material planning consideration. At a national level planning policy recognises that policies and decisions should contribute to and enhance the natural and local environment by preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of air pollution. Development should, wherever possible, help to improve local environmental conditions such as air quality, taking into account relevant information⁹.

Policy areas in planning and transport recognise the need for cumulative impact / cumulative effect to be taken into account, i.e. that new development is considered appropriate for its location and taking into account the likely effects (including cumulative effects) of pollution on health¹⁰.

Planning policy and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan¹¹.

The image below is reproduced from the draft South West Herts Growth and Transport Plan (GTP) which is a daughter document of LTP4. This recognises that Hertfordshire is facing significant levels of housing and employment growth which are expected to have an impact on the county's local and strategic transport systems and

⁹ National Planning Policy Framework 2018 Para 170

¹⁰ National Planning Policy Framework 2018 Para 180

¹¹ National Planning Policy Framework 2018 Para 181

networks in the short, medium and long term. For Dacorum this identifies the creation of close to 10,000 new homes and 5,000 new jobs.

Figure 1 – Extract from the Growth and Transport Plan for South West Herts – District Level Growth

An assessment of the broad relationship of the urban areas of South West Herts provides an insight of the contributors to local air quality in Hemel Hempstead. This indicates that local traffic in Hemel is a mix of locally generated movement as well interactions with St Albans, Watford and Luton. A summary of this assessment is reproduced from the GTP in the figure below. The GTP identifies that South West Herts is one of the most congested and constrained parts of Hertfordshire in terms of growth and transport.

Figure 2 – Extract from the GTP identifying the broad relationship between urban areas of SW Herts

The design of the GTP has identified the challenges facing each of the main urban areas in South West Herts. In respect of Hemel Hempstead the key symptoms are listed as:

- Highway Congestion
- Limited accessibility for non-car modes
- Pedestrian Congestion at railway stations
- Difficulty accessing railway stations

Noting the scale of district level growth for Dacorum and surrounding districts and the challenges listed above for Hemel Hempstead, where new development places reliance on the car as the primary mode of transport, in terms of air quality continued growth could be likely to conflict with local and national planning policy. That being

'to sustain and contribute towards compliance with relevant limit values or national objectives'.

The presence of AQMAs is not an issue which is exclusive to Dacorum. Across the Hertfordshire authorities there are a total of 32 AQMAs¹², many of which are concentrated in SW Herts. Neighbouring authorities that share a border with Dacorum, but are not part of Hertfordshire, such as Luton, Central Beds, Chiltern and Aylesbury are all recognised as having AQMAs too. Referring to the broad relationship between urban areas in SW Herts is not just development inside the administrative area of Dacorum that could impact local quality, and likewise development within the district that could impact air quality outside the district. It is stated aim of the NPPF that cumulative impact of development ought to be considered.

As a strategic spatial transport plan the GTP recognises that it should not be constrained by county or district administrative boundaries, noting that journey patterns to, from and between places are unlikely to adhere to administrative boundaries

¹² Hertfordshire County Council [2018] South West Hertfordshire Growth and Transport Plan prospectus

At a regional planning level Dacorum forms part of the joint strategic plan for the South West Hertfordshire area along with Three Rivers District Council, Hertsmere Borough Council and Watford Borough Council. A key aim of the JSP is to ensure that infrastructure – such as transport, schools, health and utilities (for example, water and sewerage) – are properly co-ordinated and delivered alongside the need for new homes and jobs. All five councils make up a single housing market area, which means they have previously worked together to identify existing and future housing need.

Noting the requirements for growth in Dacorum and the wider South West Herts area, the presence of AQMAs across the various districts and the broad relationships between the different urban areas of SW Herts there are good indicators that a consideration of air quality needs to be applied in planning at both a local and regional level. Both local and regional planning policy as well as transport policy could be used to create the necessary policy hooks so that the planning system is used as a mechanism for delivery for sustainable growth and opportunities to deliver air quality benefits.

Under the scope of its current AQAP the Council requires an air quality impact assessment to be included with planning applications which have the potential to cause a negative impact on air quality, particularly in cases where an increase in transport emissions may arise, or where new residents could be exposed to poor air quality.

However the County's Health and Well-being planning guidance¹³ indicates a need to move away from air pollution modelling being used to define the need for air quality mitigation associated with development. Except for major scale developments (requiring Environmental Impact Assessment) such modelling will 99% of the time require no air quality mitigation and even for some major scale developments will reach the same conclusion. Modelling may also fail to fully appreciate cumulative impact of development and the potential for multiple small scale sites to impact on local air quality, particularly when combined with larger neighbouring developments.

¹³ Hertfordshire County Council [2017]. Hertfordshire's Health and Well-being planning guidance

Referring to the work of other local authorities and their consideration of air quality and planning this has been to adopt a 'mitigation as standard'. In a number of cases the need for assessment is removed from the planning process in favour of mitigation which is in scale and kind to the development. This has the advantage of providing consistency and clarity to developers as well ensuring all development offers mitigation. Assessment of impact only becomes a requirement for larger developments, or sites that introduce new sources of exposure.

Again, considering that air quality is an issue which is not unique to Dacorum, the presence of AQMAs in neighbour authorities and likely growth across the region and the local and regional cumulative impact from this, it is recognised that planning should play a greater role in delivering improvement to air quality through new development by way of condition and/or obligations.

This could also include combining action on air quality in other policy areas at a national and local level such as carbon reduction and climate change. A consideration of carbon reduction and climate change feature in both national and local planning policy. Measures around low carbon technology can often compliment local air quality and vice versa and so there is scope for this be pursued collaboratively.

Measure	Title
3	Ensuring emission reductions from new development
Key Intervention	
Use of the planning system to mitigate the individual and cumulative impact of air quality from new development to sustain and contribute towards compliance with objectives for air pollutants	
Definition	Measure / Indicator
Setting of clear policy at a local, county and regional level to incorporate air quality mitigation through planned new development	Policy measures on air quality integrated into local, county and regional planning policy
Development of guidance and obligations for developers with regard to sustainable development / mitigation requirements	No. of sites with air quality mitigation measures secured against new development.
Responsibility: Dacorum Borough Council (inc) Regulatory Services, Strategic Planning and Regeneration, Development Control; Hertfordshire County Council	

AQAP 4 – Potential relocation of bus stops and on-street parking in the Northchurch AQMA

Under the previous AQAP specific measures to address air quality in the Northchurch AQMA identified a need to determine the significance of stationary buses and on-street parking. Observations of traffic movements through this area identified both were a cause of localised congestion and tailbacks.

Previous updates on the action plan identify that funding bids to pursue action on both issues have to date been unsuccessful. Evidence from previous AQAP updates suggests there is a strong local objection to these measures.

Nevertheless the obligation of the Council is to address the reasons for poor air quality within the AQMA. Where there are few or no alternative viable options then the relocation of the bus stop and removal of on-street parking must remain, and further investigation undertaken.

Measure	Title
4	Relocation of bus stops and on-street parking in the Northchurch AQMA
Key Intervention	
Determine the significance of stationary buses and on-street parking on congestion within the Northchurch AQMA	
Definition	Measure / Indicator
Investigate the possibility of relocating the bus stops or the creation of a lay-by	Undertake a bus stop investigation and implement findings, where viable.
Investigate the removal of on-street parking	Undertake an on-street parking investigation and implement findings, where viable.
Responsibility: Hertfordshire County Council and Dacorum Borough Council	

AQAP 5 – Clean Air Zone (CAZ) feasibility study

Declaration of the 3 Dacorum AQMAs were made in 2012. In that time air quality levels within those respective AQMAs have remained above intervention levels. In the Lawn Lane and London Road AQMAs, measured levels of NO₂ are considered to be well above the objective for this pollutant. Exceedances measured in 2017 ranged from 45 to 56 $\mu\text{g m}^{-3}$. The objective is 40 $\mu\text{g m}^{-3}$.

The borough of Dacorum and the town of Hemel Hempstead in particular are earmarked for substantial growth in terms of new homes and jobs. Noting that the majority of journeys around Hemel are reliant on private car journeys and there is limited access to non-car modes, unsustainable growth could frustrate action to reduce or lead to a worsening in emissions within the London Road and Apsley AQMAs.

The principle of clean air zone (CAZ) is a more recent action in the action planning toolbox that has gained traction as a result of the infraction proceedings launched against the UK by the European Commission (EC). For the UK to meet the expectations of the EC we are required to achieve full compliance with existing air quality standards by 2020 at the latest. It is understood that 5 cities across the country have been mandated to introduce a CAZ, and a further 33 local authorities required to undertake a feasibility study to see if they need to introduce measures, such as CAZ.

The upshot of EC intervention is that the UK Government has mandated a number of local authorities to introduce (or undertake a feasibility assessment) for a CAZ as part of the long term strategy to improve air quality across the country.

The principle behind CAZ is to exclude the most polluting vehicles from a specific area or roads, by targeting individual or all classes of vehicle, for example:

- HGV / LGV
- Buses and coaches
- Taxis and private hire vehicles
- Cars

There are 2 types of CAZ, non-charging and charging. In a non-charging CAZ, the focus is on improving air quality, without charging money for vehicles entering the zone. Vehicles which enter the CAZ, but do not meet the required environmental standard can be subject to fines. In a charging CAZ, drivers will be charged a fee to enter the area if their vehicle fails to meet the required environmental standards, e.g. based on a car's Euro emissions standard.

The setting of emissions standards would also allow the Council to protect itself against displacement of non-compliant vehicles from other CAZ areas. For example the procurement of new buses may be prioritised to meet the requirements other CAZ areas, meaning stagnation of existing fleets or replacing cleaner buses with non-complaint buses from other CAZ areas.

The potential for a CAZ feasibility study is supported within LTP4. It is a stated aim of Policy 20 to investigate the use of CAZ.

Measure	Title
5	Clean Air Zone feasibility study
Key Intervention	
Assess the feasibility for a Clean Air Zone to be introduced to Hemel Hempstead	
Definition	Measure / Indicator
Clean Air Zone feasibility study	Funding approval for CAZ feasibility study
Clean Air Zone implementation	Approval by cabinet where study indicates a CAZ is feasible
Responsibility: Hertfordshire County Council and Dacorum Borough Council	

AQAP 6 – Workplace Parking Levy

A Workplace Parking Levy (WPL) is a charge on employers who provide workplace parking, a type of congestion charging scheme (although the charge may be passed down to employees). It may be considered in place of or in addition to a CAZ. The only local authority to introduce a WPL has been Nottingham, but it is also being explored in Oxford and Cambridge.

In the case of Nottingham the cost of initial development and implementation is estimated to have been in the region of £4m, with £44m in income raised in the first five years. Any funds raised from WPL must be used to fund transport improvements. In Nottingham this supported public transport related projects such as the expansion of the city's tram system and investment in 'Locallink' bus services, including electric buses.

A WPL may be introduced under the Transport Act by the local traffic authority, in this case the County Council. WPL has not been fully investigated and whether the scope of any scheme could make use of emissions offsetting in place of charging. For example an employer would be subject to lower payments where they have put in place off-setting measures, e.g. secure cycle storage, bike loans, workplace showers, home working, EV recharging points, incentives for car sharing.

It is possible that WPL could augment the initiatives implemented under previous action plan measures of lift share / car share / EV car clubs.

Measure	Title
6	Workplace Parking Levy
Key Intervention	
To explore the feasibility for a WPL to be introduced within the borough	
Definition	Measure / Indicator
WPL feasibility study	Funding approval for WPL feasibility study
Implementation of a WPL	WPL implemented where it is identified as feasible
Responsibility: Hertfordshire County Council	

AQAP 7 – Private Hire and Taxi Vehicle Emissions Policy

Government expects local authorities to take a lead and use available powers to reduce vehicle emissions where possible, including controlling emissions from taxis. Taxis operate mainly in the urban area where air pollution is greatest and often leave their engines idling on taxi ranks where members of the public are often exposed.

Part of the licensing of private hire and taxi vehicles regime allows local authorities to set policies in relation to this function. The setting of policy may be related to age and / or emissions. The setting of emissions standards has been used in a number of local authority areas including York, Shropshire, Transport for London, Northampton and Rotherham. Subject to an assessment of feasibility a taxi emissions policy could be introduced to Dacorum.

Measure	Title
7	Private Hire and Taxi Vehicle Emissions Policy
Key Intervention	
Private Hire and Taxi Vehicle Emissions Policy for Dacorum	
Definition	Measure / Indicator
Emission policy for private hire and taxi vehicles introduced	Licensing Committee to agree the emissions policy
Responsibility: Dacorum Borough Council	

AQAP 8 – Advanced Quality Bus Partnership (AQBP)

The Quality Partnership Scheme was introduced by the Transport 2000 Act. Under such a scheme a local transport authority agrees to invest in improved facilities at specific locations along bus routes (e.g. bus stops or bus lanes) and operators who wish to use those facilities undertake to provide services of a particular standard.

Only those operators prepared to provide services to the standards specified in the scheme were permitted to use the facilities. Whilst other operators were not generally prevented from providing local services in the area covered by the scheme, they could not use the facilities provided by the local transport authority.

The Bus Services Act 2017 created a new mechanism called an advanced quality partnership based around the existing quality partnership mechanism. Under the AQBP powers the local transport authority would be able to specify standards based on emissions requirements. This can include requirements about emission and types of fuel or power used.

The County Council currently has a bus strategy which runs from 2011 – 2031. This was revised in 2015 and forms part of the LTP4. In terms of setting emissions standard the current strategy places very little obligation on bus operators in terms of setting emissions standards. Section 20¹⁴ of the strategy states:

“The County Council will encourage bus operators to provide services that are likely to meet this objective and on its own contract services it will take into account the environmental contribution in assessing value for money. The County Council will also encourage operators to reduce their own emissions through new vehicle investment and the operation of green fuel vehicles, if other funding streams can be found. However this issue is complex as new (and heavier) vehicles often use more fuel in delivering lower emissions”.

As a minimum the development of an AQBP could consider the setting of emissions standards from buses operating through the 3 Dacorum AQMAs. An AQBP could be developed to cover a wider area, such as built up urban areas of Dacorum and / or

¹⁴ Hertfordshire County Council [2011] Hertfordshire County Council Bus Strategy 2011 – 2031 [Revision 1 – January 2015]

bus links that interconnect the urban areas of SW Herts and have identified air quality issues, e.g. Luton, Watford and St Albans.

The development of an AQBP however will require careful consideration. Operators may have to withdraw less-profitable (but vital) services where over ambitious emissions standards are set. It would be possible to set a progressive emission standard, whereby an initial emissions benchmark is introduced which maintains the existing status quo, but as buses are replaced or a new operator is introduced they will be required to meet a higher standard.

An AQBP will require a more detailed assessment of feasibility with the local highways authority, i.e. the County Council, who would be responsible for implementation and management of any scheme.

Measure	Title
8	Advanced Quality Bus Partnership feasibility study
Key Intervention	
To assess the feasibility for an AQBP for Dacorum	
Definition	Measure / Indicator
Feasibility study for an advanced quality bus partnership	County Council to agree to undertake a feasibility study
AQBP implemented	AQBP implemented where identified as feasible
Responsibility: Hertfordshire County Council	

AQAP 9 – Reducing Council emissions

Under the previous AQAP the Council outlined measures for reducing emissions from its vehicle fleet. Progress on this action details some mixed successes. Positive action has included targeting reductions in emissions from the Council’s transport fleet and EV and hybrid vehicles being offered under the lease car scheme.

The Council recognises that it should continue to lead by example and continue to target reductions in emissions from its transport fleet activities and through procurement.

Areas for the council to consider in future include:

- Differential parking fees based on emissions (e.g. free for zero and low emission vehicles)
- Replacing the mayors car with an electric vehicle
- Investigating the use of alternative vehicles as part of the Council fleet, e.g. electric car derived van or gas powered refuse vehicle
- Incentivising car sharing through commuting
- Incentivising cycling, e.g. higher rate of mileage paid for use of pool cycles
- Car leasing scheme limited to low emission options only, e.g. electric, hybrid or petrol
- Incentivising home working to reduce traffic on local roads

Further proposals also include the Council developing a low emission or green procurement policy which incentivises low emission suppliers. The purchasing power of the public sector is significant across the County, which is an opportunity to influence the providers of goods and services to ensure the vehicles used by the providers emit the lowest possible emissions.

Public sector organisations must follow strict procurement rules, but included within those rules is a duty¹⁵ to consider “social value” as part of the procurement process. This means that when procuring goods and services authorities must take into account social and environmental considerations and can set criteria when awarding

¹⁵ The Public Services (Social Value) Act 2012

contracts and procuring service how these may be improved. For example this could include incorporating minimum vehicle emission standards when awarding contracts.

Standards that could be integrated into tendering and contract award evaluation should include:

- All contracting of goods and services where vehicles will be required to access the urban area should include provision for meeting the current European Emission Standard.
- Additional weight given in award criteria to tenders that can demonstrate best practice in minimising vehicle emissions and the use of low and ultra-low emission vehicles.

Measure	Title
9	Reducing Council Emissions
Key Intervention	
Reducing emissions from Council operations	
Definition	Measure / Indicator
Continue to target reductions in emissions from the Council's transport and grey fleet	Environmental Management system performance for annual fuel usage reduction
Differential parking fees set based on vehicle emissions	Scheme developed which sets a charging fee to disincentive more polluting vehicles
Replacing the mayor's car with an electric vehicle	Car replaced with an EV
Investigate alternative vehicle types for Council operated fleets	Assessment of alternatively fuelled vehicles completed and introduced to the fleet, where feasible
Investigate an incentive scheme for car sharing on commuting to work	Incentive scheme implemented where practicable
Incentivise cycling at work	Mileage policy amended
Council car lease scheme limited to low emission vehicles only	Changes to policy agreed
Investigate incentives for home working to reduce journeys on our local roads	Incentive scheme implemented where practicable
Low emission or green procurement policy	Low emission / green procurement policy written, approved and implemented
Responsibility: Dacorum Borough Council	

AQAP 10 – Emissions based parking charges

The Council has responsibility for a number of car parks across Dacorum as well as administering the scheme for on-street parking permits. The Council can investigate the introduction of differential parking charges based on vehicle emissions, which incentivises zero or low emission vehicles, e.g. electric vehicle (EV), electric hybrid, etc.

A possible charging structure may be to introduce free parking for electric free with higher costs apportioned to the most polluting vehicles. However any scheme for on-street parking permits may need to consider a more relaxed tariff due to a lack of on-street charging infrastructure that would facilitate a shift towards pure EV or plug-in hybrid.

Measure	Title
10	Emissions based parking charges
Key Intervention	
Differential parking charges for council car parks and on-street parking permits based on vehicle emissions	
Definition	Measure / Indicator
Differential parking charges that incentivise low emission vehicles	Emissions based charging structure defined and implemented in all DBC managed car parks Emissions based charging structure defined and implemented for the issue of on-street parking permits
Responsibility: Dacorum Borough Council	

AQAP 11 – Electric Vehicle Charging Infrastructure Study / Strategy

As part of the government's long-term ambition on air quality the Road to Zero strategy has set targets for at least 50% of new cars to be ultra-low emission by 2030, and that it expects all new cars and vans to have significant zero-emission capability by 2040, and almost every car and van to be zero-emission by 2050.

Electric car sales are reported to have risen dramatically in recent years with new registrations of plug-in cars increased from 3,500 in 2013 to more than 195,000 by the end of January 2019¹⁶.

Unlike its combustion engine equivalent, if an EV runs out of electricity it isn't like running out of petrol or diesel. You can't get a friend and a jerry can full of fuel to help you out, if you drain your electricity reserve, you need to be recovered to your nearest supply. Range anxiety is a term used to describe the fear of running out of electricity, and a potential bar to the uptake of EV cars and vans.

The popularity of EV is growing with many manufacturers including plug in electric and hybrid cars as a standard part of their range. Many now offer range extended vehicles. The official mileage range of the Nissan Leaf is 258 miles on a combined driving cycle (city and motorway), or 168 miles at motorway speeds. When used in an everyday way it may not be capable of achieving official mileage.

However, the majority of charging of EV cars can take place at home, and most daily journeys for commuting purposes are likely to be well under official mileage ranges to avoid running out of electricity. Through planning the Council could ensure future proofing new development to include EV charging points, or laying of cabling that can allow creation of new charge points in the future.

Therefore the need for charging infrastructure should consider targeting areas where it will be needed or well used. This could include areas of housing with no off-street parking, public and private car parks, workplaces or with businesses that operate a significant proportion of their fleet locally. To ensure appropriate allocation and

¹⁶ Next Green Car [2019] Electric Car Market Statistics [online]. <https://www.nextgreencar.com/electric-cars/statistics/> Accessed 14/02/19

prioritisation of resource for EV charging infrastructure it is proposed that this be delivered by way of EV Charging Infrastructure Study / Strategy.

Measure	Title
11	Electric Vehicle Charging Infrastructure Study / Strategy
Key Intervention	
Development of a strategy for EV charging infrastructure	
Definition	Measure / Indicator
Strategy which identifies need for EV charging infrastructure and allocation of resource based on prioritisation	No. of new EV charge points introduced No. of new developments with EV charge points Evidence of usage of EV public EV charge points
Responsibility: Hertfordshire County Council and Dacorum Borough Council	

AQAP 12 – Promoting sustainable travel and discouraging the use of single car journeys

This measure is proposed as a catch all and consolidation of measures 11, 12 and 17 – 19 from the previous AQAP and are promoted under the general umbrella of sustainable travel and discouraging the use of single car journeys.

Under the previous action plan, measures 11, 12 and 17 – 19 covered actions such as promoting walking and cycling, promoting the use of public transport, promoting travel planning etc. These are considered indirect measures which offer limited guarantee of improving or providing any substantial benefit to air quality as they depend upon voluntary uptake. These measures are unlikely to achieve compliance in the shortest possible time. As modal shift also features heavily within local transport planning it is considered this is well catered for in other service areas.

The promotion of sustainable travel and discouraging the use of single occupancy car journeys can be viewed as a complementary action that should be delivered alongside other measures that create the driver for modal shift, such as workplace parking levy or a clean air zone.

Measure	Title
12	Promoting sustainable travel and discouraging the use of single car journeys
Key Intervention	
Promoting sustainable travel and discouraging the use of single car journeys	
Definition	Measure / Indicator (suggestive)
Promoting the use of electric vehicle	Introduction of new EV charge points Information or links on DBC / HCC website
Promoting car share schemes	Re-introduction of car share schemes to Dacorum Increase in registered members in existing schemes, e.g. Liftshare
Promotion of Travel Planning	No of travel plans produced / refreshed annually
Promotion of walking and cycling	No. of companies supporting 'cycle to work' or 'cycle loan' schemes Encouraging secure cycle storage in new / existing development (and showers)
Encourage use of public transport	Support the Hertfordshire bus strategy Promoting available public transport discounts
Responsibility: Hertfordshire County Council and Dacorum Borough Council	

6. AQAP Summary

The measures outlined in chapter 5 are those the Council feels could contribute to improving air quality within the three AQMAs and in fulfilling its duty under local air quality management to meet the national air quality objective for the protection of human health.

A number of measures outlined in this plan require the evidence base to be provided for action through feasibility studies, with an overarching aim of defining of emissions standards on our local roads.

The proposed mechanism of delivery for the AQAP is to consult when necessary. For example a feasibility study for CAZ should require little to no consultation, other than with key stakeholders on defining the study, e.g. the County Council. However, where a CAZ is identified as feasible then wider consultation would be required to consider views of businesses and the public.

A summary of the measures put forward as part of this draft action plan are summarised in the table below.

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Responsibilities and commitments	N/A	N/A	DBC	TBC	TBC	TBC	TBC	TBC	TBC	
2	Maintaining links with the Local Transport Plan, the Local Planning and Development Framework, and Public Health	N/A	N/A	DBC & HCC	TBC	TBC	TBC	TBC	TBC	TBC	
3	Influencing emission reduction from new developments	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	DBC & HCC	TBC	TBC	TBC	TBC	TBC	TBC	
4	Relocation of bus stops and on-street parking in the Northchurch AQMA	Transport Planning and Infrastructure	Other	DBC & HCC	TBC	TBC	TBC	TBC	TBC	TBC	
5	Clean Air Zone (CAZ) feasibility study	Promoting Low Emission Transport	Low Emission Zone (LEZ) or Clean Air Zone (CAZ)	DBC & HCC	TBC	TBC	TBC	TBC	TBC	TBC	
6	Workplace Parking Levy	Promoting Low Emission Transport	Other	DBC & HCC	TBC	TBC	TBC	TBC	TBC	TBC	
7	Private Hire and Taxi Vehicle Emissions Policy	Promoting Low Emission Transport	Taxi Licensing conditions	DBC	TBC	TBC	TBC	TBC	TBC	TBC	

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
8	Advanced Quality Bus Partnership (AQBP)	Transport Planning and Infrastructure	Bus route improvements	HCC	TBC	TBC	TBC	TBC	TBC	TBC	
9	Reducing Council emissions	Promoting Low Emission Transport	Public Vehicle Procurement – Prioritising uptake of low emission vehicles	DBC	TBC	TBC	TBC	TBC	TBC	TBC	
10	Emissions based parking charges	Traffic management	Emission based parking or permit charges	DBC	TBC	TBC	TBC	TBC	TBC	TBC	
11	Electric Vehicle Charging Infrastructure Study / Strategy	Promoting Low Emission Transport	Other	DBC	TBC	TBC	TBC	TBC	TBC	TBC	
12	Promoting sustainable travel and discouraging the use of single car journeys	Promoting Travel Alternatives	Other	DBC & HCC	TBC	TBC	TBC	TBC	TBC	TBC	

Table 3 – Air Quality Action Plan Measures

7. Appendix 1: Extent of AQMA Boundaries

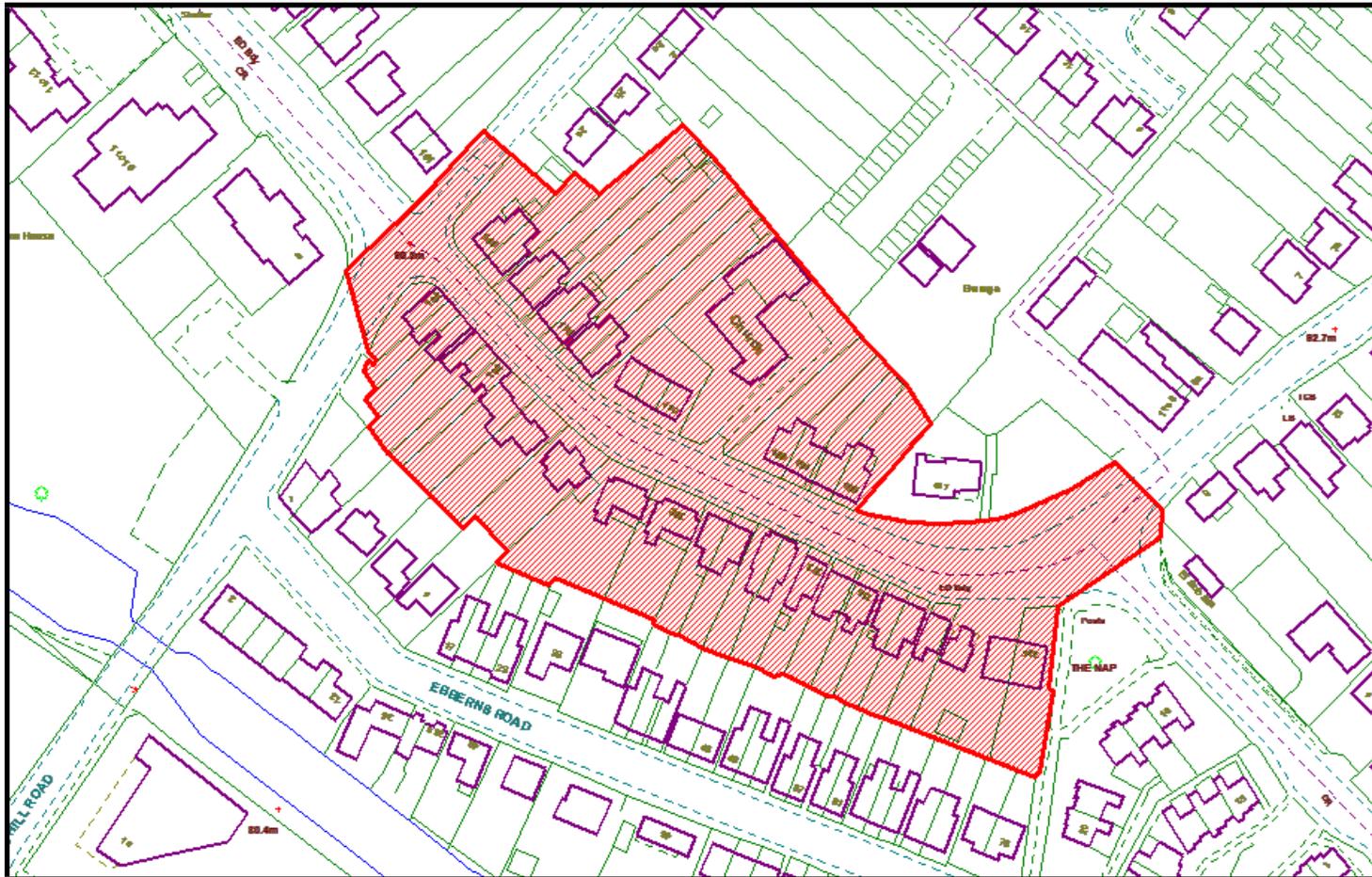


Figure 3 – AQMA 1 Lawn Lane, Hemel Hempstead

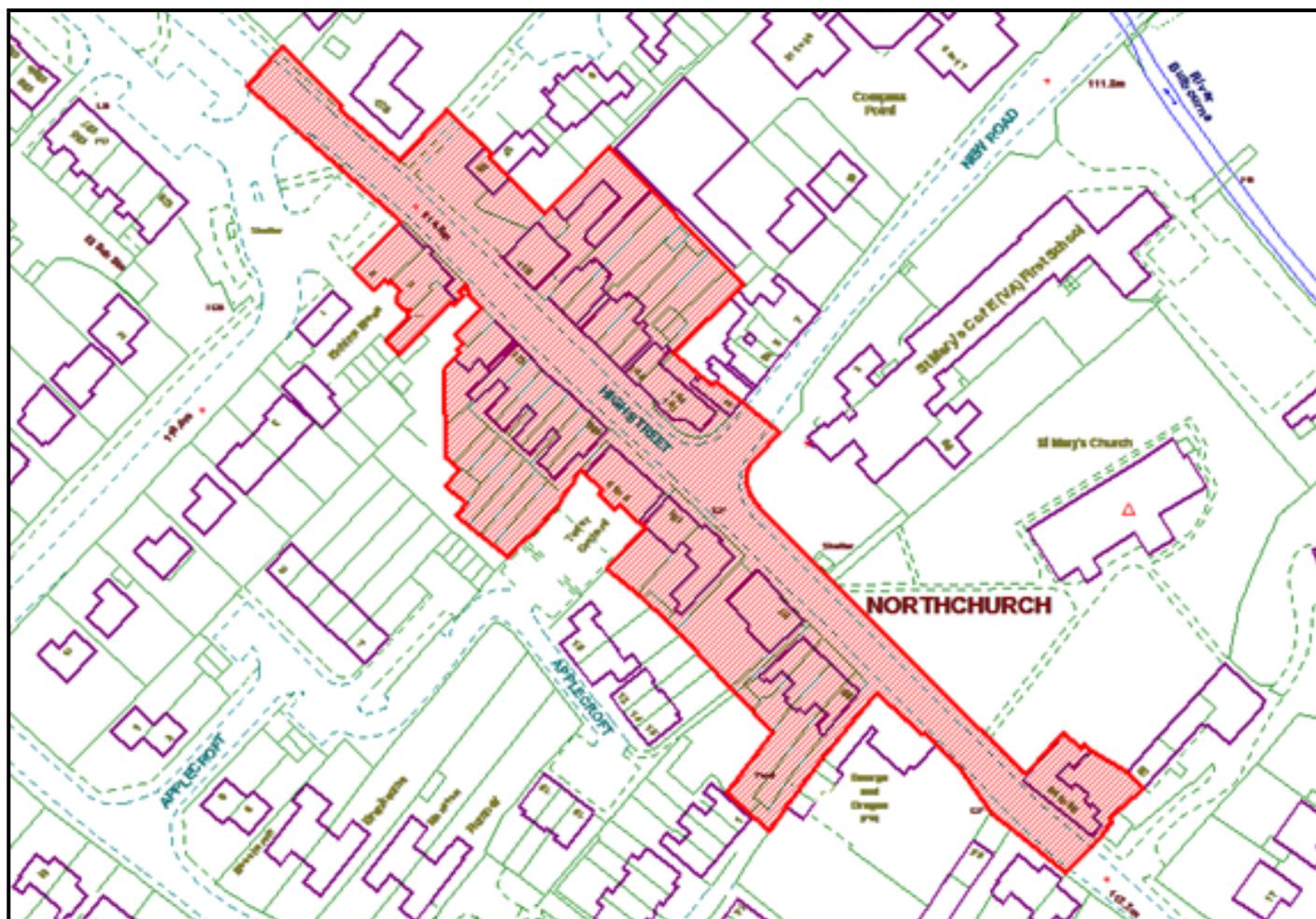


Figure 5 – AQMA 3 High Street, Northchurch

8. Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan – A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQBP	Advanced Quality Bus Partnership
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
EV	Electric Vehicle
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less

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