

Draft

Air Quality Action Plan 2017 - 2022



**Uttlesford District Council
AQMA Draft Action Plan**

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Executive Summary

The Environment Act 1995 requires all Local Authorities to review air quality within their districts. If any air quality objective set out in regulations under the Act is not likely to be achieved then the local authority must designate the affected area as an Air Quality Management Area (AQMA). The Act then requires an Action Plan to be produced for these designated areas, setting out the actions that the Council intends to take to meet the objectives and to maintain levels below the objective for the 5 year life of the plan.

Air quality monitoring and modelling carried out by the Uttlesford District Council (UDC) indicates that air quality is generally good in the district but at some junctions within the main town, Saffron Walden, the objective for nitrogen dioxide (NO₂) has either not been met in recent years or has been slightly below the objective.

The Council last produced an Air Quality Action Plan in 2009 following declaration of three small AQMAs centred on the most congested road junctions in the centre of Saffron Walden. Further monitoring of air quality was subsequently undertaken which revealed a wider area of concern, and in 2012 a larger AQMA was declared by the Council covering the central area of the town.

In the absence of significant industrial emissions, the main source of air pollution within Saffron Walden is transport, in particular congested traffic and heavy goods vehicles. The proposed actions therefore focus on improving traffic management in partnership with Essex County Council as highway authority, considering alternatives to private vehicle use, and promoting low emission transport. Whilst the actions are designed to improve air quality within the Saffron Walden AQMA to meet legal requirements, they will also benefit the wider district.

This Action Plan has been the subject of a period of statutory consultation before the final plan has been submitted for adoption.

An annual review of the plan will be undertaken to assess progress of implementing the measures and to ensure the proposed actions remain appropriate. Progress each year will be reported in the Annual Status Review of air quality as part of our statutory Local Air Quality Management duties set by Defra.

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Part 1 Proposed Measures

1. Introduction

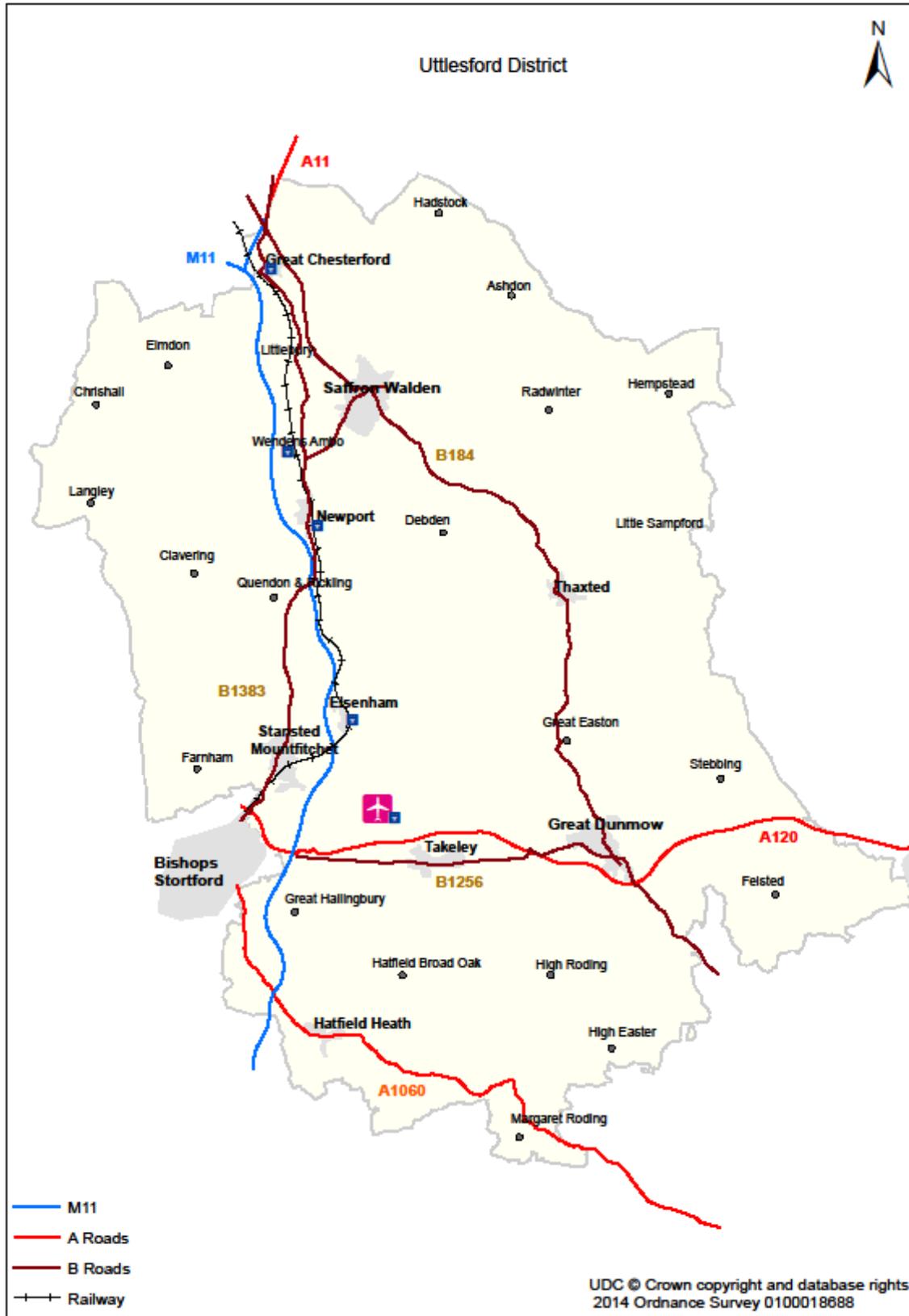
1.1 Purpose of the Action Plan

- 1.1.1** Uttlesford District Council is committed to improving air quality, and consequently the quality of life of both residents and visitors. Polluted air has the potential to impact on people's health, the economy and the environment. In common with many towns and cities, the towns in Uttlesford sometimes experience raised levels of pollutants as a result of traffic congestion.
- 1.1.2** This local Air Quality Action Plan (AQAP) has been developed under the Local Air Quality Management review and assessment regime as set out in the Environment Act 1995. If the review and assessment process indicates that a national air quality objective (as detailed below) is unlikely to be achieved, the Local Authority must designate an area where this occurs as an Air Quality Management Area (AQMA). Following the declaration process, the Act requires the authority to develop local measures, proportionate to the level of exceedances, which the authority will deliver with the aim of improving air quality to a level to where it is no longer likely to exceed the relevant objective at residential properties or other sensitive receptors.
- 1.1.3** Before the plan can be adopted, it must be subject to consultation with key stakeholders as outlined in Local Air Quality Management Policy Guidance LAQM.PG(16)[1] and must also be appraised and accepted by the Secretary of State as being suitable for purpose. A key objective will be to work in partnership with the highways authority, Essex County Council (ECC).
- 1.1.4** Uttlesford is a largely rural district in the western part of Essex. The largest towns are Saffron Walden in the north and Great Dunmow in the south of the district. Both are growing, although the largest new settlements are located in and around Great Dunmow. The M11 and A120 run through the district and Stansted Airport is located in the south west of the district.
- 1.1.5** The Council monitors air quality throughout the district, specifically levels of NO₂, fine particulates (PM₁₀ and PM_{2.5}). Ozone is also monitored close to the National Trust Hatfield Forest, and periodically, hydrocarbons close to Stansted Airport. Particulate matter is fractionated into PM₁₀ which includes all particles smaller than 10 microns (including PM_{2.5}) and PM_{2.5}, comprising all particles smaller than 2.5 microns. One micron is 1000th of a millimetre.
- 1.1.6** Saffron Walden town centre has consistently shown the highest levels of air pollutants, along with areas very close to the M11, where the nearest dwellings are currently sufficiently distant for pollution to fall to acceptable

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levels. Levels have been well below objective levels in other towns and villages.

Figure 1: Uttlesford District



1.1.7 UDC last produced an action plan in 2009 following declaration of three small AQMAs centres around junctions in the centre of Saffron Walden where air quality objectives were not being achieved. Since then a further junction was identified as subject to elevated levels and rather than declare a fourth small AQMA, the Council decided to revoke the three existing AQMAs and declare a large AQMA encompassing the previous and new areas of concern. This Action Plan replaces the 2009 Action Plan and covers the new AQMA.

1.2 Recent trends in air quality within Saffron Walden

1.2.1 UDC currently monitors air quality using passive diffusion tubes and automatic monitors. Monitoring for NO₂ has been undertaken in the central part of Saffron Walden since 1993 using diffusion tubes, and an automatic analyser located in Hill Street. Three diffusion tubes are located adjacent to the analyser for tube calibration purposes.

1.2.2 Initially levels monitored at some tubes were above the annual mean objective but in line with national trends related to the introduction for improved engine emissions, levels dropped below the objective. In 2007 this trend began to reverse, most likely due to increases in traffic and congestion. The levels monitored at the diffusion tubes sites in Saffron Walden since 2008 are set out in **Appendix 3**. Results show that levels of NO₂ reduced slightly at some junctions from 2013-14 but increased slightly from 2014-16. Some fluctuation is due to the effect of atmospheric conditions and traffic anomalies such as long term road works.

1.2.3 **Figure 2** shows the trends at the automatic monitoring station in Hill Street Saffron Walden since 2003, indicating no significant reduction in concentrations of NO₂ between 2007 and 2016. The trend is consistent with Department of Environment, Food and Rural Affairs (Defra) conclusions on long term trends derived from national monitoring sites. Defra have stated that 2010 was an unusually high year for NO₂ and that concentrations stabilised with little to no reduction at urban roadside and background sites up to 2013.

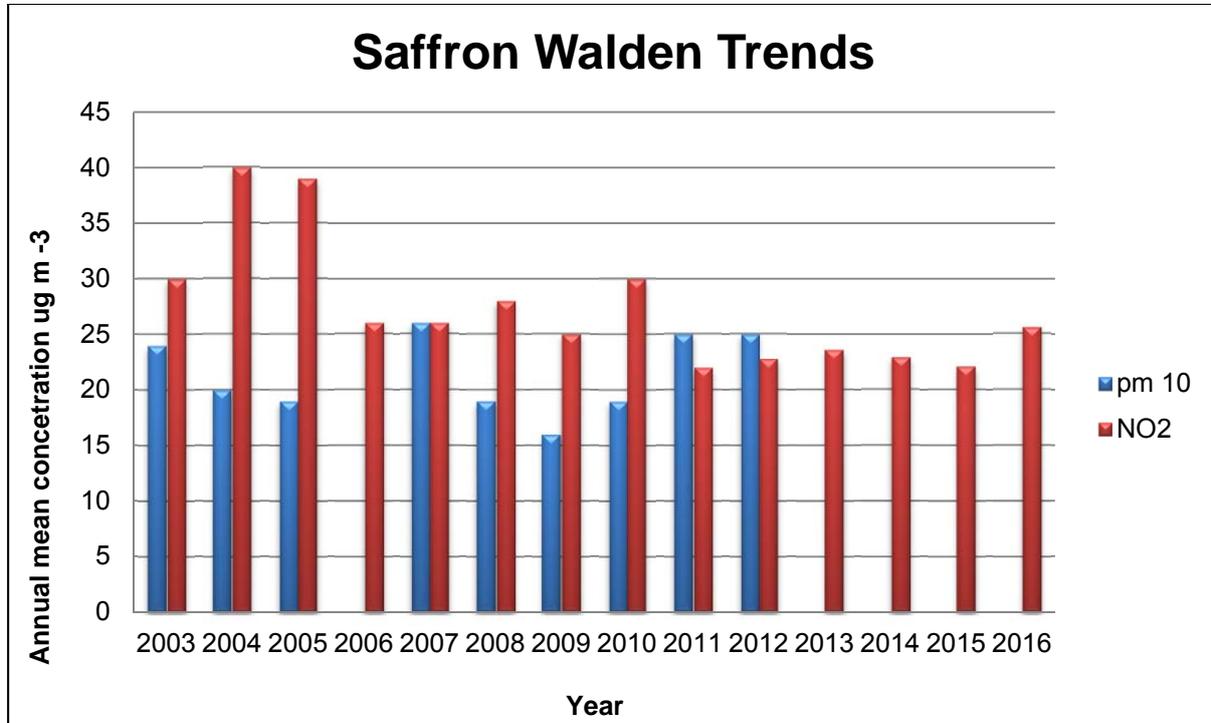
1.2.4 Levels of PM₁₀ have also remained relatively flat since 2011. Measurement of the finest particulates, PM_{2.5}, replaced PM₁₀ monitoring at Hill Street throughout 2014 due to the increasing evidence on health impacts due specifically to fine particulates.

1.2.5 The reason for the flat trends is not fully understood, but it is thought to relate to on-road performance of vehicles when compared with calculations based on standards to regulate emissions from vehicles. Emission categories, known as Euro standards **[2]** are set for new vehicles by the European Commission, and emissions from light duty vehicles (less than 3.5 t) did not reduce substantially up to and including Euro 5 standard (2009).

1.2.6 The long term trend nationally is assumed to be level until the impact on air quality is known of the introduction of new vehicles complying with the more

stringent Euro 6 standards for light duty vehicles and Euro VI for heavy duty vehicles from 2014 onwards.

Figure 2: Trends in emissions in Saffron Walden based on Hill Street automatic monitor (NB: PM₁₀ not monitored in Hill Street after 2012)



1.2.7 Uncertainty is due to a lack of data from real world emission testing, as some Euro 6 vehicles, primarily diesel, have failed to deliver the expected emission reductions during on road driving conditions compared to submitted laboratory testing data. The reason for higher than expected emissions can range from equipment failure, inadequate maintenance, tampering or use of defeat devices. A new EU testing procedure to better reflect real driving conditions has been introduced for new models during 2017 and all new vehicles by 2019. As the proportion of vehicles on the road built under the standard increases, roadside emissions are expected to improve, provided users incorporate and maintain the emission reduction technology provided with the vehicle.

1.2.8 An additional factor has been the increase in proportion of cars and light duty vehicles with diesel engines. Fuel efficiency is greater for diesel engines than petrol and proportionately less CO₂ is emitted, assisting with reducing man made causes of climate change. Increased fuel efficiency lead to earlier national fiscal incentives to encourage diesel usage, however, operating efficiency has been counteracted in a proportion of the fleet by the use of large capacity, powerful engines. Measures are now in place to reduce the proportion as part of the National Action Plan to address NO₂ levels, and there are signs of behavioural shift. Diesel fuel produces four more times NO₂ and up to 30 times more particulates than petrol. Catalytic converters on diesel engines help to reduce particulate matter released but increase the

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ratio of nitrous oxides from the combustion process converted into nitrogen dioxide. The proportion of primary nitrogen dioxide emitted from vehicles, has subsequently increased over recent years. Catalytic converters function fully only when the engine is at high temperature, and will have little impact on emissions where a large proportion of the vehicles on the roads are making short journeys from cold, at low speeds, a characteristic of most peak hour town centre traffic.

- 1.2.9** As a rural area, car ownership and use within Uttlesford is relatively high [3]. Fewer households in Uttlesford do not own a vehicle than any other Essex district, and more households own 2, 3, or 4 vehicles than any other Essex district. Saffron Walden is located in a relatively affluent area compared to the UK as a whole, and the introduction of new vehicles meeting Euro 6 standards can be expected to be at a greater rate than the national average. However, the growth of Saffron Walden and surrounding areas will inevitably lead to increased traffic using local roads, and improvements in emission quality of new vehicles alone may be insufficient to adequately mitigate against increases in levels of emissions, with the risk that the objective will not be met at receptor locations in future years. Further mitigation must therefore accompany development which impacts on the AQMA.

1.3 Background levels of NO₂

- 1.3.1** Exposure to air pollutants is not entirely due to local sources. The monitored level of NO₂ is made up of a combination of the background level and the traffic emissions at a given locality. The background level is made up of regional sources of emissions from distant industrial and transport, and local sources from residential and commercial heating appliances. Background levels for NO₂ are expected to reduce gradually due to improvements in overall emissions from all sources in response to a national problem of elevated levels of NO₂.
- 1.3.2** Comparison of the monitored level with the background level shows the impact of vehicle emissions within the AQMA. Defra provide a mapping database producing estimates of background emission concentrations on 1km x 1km grid square basis, related to the national network of emission monitoring. Background levels within the AQMA are monitored by the Gibson Close diffusion tube, which can be used to verify the Defra figure in the relevant grid square, and adjust the figure for other grid squares. Background levels in the town have been calculated at 37% of the total.

1.4 Defining the AQMA

- 1.4.1** In 2007, AQMAs were declared in three small areas centred on junctions where the breach of the objective had been identified by diffusion tubes. In 2008 additional tubes were placed in the central area and a further junction of concern was identified over subsequent years.
- 1.4.2** Revocation of the three small AQMAs was approved by UDC Cabinet in May 2012 and the larger Saffron Walden AQMA was declared in September 2012.

- 1.4.3** The geographical extent of the new AQMA is a circle of 1400m diameter centred on TL 53950 38300, Elm Grove, in the town centre.
- 1.4.4** A map showing the location of the AQMA is shown in **Figure 3**
- 1.4.5** In common with many market towns, access to Saffron Walden from surrounding areas and within the town is largely dependent on the private car. Elevated emissions are associated with high volumes of slow moving traffic, stopping and starting to negotiate junctions and pedestrian crossings, leading to higher levels of emissions than free flowing traffic. The topography of Saffron Walden is such that the centre is low lying in relation to the outer areas, which reduces the amount of dispersion of emissions by air flow. A major additional factor is the geographical constraints of the historic streets of the town centre, much of which is a conservation area, limiting how modern levels of traffic can be moved around and the type of mitigation measures which can be undertaken. Tall buildings on both sides of narrow streets lead to recirculation of air flow that can trap pollutants, resulting in reduced dispersion and elevated concentrations. Many residential properties are located very close to the roadside raising the likelihood of occupiers being exposed to vehicle emissions.
- 1.4.6** Traffic queues build at the major junctions predominantly during the morning and late afternoon peak travel periods for school and commuter journeys. Exceedances of the national objective for NO₂ have been monitored in recent years at properties close to the following junctions within the AQMA:
- a) Thaxted Road/East St /Radwinter Road/Chaters Hill
 - b) High Street/ George St/Abbey Lane
 - c) Debden Road/London Road
 - d) Bridge Street/Castle St
- 1.4.7** The location of the four junctions is shown in **Figure 4** together with the diffusion tube sites. Where possible, tubes are attached to the façade of residential properties (receptors) to measure levels where exposure to pollutants is relevant. Where this is not possible, levels of NO₂ at the nearest dwelling are calculated using drop off with distance from the tube in accordance with Defra guidance. An allowance for a 10% margin of error in monitoring, an annual mean at the nearest receptor of more than 36µg/m³ is regarded as not meeting the objective level.
- 1.4.8** The Radwinter Rd junction with Thaxted Rd is controlled by traffic lights, and is used by traffic entering the town from the villages to the east of Saffron Walden and from the town of Haverhill. Traffic from the south will include journeys from Thaxted accessing the town centre and the edge of town supermarket on Radwinter Rd. A small number of properties are located close to the road side on three out of four arms of the junction.
- 1.4.9** The High Street/George St/Abbey Lane junction is controlled by traffic lights. Traffic on the north and south arms of the junction can be obstructed by

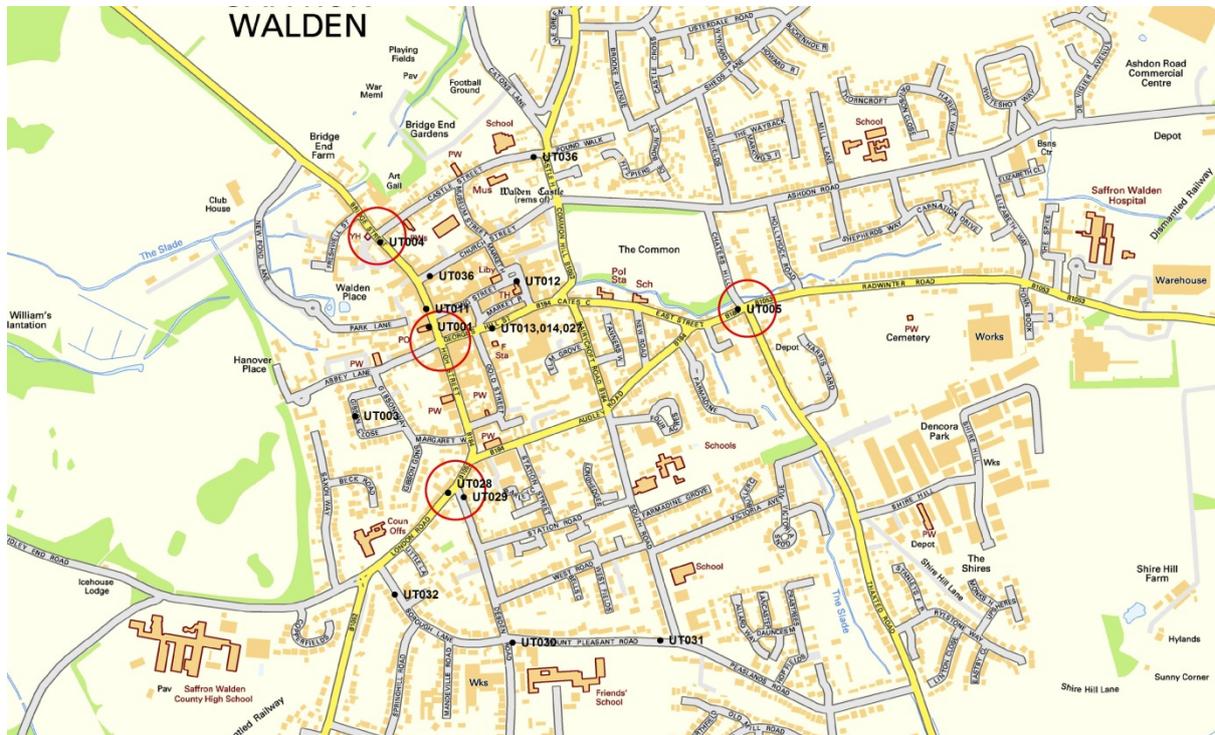
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delivery vehicles at commercial premises on either side of the junction. Consequent queues build up on the southern approach to impact on the mini-roundabout controlled junction at Debden Road and London Road, where properties are at the roadside. At other times, notably during the school run and commuter hours, weight of traffic causes both junctions to exceed capacity.

- 1.4.10** The Castle Street and Bridge Street junction is used by traffic entering the town from the north, which often results in queues building to the north and south of the junction to allow vehicles to negotiate the narrowing of the road at this point. A weight restriction applies to this route, and HGV's need to use the south west access route via Newport Road to enter the town from this direction.
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Figure 4 Diffusion tube sites and location of exceedances



The total number of sensitive receptors which could be exposed to levels exceeding the objectives remains small. Residential accommodation is located on all sides of the junction close to the road at road level at all junctions where exceedances have been recorded. Some commercial units to the south of the junction in the High Street have flats at first floor level. Further monitoring is planned to be carried out at residential properties in East Street where building facades are close to the roadside, and queues build up to access Thaxted Rd traffic lights. This will inform part of the evaluation of progress with the Action Plan.

Section 2 Action Plan proposals

2.1 Key Objectives

- I. To outline the actions which can be taken by UDC and partner organisations to work towards reducing NO₂ levels within the declared AQMA as early as possible to ensure National Air Quality Objectives are not exceeded at relevant receptor locations within the 5 year life of the plan.
 - II. The actions taken must avoid causing displacement of emissions from one hotspot to another such that there is the potential for new exceedances at other locations.
 - III. The actions taken must include measures designed to reduce emissions from vehicles generally and also seek to contribute to a reduction of CO₂ emissions into the atmosphere for climate change mitigation purposes.
- 2.1.1** Indicators will be set to assess progress of implementation of the measures identified where they can be assessed quantitatively, with regard to the impact on NO₂ levels. Proposed measures will be proportionate to the marginal nature of exceedances monitored in recent years. Evidence that all the options have been considered on grounds of cost-effectiveness and feasibility will be provided as part of that process.
- The proposed actions fall within one or more of the following outcomes:
- a) Resisting development which will adversely impact on the AQMA
 - b) Reduction of traffic congestion
 - c) Promotion of alternative modes of travel to the private car
 - d) Reduction in emissions from vehicles and plant

2.2 Planning Policy Measures

- 2.2.1** Planning and development control plays an important role in minimising the potential detrimental impacts that new developments may have on local air quality. Air quality is taken into account during the planning process, and the potential impact of major developments on the AQMA is a material consideration, ensuring that all practicable mitigation measures are implemented where necessary and appropriate. UDC planning policy is drawn from national policy and guidance, and local plan policies, including ECC policies on minerals and waste.

National Planning Policy and Guidance

- 2.2.2** The National Planning Policy Framework (NPPF) [5] produced in March 2012 guides local strategic planning and sets out the government's approach to planning. Central to the approach is sustainable development including focusing significant development in locations which are or can be made

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sustainable, ensuring design gives priority to pedestrian and cycle travel and providing infrastructure necessary to support low emission travel choices.

- 2.2.3** The framework suggests significant development should be accompanied by Travel Plans for residents and supporting those for new businesses, and car parking restrained to encourage other modes of transport to become quicker and more convenient.
- 2.2.4** Planning decisions should ensure that any new development in an AQMA is consistent with the local air quality action plan. Specific to air quality, **paragraph 124** provides that:

“Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with local air quality action plans”.

- 2.2.5** Inclusion of air quality in the NPPF makes it a material consideration for development likely to produce vehicle trips or increase the number of people exposed to emissions above the air quality objectives
- 2.2.6** National Planning Practice Guidance **[6]** has since been published which provides guiding principles on how planning can take account of the impact of new development on air quality. The guidance advises that the Local Plan may need to consider:

“Ways in which new development would be appropriate in locations where air quality is or likely to be a concern and not give rise to unacceptable risks from pollution. This could be through, for example, identifying measures for offsetting the impact on air quality arising from new development including supporting measures in an air quality action plan or low emissions strategy where applicable.”

Uttlesford Local Plan

- 2.2.7** The commitment of UDC to protecting residents from long term exposure to poor air quality is reflected in planning policies within the Local Plan, which set out a number of general development management criteria. The previous Local Plan was adopted in January 2005 and the following policies from the plan relating to air quality are current, ahead of adoption of a new Local Plan:
- a) Policy ENV 13 – *“Development that would involve users being exposed on an extended long-term basis to poor air quality outdoors near ground level will not be permitted.*
 - b) Policy GEN 1 provides that development will only be permitted if *“development encourages movement by means other than by driving a car”*

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c) Policy GEN6 requires development to make provision for the necessary supporting infrastructure, including:

- junction improvements
- provision of cycle/footways
- public transport
- infrastructure to facilitate low emission vehicles
- additional monitoring of air quality
- Parking schemes to reduce road congestion.

2.2.8 Where provision cannot be made through the use of planning conditions to render a development acceptable which would otherwise be unacceptable in planning terms, developers may be required to enter a legally binding obligation made under Section 106 of the Town and Country Planning Act 1990, usually for measures beyond the control of the developer. The funding can be for any reasonable measure that can make a positive contribution to improving air quality.

2.2.9 The drivers of growth in traffic within Saffron Walden are the committed developments as set out below, and those that will come forward as part of the new Local Plan.

2.2.10 The new Plan will set out the development strategy until 2033 and allocate sites for new homes, employment, infrastructure and open space. A feature of Saffron Walden is the location of main transport links and secondary school to the west of the town, and proposals for development which will lead to increased traffic flow through the town by virtue of its location will not be appropriate without suitable mitigation to reduce congestion and minimise the generation of car trips.

2.2.11 In addition to land allocations, the new draft Plan will contain supporting policies to protect the qualities of the district, part of which will be to ensure the impact of land allocations on air quality in the AQMA is given adequate consideration and weight in the decision making process. The policies will be consistent with the provisions of the NPPF. Policies will be included to support the promotion of access to development by means other than private vehicles, and in addition the following are directly related to air quality:

A *Policy EN16 Air Quality:*

Development will be permitted where it can be demonstrated:

- a) *That it does not lead to significant adverse effects on health, the environment or amenity from polluting or malodorous emissions, or dust or smoke emissions to air; or*
- b) *where a development is a sensitive end-use, that there will not be any significant adverse effects on health, the environment or amenity arising from existing poor air quality, as set by national*

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objectives, targets and emission limits for pollutants, or sources of significant odour.

B *Specifically applicants, where reasonable and proportionate, according to the end-use and nature of the area and application, must demonstrate that:*

- a) development has regard to relevant UDC Air Quality Technical Guidance*
- b) development within or affecting an Air Quality Management Area (AQMA) will also be expected to contribute to a reduction in levels of air pollutants within the AQMA*
- c) the development does not prevent compliance with national objectives, targets and standards for pollutants*
- d) any sources of emissions to air, odours and fugitive dusts generated by the development are adequately mitigated to prevent loss of amenity for existing and future occupants and land uses*
- e) any impacts on the proposed use from existing poor air quality, odour and emissions are appropriately mitigated*

C *Policy SP12 Environmental Protection (in relation to AQ):*

The Council will support development which ensures the prudent and sustainable management of the District's towns, villages and countryside by:-

- a) employing best practice in sustainable design and construction*
- b) promoting development which is located and designed to be energy efficient*

D *Policy EN15 Pollutants:*

- a) The potential impacts of exposure to pollutants must be taken into account in locating development, during construction and in use.*
- b) Planning permission will not be granted where the development and uses would cause adverse impact to occupiers of surrounding land uses or the historic and natural environment, unless the need for development is judged to outweigh the effects caused and the development includes mitigation measures to minimise the adverse effects.*
- c) Developments sensitive to pollutants will be permitted where the occupants would not experience adverse impact, or the impact can be overcome by mitigation measures.*

2.2.12 Currently guidance is provided to developers on a case by case basis. An air quality Technical Guidance Note adopted by the Council will be made

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available to developers to provide clarity to the planning process in relation to air quality. It will set out requirements for the district as a whole, including defined criteria in terms of additional traffic generation for when an air quality assessment is necessary and the level of detail required. Information will be provided on the circumstances where a development may be refused on air quality grounds, and where an application cannot be refused on air quality grounds, on the appropriate level of on-site mitigation and provision for planning obligations to support mitigation beyond the control of the developer.

2.2.13 Guidance will be included to encourage:

- the siting of residential, and commercial development where appropriate, within comfortable walking and cycling distance of amenities and where it can be linked to services and facilities by a range of transport options
- development and transport planning to be co-ordinated to reduce the need to travel by car, and increase public transport use, cycling and walking
- energy efficiency measures and the use of renewable sources of energy will be adopted in the construction of new builds to reduce emissions from heating systems, which contribute to local air pollutant emissions

2.2.14 Conditions applied to new development under the new policies would be able to require infrastructure to support use of sustainable modes of transport and information on transport to users of the development. Larger developments may need to include bus stops where appropriate, and every new home to be provided with safe storage for bicycles, for those with a garage, a charge point for plug in vehicles or where not appropriate or feasible, communal pay-as-you go points for overnight or rapid charging.

2.2.15 Information would be in the form of a travel plan for major development, with clear proposals for reducing travel to and from the site by car, including for staff at new commercial development, to encourage use of sustainable travel.

2.2.16 The plans would be expected to contain a series of initiatives to encourage the uptake of low emission fuels and technology, and local journeys being carried out on foot or by cycling, also to raise awareness of the benefits of reducing car travel. Information should be provided on public transport and car sharing schemes, and vouchers can be made available to new occupiers towards bike purchase or bus travel. Plans would be required to be effectively communicated and updated regularly. Travel plan monitoring fees can be secured through planning obligations, to support monitoring of traffic generated by the development and identify new initiatives if necessary.

2.2.17 For smaller developments, a sustainable travel statement would be expected to accompany the application, including provision of infrastructure commensurate with the size of the development.

2.2.18 Development in Saffron Walden approved since declaration of the AQMA and has been subject to mitigation measures secured either through condition or

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through the use of obligations to secure matters which are beyond the direct control of the developer.

2.2.19 Table 1 shows the details of the most recent applications and the measures secured.

Table 1: Recent planning applications with developer contributions and/or planning conditions relevant to air quality

Planning Application	Section 106 agreement	Conditions relevant to air quality
UTT/0400/09/OP:130 dwellings and B1 employment land Ashdon Road + UTT/0407/09/OP 15 dwellings off Little Walden Road Completed 2015	£250,000 held for 10 years by ECC towards Thaxted Rd/Radwinter Rd junction improvements or such other cycle/highway works as deemed necessary in the vicinity of the land, £3000 to monitor travel plan, £18,500 to upgrade bus stops	Cycle parking, transport information packs, residential and business travel plans,
UTT/13/1981/OP 60 bed care home + UTT/13/3406/FUL 52 dwellings Both at Radwinter Road Dwellings complete, care home not completed mid 2017	£3000 x 2 towards Saffron Walden to Audley End cycle path	
UTT/13/3467/OP 230 dwellings + B1 office space + extra care housing or 200 dwellings + B1 office space + extra care housing + primary school Land off Radwinter Road Commenced mid 2017	£5000 towards parking schemes, bus service into the development, capacity enhancements at London Rd/Borough Lane and Newport Rd/Audley Rd junctions. £473,000 towards highway mitigation works £26,290 towards cycle link between Monks Hill and the school and Tesco site on Radwinter Road, £3000 to monitor travel plans, £112,700 towards cycle link to Audley End	Transport information packs, residential and business travel plans.
UTT/13/2423/FUL Builders merchant, B1 employment land, commercial units including retail, hotel, and 167 dwellings. Land off	Residential and business travel plans, bus service enhancements, £170,000 contribution capacity work at Ashdon Rd mini roundabout and other identified highway	Cycle link onto Ashdon Rd, electric vehicle charging points, pedestrian and cycle signage to town centre and

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Ashdon Road Builders merchant complete, dwellings under construction mid 2017	projects, £5000 towards Ashdon Road parking scheme	Audley End
UTT/13/0268/FUL Retail warehouse units, garden centre, a discount food store, café. Land off Thaxted Rd. Partially complete mid 2016	£3000 to monitor travel plan	Cycle/pedestrian link to Thaxted Rd, cycle parking
UTT/14/2003/FUL Thaxted Road Flats/offices/shops. Under construction mid 2017		Travel Pack, cycle parking
UTT/16/2210/OP Land off Little Walden Rd 85 dwellings Allowed on appeal August 2017		Travel Plan, EV charging points, pedestrian& cycle links and crossings

2.2.20 Planning Policy Actions:

Proposed action 1: To adopt revised planning policies which will ensure the impact on air quality in the AQMA is given adequate consideration and weight in the decision making process.

Proposed action 2: To produce a planning Technical Guidance document for air quality, to ensure the impacts of new development on the AQMA, the impact of siting new receptors in the AQMA, and the level of mitigation to be provided, are fully considered in all applications

2.3 Essex Local Transport Plan

2.3.1 The Essex LTP3 [4] sets out the highway authority's strategy for transport from 2011 until 2026 and commits ECC to the following policies which will benefit air quality by reducing congestion and improving traffic flow:

- a) Supporting and encouraging the use of low carbon travel, focussing on journeys to school and work.
- b) Enabling greater travel choice by improving public transport and facilities for alternative modes of transport to car travel.
- c) Examining opportunities to introduce electric vehicles and alternative fuels
- d) Assisting travel planning for new developments to encourage walking and cycling.
- e) Ensuring new developments provide safe, attractive and convenient routes for walking and cycling to everyday amenities.
- f) Ensuring all schools have active travel plans.
- g) Facilitating better broadband coverage to encourage home working

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- h) Ensuring the road network operates efficiently including minimising disruption from roadworks.
- i) Adopting measures to reduce emissions from the ECC fleet vehicles.
- j) Ensuring HGV's follow the most appropriate routes.

2.3.2 The measures proposed in this Action Plan support the Essex LTP in as far as UDC is able to through its statutory functions and allocation of resources.

2.3.3 Schools in Saffron Walden attract a large number of car and bus journeys, many travelling through the AQMA, and a reduction in the volume of school related traffic at peak hours will benefit congestion and air quality. Many of the buses used for school travel are aged diesel vehicles with a disproportionately high contribution to harmful emissions. The LTP commits to working with education providers to improve access to schools by promoting walking and cycling, and to encouraging schools to update their existing travel plans on a regular basis, with the aim of using their own resources to achieve measurable reductions in car journeys by staff, parents and pupils. Provision of "walking buses", and identifying suitable drop off points were suggested through the public consultation. Where new educational facilities are to be provided in association with residential development, ECC assist in the development of travel plans, and provide cycle storage facilities and footpaths as necessary on land in their control, to assist access to the facility. Provision of cycle/footpath links from new developments to new or existing schools will be supported by ECC. The public consultation identified a need for new pedestrian crossings on the busiest routes within the town, for new and existing crossings to be reviewed for safety, and for new routes to be well designed. Resources would need to be made available by UDC to ensure effective support is provided to ECC to deliver identified measures.

2.3.4 The LTP commits to helping businesses develop Travel Plans. Larger employers, including UDC and ECC are in a strong position to influence the timing and methods by which their employees travel to work. Car sharing schemes, flexible and home working, encouraging and subsidising the use of public transport, with incentives for walking or cycling to work, are all ways in which congestion at peak periods can be reduced. The impact of journeys carried out for work purposes can be reduced by rewarding car sharing and providing financial incentives for choosing low emission vehicles.

2.3.5 Increasing the number of walking and cycling journeys to access school, workplaces or amenities would have wider benefits for an individual's health and wellbeing associated with increased activity, notably a reduction in obesity and cardio vascular disease. Reducing the number of short car journeys, which have a disproportionate negative impact on air quality in the town, would also have wider public health benefits such as improved pedestrian safety and reduced noise from traffic.

2.3.6 Under the LTP objective of improving and increasing amounts of cycling, ECC produced a Cycling Strategy for Uttlesford in 2014 [8]. Included in the strategy are proposals for cycling infrastructure and the development of off road routes in and around Saffron Walden. On some routes, the narrow width of historic

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streets within the town constricts the space available for cyclists. Cyclist training for all ages and provision of secure parking and storage will increase the appeal and safety of cycle usage.

- 2.3.7** One of the first dedicated routes to be developed is the route to Audley End station, about 2.5 miles away from the town centre, a route which was proposed in the current Uttlesford Local Plan. In order to encourage more cyclists along the route, particularly rail users, a route along Wenden Road designed in consultation with local stakeholders has been provided. A significant increase in the use of cycling to access rail services would assist in reducing congestion in Saffron Walden.
- 2.3.8** ECC have committed to further develop cycle links, including protected off road paths through the town by utilising existing footways, and to make the existing road network safer and more attractive for cyclists. Good signage to cycle-ways including direction markers will assist in making the routes easy and enjoyable to use. The public consultation supported improvements, and suggested some one way streets could incorporate a two way lane for cyclists.
- 2.3.9** A continuous route under consideration is a link from the town towards Cambridge, by connecting to Cambridge County Council's off carriageway cycle path north of Gt Chesterford beside the A1301 to the junction with the A505, and northwards. The Local Plan proposal for North Uttlesford Garden Village includes delivery of a package of sustainable transport measures including cycle links from the development to Chesterford Railway Station and traffic light controlled crossing of the A1301/A11 junction.
- 2.3.10** The LTP commits to providing a residential travel pack to house purchasers, to include information on routes for cycling, footpaths and public transport.
- 2.3.11** The need to travel to workplaces will be reduced as the level of home working rises. The availability of a fast broadband service can be a barrier to homeworking. UDC Council has been working closely with Superfast Essex to provide the opportunity for as many homes and businesses (premises) in Uttlesford to have access to fibre superfast broadband. There are 42,800 premises in Uttlesford and 37,300 have access to fibre superfast broadband or are in Superfast Essex plans to have access (i.e. 87% of premises). This would leave a forecast 5,500 premises with either no existing or planned fibre superfast broadband service. In March 2017 the Cabinet approved an investment of £500,000 for inclusion in Superfast Essex's broadband procurement process referred to as Phase Three. In June 2017 Superfast Essex concluded its Phase Three procurement. Once fully implemented by end 2019 Phase Three is forecast to enable an additional 4,600 premises in Uttlesford to have access to fibre superfast broadband bringing the total to 41,900 premises by end of 2019 (i.e. 98% of premises).

2.3.12 Local Transport Plan actions

Proposed action 3: To work with ECC to facilitate the provision of new cycle/pedestrian routes and cycle storage and promote the routes available.

Proposed action 4: To increase cycle storage on UDC land in Saffron Walden where practical to do so.

Proposed action 5: To assist ECC in working with local schools and businesses in the review and upgrading of existing travel plans and to assist individual schools or businesses to develop and promote plans.

Proposed action 6: To support the provision of superfast broadband service to all parts of the district.

2.4 Traffic Management

2.4.1 Traffic management is a function of ECC as highway authority. Queuing traffic has been identified as the predominant reason why the objective for NO₂ has not been met or has been close to exceedance at some junctions in the town centre, and measures to improve traffic flow will be the key to lowering emissions within the AQMA, and avoiding exceedances as a result of additional traffic.

2.4.2 The development of the emerging Local Plan has taken account of the impact on the road network of growth in and around the town.

2.4.3 ECC commissioned consultants Jacobs[9] to undertake NO₂ dispersion modelling to assess the effects of the previous draft Local Plan developments on concentrations at the four hotspot junctions in Saffron Walden identified in section 1.4. UDC later commissioned Essex Highways to undertake a highways impact assessment (HIA) [10] of the previous draft Local Plan site a location proposals against highway capacity in key areas, including Saffron Walden. ECC have reviewed both and carried out extensive further studies to update modelling scenarios for traffic management interventions, as revised housing allocations emerge. Studies have included census journey to work data, ANPR data, origin and destination surveys for town traffic following recently completed development, and forecasts to take account of committed but not yet completed development.

2.4.4 Some funding for junction improvements has been secured through developer contributions from completed development. The funding is set out in **Table 2**.

2.4.5 The restrictions inherent in the historical road network of Saffron Walden make it unlikely for a solution to be found which would improve the capacity of every junction. The following mitigation measures currently under consideration were identified in the HIA for inclusion as part of the emerging Local Plan:

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- a) One way traffic in Borough Lane (westbound) and Borough Lane to Newport Rd priority junction
- b) Northbound traffic restriction on Debden Rd from the junction with Borough Lane and Mount Pleasant Rd and replacement of roundabout at Debden Rd/London Rd junction with priority junction
- c) Relocation of pedestrian crossing on High Street north of junction with George St to line up with Park Lane pedestrian route to Swan meadow car park, and bring traffic stop line further south.

2.4.6 Debden Rd/ London Rd junction is one of the four NO₂ hotspot junctions, and reductions to queues resulting from the altered traffic flow will be beneficial to reducing exposure at sensitive locations close to the junction. There is limited scope for improvements to the remaining three hotspot junctions in the absence of new road space to route traffic avoiding the centre of the town. A proposal for 150 houses east of Thaxted Road will form part of the Local Plan land allocation for Saffron Walden. ECC have carried out evaluation of the traffic impact on the Thaxted Road/Radwinter Road junction, and have concluded that improvements to the Peaslands Rd/Thaxted Rd junction which would be delivered by the development would slightly reduce traffic at the Thaxted Road/Radwinter Road junction. The developer would be expected to undertake appropriate modelling to support the impact on emissions.

2.4.7 Liaison will continue with ECC throughout the life of the plan as part of the review process to assess whether additional traffic management measures are appropriate.

2.4.8 In addition to junction improvements, the scope for control of parking was considered on the approaches to some junctions within the AQMA and on some of the main routes through the town where parking reduces the flow of traffic leading to congestion. Schemes identified include:

- a) peak hour suspension of the use of a limited number of on street parking bays on the High Street approach to George Street from the south, to allow two lanes of traffic to feed through the junction
- b) Waiting restrictions to part of Peaslands Road, which provides an east/west route, avoiding the town centre routes.
- c) Restrictions to part of Ashdon Road which is impacted by residential traffic from new development north and south of the road

2.4.9 Enforcement of existing town centre wide parking restrictions assists traffic flow, and the scope for targeted campaigns for infringement hotspots will be assessed.

2.4.10 Adequate and clear signage to Swan Meadow car park with information that it serves the town centre; to new amenities, the leisure centre, food stores and Audley End station helps to reduce unnecessary mileage and will be considered when new development is completed or where insufficient signage is identified. Provision of an electric powered shuttle bus from Swan Meadow

car park to the market square was suggested under the public consultation; however, recent experience of shuttle bus operations during temporary closure of the central multi-storey car park demonstrated it to be not cost effective.

2.4.11 Traffic management actions

Proposed action 7: To work with ECC to implement a scheme of measures aimed at improving junction capacity within the AQMA identified to be necessary as part of the emerging Local Plan once adopted.

Proposed action 8: To work with ECC to implement changes to parking controls on main routes through the town, and access to the centre of the town by HGVs, which will demonstrably reduce congestion.

Proposed action 9: To support targeted enforcement of parking restrictions where identified to be an issue, on main routes through the town centre.

Proposed actions 7-9 to were identified as the least popular measures following the public consultation phase of the Action Plan, reflecting concern at the nature of specific measures, although overall more were in favour of the measures than against. There was support for targeted enforcement of existing parking restrictions where roads and junctions were regularly being impeded by stationery vehicles. Further suggestions included extending the weight restriction for HGV's entering from the north at Bridge Street to include northbound vehicles exiting the town, to reduce use of the High Street, and extending the 20mph limit currently applying to Castle Street to other town centre roads.

Proposed action 10: To provide clear informative signage to Swan Meadow car park, new amenities, leisure centre, food stores and Audley End Station.

2.5 Corporate action by UDC

2.5.1 UDC commits to reducing its own impact on air quality as a result of its operational activity, and from staff journeys to and from the workplace.

UDC Travel Plan

2.5.2 The organisation currently has over three hundred employees, based mainly at the offices in Saffron Walden, with a number of smaller sites. The main offices are shared with partner organisations.

2.5.3 In 2012 a Green Travel Plan was produced with the following proposed actions:

- a) Achieving greater take-up of home working
- b) Increasing provision of flexible working arrangements
- c) Encouraging greater use of tele-conferencing facilities

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- d) Increasing provision of bike rack and storage facilities to facilitate more cycling and walking
- e) Encourage car sharing and allocate dedicated car share bays
- f) Provide further Green Driving Training
- g) Supporting production of a green travel plan for the three UDC leisure sites operated by outside contractors

2.5.4 A number of human resource policies are in places which are relevant to travel choices:

- a) Maintaining a flexi-time system where staff are required to undertake 'core hours' but with flexibility at each end of the day for start and finish times, which could facilitate car sharing
- b) Home working : over 100 staff are currently enabled to work from home at any one time with the permission of their manager, to reduce the number of staff travelling to and from offices on a daily basis
- c) A cycling allowance is in place for staff and members to encourage cycling for work purposes
- d) A staff car share scheme is in place

2.5.5 More recently a salary sacrifice bike purchase scheme has been made available, and an additional 6 secure, covered cycle spaces have been provided at the main offices to encourage cycle usage.

2.5.6 Information on individual's travel choices is made available for staff and the travel plan is promoted to new staff.

2.5.7 An annual audit of the measures within the travel plan will be undertaken to assess progress in achieving the stated outcomes. Staff travel surveys will be carried out every 2 years to understand the impact of travel behaviour within the organisation and inform review when setting objectives, actions and targets for the future life of the plan.

Proposed action 11: To continue to review UDC travel plan and review opportunities for a shared travel plan with partner organisations using UDC facilities within the town

UDC Fleet and buildings

2.5.8 UDC operates in the region of 75 fleet vehicles, many of which operate within the town. Refuse collection routes are already scheduled to avoid contributing to peak hour congestion, and opportunities will continue to be explored to further reduce emissions, for example through the use of electrically operated bin hoists if proven to be cost effective. In addition to emission reductions, investment in low emission vehicles may be financially beneficial due to wider taxation incentives when procuring additional or replacement vehicles across the fleet, and lower fuel costs. UDC can also lead by example by operating low emission vehicles throughout the district, with some fleet vehicles being suitable for all electric.

2.5.9 Opportunities to reduce air pollutant emissions from heating facilities in UDC owned buildings, including its general needs housing stock and sheltered housing schemes within Saffron Walden, will continue to be sought, by ensuring optimum energy efficiency, and using renewable energy sources where practical and cost effective to do so, as part of a wider commitment under the UDC Climate Change Strategy.

Proposed action 12: To continue to pursue options to install renewable energy technologies at suitable UDC sites within Saffron Walden, to review UDC fleet procurement and implement changes were identified as practicable and likely emission reductions justify the capital expenditure.

2.6 Bus services

2.6.1 Public transport has the potential to replace a significant number of car journeys, but can be regarded as slow, inconvenient and unreliable, and the vehicles used for some routes are old, with subsequent higher emissions. A convenient service needs to be maintained to amenities within or close to the town, and to connect to nearby towns and villages. A small number of services in Saffron Walden are operated independently of ECC, and the majority are operated under contracts held by ECC. ECC can influence the convenience and experience of bus travel through the tendering criteria for contracts. Good information on services, easily accessible, good quality vehicles, and responsive timetables can improve the image and experience of bus use.

2.6.2 Where appropriate to do so, infrastructure for bus services will be required at new residential development to enhance the service provided in the town.

2.6.3 A significant increase in the use of public transport would assist in reducing congestion in Saffron Walden, and improvements to the stock would assist in reducing emissions. Action to improve bus services was the most popular measure identified under the public consultation. Suggestions included facilitating co-operation between providers to produce a coherent service and the provision of cycle racks next to key bus stops serving villages.

Proposed action 13: to encourage ECC to procure integrated bus services with high quality facilities, and a frequent and reliable service linked to the rail service at Audley End. Information on public transport services will be made readily available in UDC buildings and via the website.

2.7 Raising awareness

2.7.1 Inclusion of air quality by the Department of Health as an indicator for public health (**see section 6.1**) is intended to encourage action to improve air quality nationally and to raise awareness of its effects on how well people live at all stages of life. Effective measures for tackling emissions depend on the impact from air quality on public health being understood by the public and all stakeholders, and accepting that individual action matters. UDC will continue

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to proactively communicate on air quality in a clear and understandable way, with the aim of enabling individuals to make informed choices to reduce their own exposure to emissions and to reduce their contribution to emissions, whether by choice of vehicle or mode of travel. A switch from diesel fuel to petrol would have a negative impact on greenhouse gas emissions, and no benefit to physical well-being, and the aim would be to encourage travel by means other than a private vehicle.

2.7.2 Information and education will be provided to the public through UDC community events and publications, focussing on:

- a) The health impacts of emissions and relationship to reduction in respiratory conditions such as asthma from improved air quality.
- b) Promotion of health and financial benefits of sustainable travel to businesses and individuals.
- c) Encouraging a reduction in short journeys by car within the town.
- d) Promote use of low emission vehicles wherever possible.
- e) Choices for sustainable transport and reduced car travel.

2.7.3 Comprehensive information on air quality and monitoring carried out by UDC is provided on the UDC website, with a link to the national real time air pollution levels and forecasting service provided by Defra:

<https://uk-air.defra.gov.uk> The link allows those individuals most at risk to the effects of poor air quality to check the national forecast and take action to reduce the effects where required. UDC web pages will be updated and reviewed as necessary.

2.7.4 Whilst many new cars are fitted with automatic switch off in queues, buses, HGV's and taxis may be a significant source of emissions from idling vehicles. Anti-idling measures as part of licence conditions can be considered to encourage drivers to switch off engines in queues in the most congested streets where receptors are close to the road, to prevent wasted fuel use and unnecessary emissions. Appropriate signage within the town centre may be needed to support the measures. The public consultation included support for anti-idling measures, also targeting traffic at school set down and pick up times. In June 2017, UDC took part in the National Clean Air Day, which focussed on a local anti-idling campaign, and will be repeated to coincide with future national action days. Other initiative which UDC is supporting is the Essex wide park and stride scheme for local schools.

2.7.5 The Roadside Vehicle Emissions (Fixed Penalty) Regulations 2002 permit Local Authorities to take action against drivers who leave their vehicle engines running unnecessarily when parked, which would be more applicable in streets where loading, unloading or waiting is taking place.

Proposed action 14: To identify opportunities to raise public awareness of air quality issues through education initiatives and publicity campaigns

2.8 Car sharing

2.8.1 A reduction in car use can be achieved through car sharing, where a passenger usually makes a contribution towards fuel costs. It is often promoted within residential and business travel plans; however there are opportunities for the extent of sharing to be increased. It allows people to benefit from the convenience of car travel, whilst alleviating the associated problems of congestion and parking, and reduces costs of travel for individuals who participate. It also retains the usefulness of car travel for those for whom walking, cycling or public transport may not be an appropriate or viable option. Use of car sharing on just one day per week would contribute to the overall reduction of vehicle usage. UDC already operates a scheme for sharing travel by car, and is in a position to encourage other employers within the town to develop their own car sharing schemes for journeys to and at the workplace.

Proposed action 15: To provide advice and raise awareness of car sharing and associated database software available to employers

2.9 Low emission vehicles (LEVs)

2.9.1 Increasing the proportion of vehicles on the town's road network which are considered to have low emissions is central to improving local air quality. Individuals and fleet operators making the choice to switch from diesel to petrol vehicles will assist in reducing emissions. Electric, hybrid when operated in electric mode and hydrogen fuel cell and LPG powered vehicles produce no or low emissions at point of use. Standards for what constitutes a LEV will evolve as technology develops.

2.9.2 In addition to the development control policy provisions related to LEV's, other measures are likely to be needed to implement greater uptake, aimed at convenience and cost benefits. The current government has committed to an "Automated and Electric Vehicles Bill" which will require the installation of charge points at existing motorway services and fuel stations.

2.9.3 Car parking incentives: The provision of priority spaces or lower parking fees for LEVs at UDC car parks should be evaluated, with those spaces located at the areas closest to the town centre, and for residential parking permits where these are available. Provision would require enforcement and clear signage, and the reduced revenue would need to be balanced against the need to protect public health.

Proposed action 16: To consider the provision of preferential charging for UDC controlled parking spaces for vehicles meeting low emission standards. To utilise legislative provisions to provide LEV infrastructure

2.9.4 Taxi fleet: Taxis provide an important flexible means of transport within the town, with a central rank located inside the AQMA. The majority are diesel engine vehicles, and the relatively large proportion of short journeys over a small area of the town makes taxis well suited to use of low emission vehicles

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as an alternative, such as full plug in electric, plug in hybrid or hybrid vehicles. With the high mileage covered, reduced fuel costs combined with income tax and vehicle tax incentives, the potential running cost savings could be significant. Taxis are also well placed to increase awareness amongst the public of this type of vehicle.

2.9.5 A range of options to improve taxi emissions will be explored, including amending the taxi licensing policy to require any new or upgraded taxi to meet set emission standards, combined with fiscal incentives in the interim to encourage a switch to LEVs. The feasibility of providing a charging point at the town centre rank will also be assessed.

2.9.6 Approximately 2000 vehicles are licensed by UDC, only a small portion of which will operate in Saffron Walden on a regular basis. Data on the fleet will need to be evaluated to assist in assessing whether controls should be applied to the full fleet or limited to those accessing the town centre. Liaison with the taxi operators will form an important part of the decision making process, and awareness of air quality issues will be communicated through the regular taxi chat bulletins issued by UDC.

Proposed action 17: To engage with the Uttlesford licensed operators' forum with the aim of introducing emission controls for licensed taxis

2.9.7 Bus fleet: Emissions from buses are estimated to be contributing 12% of NO₂ emissions in the town and there is evidence of vehicle drivers and passengers on older buses being exposed to as high or higher level of emissions inside the vehicle than outside. Measures to ensure emissions are as low as possible from the existing fleet should be considered. Standards can be set for minimum Euro engine designation (Euro V) for existing and newly introduced vehicles accessing the town centre. Buses operated under contracts procured by ECC should be included. Support for retrofit projects and bids through cleaner bus funding should be considered.

Proposed action 18: To encourage ECC to set emission standards for new and existing buses under contract operating within the town.

2.9.8 Fleet LEVs: Aside from the UDC fleet, support will be made available to businesses and other public authorities to switch to LE fleet vehicles in terms of signposting and provision of information on available models and financial incentives.

Proposed action 19: To work with operators of fleet vehicles within the town to facilitate the introduction of low emission vehicles.

2.9.9 Infrastructure: Convenience of use of LEVs can be facilitated through provision of charging facilities at UDC owned car parking spaces including UDC workplaces, and UDC owned leisure facilities, to supplement provision on new developments through the planning regime. Currently there are two fast charge points at the UDC owned Lord Butler Leisure centre on Peaslands

Road. Options to encourage the single fuel service station within the town and others within the district, and larger employment sites, to provide a charging point can be explored.

Proposed action 20: Provide electric charging facilities on UDC owned parking spaces in the town where practical and economically feasible to do so, and encourage the provision of facilities at suitable privately owned sites

2.10 Heavy goods vehicles

2.10.1 HGVs have been estimated to be contributing 24% of NO₂ emissions in the town, and measures to control movements through the town in peak periods would be beneficial in reducing emissions and congestion. The contribution is likely to reduce due to a reduction in local HGV traffic as a result of development changes, and vehicle renewal. The transport assessment submitted with the consented planning application to redevelop Ashdon Road Industrial Estate predicted a reduction in HGV movements of up to 10% at the four junctions under consideration due to closure of premises. Opportunities exist when consent is granted for commercial development to require associated fleet and freight vehicles to be ultra-low emission. Aside from the impact of HGV's travelling through the town, parking of HGVs on the both approaches to the High Street junction for deliveries can be a cause of obstruction and congestion, notably in peak periods. Parking on the southern approach is addressed in measure 8. Consideration should be given to timing commercial deliveries to High Street premises on the northern approach outside of peak travel times, for example 07.00-09.00 and 15.30 -16.30 M-F. The measure will require working with local businesses and enforcement of restrictions with the help of conventional signage. A useful forum to evaluate controls would be a regional freight transport group.

Proposed action 21: To use planning policies to set emission controls from heavy goods fleet operating at or from a development, to work with ECC to introduce delivery time restrictions to High Street north Saffron Walden.

2.11 Monitoring

2.11.1 Good quality monitoring data at relevant locations is essential for determining when the AQMA can be revised or revoked, which can usually be considered following three years of concentrations below the objective. It will also assist with assessing progress of approved action measures, and monitoring at additional sites to existing will inform the need to define further action. At present monitoring by use of diffusion tubes is carried out on the northern section of the High Street where receptors are generally closer to the kerbside. Further diffusion tube monitoring may be needed close to properties on the southern approach of the junction, to provide a better picture of levels associated with the junction, and at other locations where properties are close to the kerbside such as East Street on the approach to the junction with Thaxted Road and Radwinter Road. A review of the sites will be carried out in the autumn of 2017 to allow monitoring to commence in January 2018.

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2.11.2 An automatic monitoring station will be sited at the Thaxted Rd /Radwinter Rd junction during 2017 to further inform conditions at the junction and support data collected at Hill Street station.

2.11.3 Currently national real time information is available on the UK-Air website provided by Defra, to assist those most at risk from the effects of poor air quality, along with health advice.

2.11.4 Monitoring results will be assessed during the 5 year life of the plan to determine whether levels will remain compliant in the long term and as a result UDC can consider revocation of the AQMA.

Proposed action 22: To review the need for additional diffusion tube monitoring of NO₂ within the town, and install a further automatic station to inform basis for decision making.

Section 3 Outcomes and timescales

- 3.1** The proposed measures are set out in **Table 2**, detailing the action required, EU categories as required by TG (16), responsible authority, timescale for implementation, how outcomes will be measured, an estimation of the likely contribution towards reduction of annual mean nitrogen dioxide levels, and other comments including cost estimates where available. Emission reduction estimations that may be achieved by implementing any single measure or combination of measures are based on professional judgement. Projected quantified emission reductions determined through detailed emission dispersion modelling are not available prior to adoption of the emerging Local Plan. Defra guidance confirms that detailed cost benefit analysis is not necessary for most measures, and an indication is adequate. The proposed alterations to traffic flow (based around London Road, Borough lane and Debden Road) are subject to further evaluation by ECC following completed development, and confirmation of housing allocations in the Local Plan.

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Table 2: Summary of proposed measures

No	Measure	EU category	EU classification	Lead authority	Planning Phase	Implementation phase	Outcome Indicator	Target emissions impact	Comments
1	To adopt revised planning policies which will ensure the impact on air quality in the AQMA is given adequate consideration and weight in the decision making process.	Policy Guidance and Development Control	Air Quality Policies	UDC	2017	Concurrent with adoption of Local Plan	Policies contained in the Local Plan once adopted. Use of sec 106 funds to implement action plan	Low, but potential to mitigate against emission increases associated with future growth.	Policies have been drafted and will be contained within the Local Plan Pre-submission consultation, with outcomes subject to Local Plan adoption. As the local plan can be challenged, timescale is to be confirmed. Cost: within existing resources.
2	To produce a planning Technical Guidance document for air quality, to ensure the impacts of new development on the AQMA, the impact of siting new receptors in the AQMA, and the level of mitigation to be provided, are fully considered in all applications.	Policy Guidance and Development Control	Air Quality Technical Guidance	UDC	Early 2017	Mid 2017	Publicly available by December 2017	Low, but potential to mitigate against emission increases associated with future growth.	Technical Guidance document has been completed and is subject to planning policy adoption. See measure 1 for timescale. Cost: within existing resources
3	To work with ECC to facilitate the provision of new cycle/pedestrian routes and cycle storage, and promote the routes available.	Transport Planning and Infrastructure	Cycle Network	ECC & UDC	2017	2017-2022	Number of new routes provided, increase in no of storage facilities per annum and users of facilities year on year	Low, dependant on reduction in number of vehicles on road network	Outcomes dependent on priorities & developer contributions, which the plan cannot timescale. ECC obliged to respond to AQAP following adoption. UDC to engage with ECC at this time to review existing provisions and work with ECC on an on-going basis to achieve outcomes.
4	UDC to increase cycle storage on Council owned sites in Saffron Walden where practical to do so.	Transport Planning and Infrastructure	Cycle Network	UDC	2017	2018	Increase in no of storage facilities, target one stand per year, and users of facilities from baseline	Low, dependant on reduction in number of vehicles on road network	To link in with the Travel plan. Engage with property services & apply for funding where appropriate where need has been identified. Each stand costed at £1500. Feasibility study by March 2019.

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5	To assist ECC in working with local schools and businesses in the review and upgrading of existing travel plans and to assist individual schools or businesses to develop and promote plans	Promoting Travel Alternatives	School and workplace travel planning	ECC & UDC	Engage with ECC and other stakeholders by end 2017	2018-2022	Number of new or upgraded TPs, target 2 per year. Increase in walking or cycling to school or workplace from baseline	Low, dependant on reduction in number of vehicles on road network	Reliance on joint working with ECC and other stakeholders to develop new travel plans. Cost :within existing resources
6	To support the provision of superfast broadband service to all parts of the district.	Infrastructure	Facilitating home working	ECC & UDC	2017	To be confirmed	Number of businesses and homes enabled to access superfast broadband by 2019. Increase in no of people regularly working from home.	Low, dependant on reduction in number of vehicles on road network	UDC investment of £500k towards inclusion in Superfast Essex broadband procurement to be implemented by end of 2019.
7	To work with ECC Highways to develop a scheme of measures aimed at improving junction capacity within the AQMA identified to be necessary as part of the emerging Local Plan once adopted.	Traffic Management	Congestion management	ECC	2019	To be confirmed	Junction capacity improvements at the three key junctions identified in the action plan. Reduction in queue lengths from baseline.	Medium, dependant on reduced congestion	Reliant on ECC work programme following approval of the Local Plan and developer contributions once commenced. Timescale beyond control of UDC. Some funding available from sec 106 agreements.
8	To work with ECC to implement parking measures on main routes through the town and access to the centre by HGVs, which will demonstrably reduce congestion	Traffic Management	Congestion management	ECC	2017-18	To be confirmed	Improvements to junctions carried out, improved parking on main routes, restrictions to HGVs. Reduction in queue lengths	Medium, dependant on reduced congestion	Reliant on ECC and North Essex Parking Partnership (NEEP). No realistic target date can be applied
9	To support targeted enforcement of parking restrictions where identified to be an issue, on main routes through the town	Traffic Management	Parking enforcement on highway	UDC	2018	2019	No of parking penalty notices issued on main routes	Low, dependant on reduced congestion	To survey compliance with parking restrictions using data collected by North Essex Parking Partnership (NEEP) by October 2018. Cost: within existing resources.
10	To provide clear informative signage to Swan Meadow car park, new amenities, leisure centre, food stores, Audley End.	Transport Planning and Infrastructure	Other	UDC	2017	ongoing	No of new signs provided	Low, dependant on reduced congestion	To liaise with ECC highways to design and provide appropriate signage on approaches to facilities, by December 2018 and thereafter

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11	To continue to review UDC travel plan and review opportunities for a shared travel plan with partner organisations using UDC facilities within the town	Promoting Travel Alternatives	Workplace Travel Plans	UDC	2017	2019	Revised UDC TP by end of 2017. Reduction in car travel to work as measured by survey & occupied car spaces, reduction in business mileage of 5% pa	Low, dependant on reduced congestion	Conduct a UDC workplace travel survey – July 2018 Measure outcome of travel plan (July 2019) Cost : within existing resources
12	To pursue options to install renewable energy technologies at suitable UDC sites within Saffron Walden, to review UDC fleet procurement and implement changes were identified as practicable, and likely emission reductions justify the capital expenditure	Promoting Low Emission Plant and transport	Low emission fuels for stationary sources, company vehicle procurement , prioritising uptake of low emission fuels	UDC	2018	2018-2022	Size of kW renewable energy installations within SW, review of fuel usage and type, no of UDC fleet LEVs	Medium	To develop working group by December 2018 to consider options for replacement energy provision, fleet procurement and conversion of existing fleet to low emission fuel, and cost benefit. Cost : capital investment and staff time
13	To encourage ECC to procure bus services with integrated timetables, high quality facilities, and a frequent and reliable service linked to the rail service at Audley End. Information on Public Transport services to be readily available in UDC buildings and via the website.	Transport Planning and Infrastructure	Public transport service improvements	ECC & UDC	2018	2018-19	No of new or improved services available, information available in UDC buildings. Increase in bus usage of 5%	Low	Engage with ECC procurement services by Sept 2018. Engage with in house communications team to promote and provide effective information on public transport services at UDC access points and website, linked to ECC information, by March 2018
14	To identify opportunities to raise public awareness of air quality issues through education initiatives and publicity campaigns	Public Information	Via leaflets Via the internet	UDC	2017-2022	2017-2022	No of campaigns, target one per annum.	Low, dependant on behavioural changes	To deliver a targeted campaign to schools & the general public to coincide with National Clean Air Days and at other opportunities as they arise. To liaise with health improvement team on linked initiatives. Cost : within existing resources
15	To provide advice and raise awareness of car sharing and associated database software available to employers	Alternatives to private vehicle use	Car and lift sharing schemes	UDC	2018	2019	No of new car sharing schemes set up, target one per annum. Reduction of 1-5% of private car commuter journeys	Low dependant on reduced congestion	Scheme uptake outside control of UDC. However, district wide promotion of schemes to take place on an annual basis as part of other awareness linked to measure 14. Cost :within existing resources

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16	To consider the provision of preferential charging for UDC controlled parking spaces for vehicles meeting low emission standards. To utilise legislative provisions to provide LEV infrastructure	Traffic Management	Emission based parking or permit schemes	UDC	2019	2020	Review of charging policy	Low, dependant on raised uptake of LEVs	To carry out a feasibility study of permit style scheme by March 2020 incorporating capital costs and take up of LEV's
17	To engage with the Uttlesford licensed operators forum with the aim of introducing emission controls for licensed taxis	Promoting low emission transport	Taxi licence conditions	UDC	2018	2019	Review of licensing policy	Low	To be linked to annual review of taxi licensing policy. Feasibility determined by March 2018
18	To encourage ECC to set emission standards for new and existing buses under contract operating within the town	Vehicle fleet efficiency	Promoting low emission public transport	ECC	2017-18	To be confirmed	Review of contractual arrangements	Low	Discussions with ECC to achieve outcome by December 2018
19	To work with the operators of fleet vehicles within the town to facilitate the introduction of LEV's	Promoting low emission transport	Company Vehicle Procurement -Prioritising uptake of low emission vehicles	UDC	2018	To be confirmed	No of LEV fleet vehicles on town road network.	Potentially medium, dependant on uptake of vehicles.	Reliance on engagement with fleet operators to achieve outcome. Discussions with largest fleet operators by December 2018
20	Provide electric charging points on UDC owned parking spaces in the town where practical and economically feasible to do so, and encourage the provision of points at suitable privately owned sites	Promoting low emission transport	Procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV recharging	UDC	2018	2019-2022	No of points installed per annum, target 4	Potentially medium, dependant on uptake of vehicles.	Existing provision two points on UDC sites. Feasibility study of increasing provision to be carried out in conjunction with point operators, by March 2019. Each point costs approximately £3000 plus electrical connection. Funding from central government has been made available.
21	To use development controls to set emission controls from heavy goods fleet operating at or from a development, to work with ECC on introducing delivery time restrictions to High Street north SW	Freight and delivery management	Off peak hours deliveries	ECC	2017	To be confirmed	Restrictions in place, reductions in HGV parking	Low	Planning controls ongoing, reliance on ECC to deliver outcome, discussions to be held by December 2018
22	To review the need for additional diffusion tube monitoring and install	Public	Other	UDC	2017	2017-2022	Provision of localised data for incorporation	Low, provides	Funding procured for new automatic monitoring station at Thaxted Rd/Radwinter Rd

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	a further automatic station to inform basis for decision making.	Information					into air quality modelling	evidence base for actions	junction, to be commissioned 2017. Review of diffusion tube locations to be carried out in Autumn 2017 to start any revisions in January 2018.
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- 3.2** Some actions will be long term and ongoing, others can be carried out more quickly, and milestones set for each will enable progress to be monitored and assessed. Some will be more challenging than others to implement either due to resource issues or support from outside organisations. In most cases further work is needed to determine the feasibility and likely impact of the proposed measures. Whilst UDC is the authority ultimately responsible for managing air quality, it will not always be the organisation holding the resources or having legislative power to directly implement the action. Where measures are the responsibility of UDC, funding will be from existing resources, whilst exploring opportunities to access central government grant funding as and when it becomes available.
- 3.3** With regard to alterations to the local highway network, ECC are the key resource holders and decision makers, supported by UDC decisions through the planning process and secured developer contributions. Costs, timescales and air quality benefit will be specific to the local circumstances and final scheme design to be implemented.
- 3.4** It is unlikely that adopting a single particular action will result in the desired reductions in NO₂ levels in the AQMA and a range of options will be required to effect measurable air quality improvements.
-

Section 4 Consultation & key priorities

- 4.1** The consultation process with all interested parties and agencies ran for 12 weeks to ensure the proposed actions set out in the draft plan are supported by all who responded. A report on the outcome of the consultation is appended to this report: see **Appendix 4 “Report on public consultation carried out on Draft Air Quality Action Plan”**
- 4.2** The following stakeholders were consulted on the draft plan:
- Secretary of State (Defra)
 - Essex County Council Highways and Transportation Dept.
 - Environment Agency
 - Uttlesford Transport Forum
 - Essex Health & Well Being board
 - Public Health Essex
 - LSP (Uttlesford Futures)
 - Saffron Walden Town Team
 - Saffron Walden Town Council
 - Residents within or affected by the AQMA
 - Uttlesford Licensed Vehicle Operators Forum
 - Local schools
 - Neighbouring local authorities
 - Citizens Panel
 - Access Walden
- 4.3** The measures receiving the most support from respondents were those which provided opportunities to work collaboratively with Essex Highways and other transport providers, namely improving bus services (measure 13), improving bus emission standards (measure 18) and facilitating the use of low emission vehicles by fleet providers (measure 19).
- 4.4** A large number of responses were submitted as a standardised response provided by a local residents group. Whilst offering comment on a number of areas covered by the consultation, the response also referred to measures not included in the draft plan. Some suggestions for further measures referred to measures already identified by the draft plan, for example improving cycle facilities and public transport. Many referred to the need to restrict housing development on the east side of the town, which is a function of the considerations for the emerging Local Plan.

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- 4.5** Taking account of the responses and the indicative cost benefit analysis of each proposed measure, the five measures for priority will be:
- a) Working with ECC Highways to develop a scheme of measures aimed at improving junction capacity within the AQMA identified to be necessary as part of the emerging Local Plan once adopted (measure 7)
 - b) Working with ECC to facilitate the procurement of bus services with integrated timetables, high quality facilities, providing information on public transport through available media and securing improvements to emissions from the bus fleet (measures 13 and 18 combined).
 - c) Working with operators of fleet vehicles within the town, including UDC, to facilitate the introduction of low emission vehicles (measures 12 and 19).
 - d) To assist ECC in working with local schools and businesses in the review and upgrading of existing travel plans or to assist individual schools or businesses develop plans and to promote those plans (measure 5).
 - e) Working with ECC to facilitate the provision of well-designed new cycle and pedestrian routes and review existing footpaths for safety (measure 3).
- 4.6** The relative priority of measures may alter as part of the review process during the life of the plan
-

Section 5 Progress monitoring and review

- 5.1** A programme of monitoring to assess the effectiveness of the measures will be undertaken once the action plan has been adopted. The programme will include the outcome indicators set out in **Table 2**. There is also scope to extend the assessment by examining health improvement outcomes through engagement with the health authorities to measure reductions in diagnosis and medication for respiratory conditions.
- 5.2** External factors will affect the delivery and resulting impact of the measures proposed, and new technology to tackle air quality will become available. Provision is made in the plan to continue working with ECC as highway authority on traffic management measures.
- 5.3** Specific highway based proposals can be subject to dispersion modelling and the outcomes assessed in terms of the impact on air quality once the emerging Local Plan allocations are confirmed. Until this is known, it is beyond the scope of this plan.
- 5.4** It is recognised that all actions will change and evolve, and the plan will be updated and reviewed on an annual basis or as necessary.
- 5.5** Once the final plan Action Plan is adopted, opportunities to secure external funding to support the measures within the plan will be sought.
- 5.6** The expectation is that the air quality objective for nitrogen dioxide will be met within the five year life of the plan. Compliance with the objective for three consecutive years will support a revocation of the AQMA.

End of Part 1

Part 2 Supporting Information

Section 6 Importance of air quality

6.1 Public Health context

- 6.1.1** It is recognised that exposure to pollutants in the air we breathe can have a negative impact on human health and our environment, and impacts in Uttlesford will not be confined to the AQMA. More evidence on the extent of the impact has come to light from research which has estimated the life years lost as a result of the long term effects of exposure to fine particulate matter and nitrogen dioxide.
- 6.1.2** In 2010 a report published by COMEAP [11] estimated the mortality burden in the UK of exposure to man made very fine particulate matter (PM_{2.5}) alone in the atmosphere as:
- a) an effect equivalent to 29,000 equivalent deaths in the UK each year
 - b) the life expectancy of every person reduced by an average of 7-8 months from birth
- 6.1.3** The evidence associating exposure to NO₂ with health effects has strengthened substantially in recent years, with only a small fraction related to exposure at concentrations of emissions in excess of the legal limits. In 2015 a study by Kings College London [12] assessed the effects on mortality of ambient nitrogen dioxide levels in London independently of particulate matter, to be proportionately higher than for particulate matter alone. There is likely to be an overlap in the health burden associated with the combined effects of both pollutants, and has been estimated to be in the region of 40,000 per year.
- 6.1.4** Equivalent costs to the NHS of air pollution have been placed at up to £20 billion each year [13].
- 6.1.5** Local authorities are not required to carry out any additional local review and assessment (including monitoring) of PM_{2.5}, however guidance issued by Defra in 2016 [1] states that local authorities are expected to work towards reducing PM_{2.5} in their local area.
- 6.1.6** Public health authorities now have indicators for air quality and public health, set by Dept. of Health, based on the impact of PM_{2.5} on mortality. Public Health England has published mortality data for each local authority area [14]. In Uttlesford, the fraction of all cause adult deaths attributable to long term exposure to current levels of human made particulate air pollution was estimated at 5.4%, comparable to the east of England as a whole. Due to uncertainty in the modelling, the actual burden could range from one sixth to about double this figure.

- 6.17** The pollutant significant to the declaration of the Saffron Walden AQMA is NO₂, a large proportion of which is locally produced as a result of road traffic. Exposure to the pollutant is dependent on the time spent at locations close to the source of emissions, and residents close to the junctions where the highest levels have been observed are at the greatest risk. No incidents of the hourly mean objective being exceeded have been observed in recent years.
- 6.1.8** Levels of PM_{2.5} are also monitored in Saffron Walden, and the annual mean levels have been below objective levels. The UK has a target to reduce average concentrations at urban background locations by 2ug/m³ by 2020.
- 6.1.9** Following a review of studies in 2013, the World Health Organization (WHO) concluded there is no evidence of a safe exposure level to very fine particles or a threshold below which no adverse health effects occur. Negative health impacts have been found well below current EU & UK limits. NO₂ also was associated with adverse health effects at concentrations that were at or below the current EU limit values **[15]**
- 6.1.10** It is difficult for local action to impact significantly on PM_{2.5} pollution, as a smaller proportion than other pollutants is locally derived. Control is a regional rather than local concern due to the ability of very fine particles to be carried from source over long ranges in the atmosphere. 50-55% of average levels have been found to be due to UK emissions, the remainder originating largely from NW Europe carried on easterly winds **[16]**. As a consequence, proportionately higher levels are found in south east England than other areas of the UK. Defra estimate 35% of PM_{2.5} at urban background locations is locally derived **[17]**.
- 6.1.11** Whilst the action plan measures are primarily aimed at reducing the exposure of residents within the AQMA to NO₂, the initiatives within it will contribute to a reduction of particulates, and other air pollutants such as ozone, which will have wider benefits for public health. The initiatives will also help to reduce the exposure of drivers to air pollutants. Studies have shown that some drivers, depending on the vehicle, are exposed to twice the level of NO₂ and four times the level of particulates than pedestrians at a given location, placing professional road users at greater risk of health effects than those working outdoors but away from busy roads.
- 6.1.12** The specific health effects depend on the pollutant and vary between individuals and groups of the population. At sufficiently high concentrations, short-term exposure to NO₂ can cause irritation and inflammation of the airways, leading to breathing difficulties. Children, older people and those with heart conditions or respiratory conditions such as asthma and bronchitis are more likely to experience symptoms. NO₂ also contributes to the formation of secondary particles and ground level ozone, both of which are associated with health effects. Fine particles (PM₁₀) are small enough to enter the deepest part of the lungs, without being visible or smelt and the very finest (PM_{2.5}) can migrate from the lungs into the bloodstream. Fine particulate matter from diesel engines has been listed by 'WHO' as a Class 1 carcinogen and has

been found to contain carbon with a polycyclic aromatic hydrocarbon coating, which triggers nerve damage in the lungs. There is also evidence of an impact on the development of children's lungs, effects on the unborn child, a link to the incidence of dementia and type 2 Diabetes.

6.1.13 In addition to human health effects, air pollution has a detrimental effect on our biodiversity, crops and water quality. Above average content of nitrogen in soil has been demonstrated in areas of poor air quality, impacting on plant growth.

6.2 Sources of air pollutants

6.2.1 The term nitrogen oxide (NO_x) is used to describe a mixture of compounds including nitric oxide (NO) and nitrogen dioxide (NO₂). These oxidised nitrogen compounds are primarily formed from atmospheric and fuel based nitrogen as a result of combustion processes. In the absence of significant industrial sources, the prime source of NO_x in the town centre is traffic emissions, mostly in the form of NO, a colourless and tasteless gas not considered to be harmful to health. However, once released to the atmosphere, NO is rapidly oxidized, by ozone (O₃) and other gases in the atmosphere, to NO₂, which can be harmful to health. A proportion of NO₂ in the air is emitted directly from vehicle exhaust. The proportion depends on a number of factors including the composition of road traffic, the extent of oxidation in the atmosphere, engine changes and driving conditions.

6.2.2 Fine particle air pollutants consist of solid particles and liquid droplets, both, man-made and naturally occurring. Traffic related particles consist of compounds formed by exhaust gases, proportionately higher from diesel, reacting with other pollutants in the atmosphere, plus part burned fuel, compounds from mechanical wear of engine components, friction of tyres on the road, and from wear of brake discs and pads. Non traffic sources include construction and industrial processes, combustion processes such as power stations and heating installations, and agriculture.

Section 7 Emissions within the AQMA

7.1 Level of reduction needed

- 7.1.1 Monitoring sites do not always correspond to receptor or relevant locations due to practical difficulties. The receptor is taken as the façade of a sensitive property, normally residential where people spend long periods of time.
- 7.1.2 As can be seen from the monitoring results in **Appendix 3**, the highest result from monitoring in the town during 2016 was at UT005 Thaxted Rd/Radwinter Rd junction was (47.52µg/m³), which corresponded with an estimated concentration at the nearest relevant location from calculating reduction with distance of 37.92µg/m³. The highest estimated concentration at a relevant location was 42.55µg/m³ at London Rd, which is 6% above the objective. The only other sensitive location where a level above the objective is estimated to have occurred was at the Bridge St/Castle St junction (UT004 YHA), at 41.24µg/m³ which is 3% above the objective.
- 7.1.3 In 2015, two monitoring sites recorded levels above the objective, Thaxted Road and YHA. When reductions with distance at relevant locations were estimated, there were no exceedances. The estimates have been carried out in accordance with Defra technical guidance; however it is acknowledged that there is a degree of uncertainty associated with these estimates.
- 7.1.4 Defra guidance is provided to enable an estimation of the level of emission reductions in terms of a percentage to meet the NO₂ objective to be made, based on levels of NO_x due to local road traffic alone and excluding other sources.
- 7.1.5 In view of the variation in monitored levels over recent years, the required reduction in emissions has not been calculated, as to do so could be misleading. The aim of the measures in this plan is to ensure that levels of NO₂ at relevant locations will remain below the annual mean objective for the duration of the plan. In combination with the continued incorporation into the vehicle fleet of all types of new vehicles with lower emissions, it is anticipated that concentrations will reduce from 2017 onwards.

7.2 Source apportionment

- 7.2.1 Apportionment of the contribution from various sources of NO₂ can be indicative only, as concentrations include contributions from both directly emitted NO₂ and secondary NO₂ formed in the atmosphere by oxidation of NO. The relationship is not linear and is complicated by variations from one location to another and background levels at the location.
- 7.2.2 Primary emissions are influenced by the local fleet composition including fuel type and age of vehicle, and traffic conditions at each junction. However,

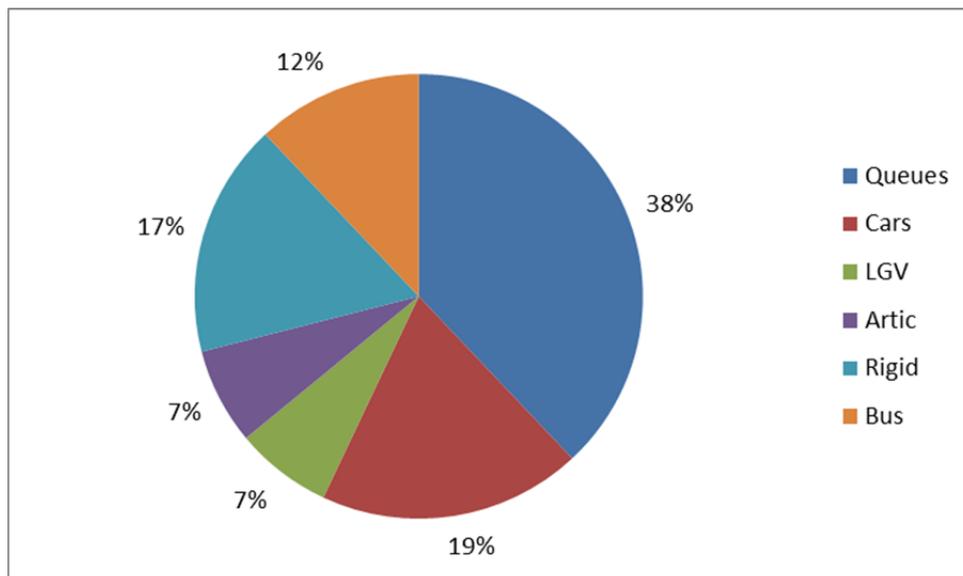
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following on from the UDC Action Plan of 2009, ECC commissioned Mouchel Ltd [18] to investigate air quality in baseline conditions and possible transport improvements required in Saffron Walden as part of future action planning.

7.2.3 The report included source apportionment work which had been undertaken at the High Street junction with George Street, and the outcome is provided in **Figure 5**. The results were considered to be illustrative of a wider area and determined that NO₂ emissions from HGVs contribute 24%, light goods vehicles 7%, buses 12% and cars 19%. 38% of emissions were found to be due to stationary or stop start vehicles at the junction. The figures indicate the disproportionate impact of buses and HGV's on emissions. From traffic surveys submitted with planning applications, buses and HGV's make up just 3% of the fleet on main routes through the town. In 2016 ECC found that light, medium and heavy goods vehicles made up 7% of traffic in Thaxted Road. An increase in these types of vehicles would have a more significant impact on emissions than an increase in cars on the roads.

7.2.4 The level of HGV's travelling through the town from the west will have reduced slightly following closure of commercial development off Ashdon Road, as set out in sec 2.9. This, combined with relatively high rates of replacing older HGV's with newer, cleaner vehicles, will reduce the importance of HGV's as a source, but may be compensated to an extent by the national trend for a rise in the number of light duty diesel powered delivery vehicles.

Figure 5: Source apportionment



Appendices

Appendix 1 Action Plan 2009

The following measures were approved by UDC to address exceedances of the NO₂ objective in the three small AQMAs which have subsequently been revoked:

- School travel plans
- Business travel plans
- Improving public transport
- Junction improvements at the three junctions on which the AQMAs were centred
- Signage to car parks
- Development of a Sustainable Distribution Strategy to address movements of HGVs

Table 3: 2009 Actions

2009 Measure	Progress 2011	Progress 2013
School travel plans	School travel team at ECC disbanded	
Business travel plans	UDC travel plan being developed	UDC travel plan implemented, additional cycle storage
Improving public transport and non-car travel	Improvements at Audley End Station to enhance bus service. Proposal for cycle path to station.	Cycle/pedestrian path under design by ECC
Junction improvements to ease congestion	Air quality model commissioned by ECC, sec 106 funding secured for congestion reducing schemes	Highway impact assessment of draft Local Plan proposals, outcome dependant on adoption of LP
Signage to car parks	No progress	New signage provided, further signage as new developments completed
Sustainable distribution strategy to address movements of HGVs	No progress	Vehicle activated sign on weight limit road entry to town from north

Appendix 2 Legislative Framework

1. The Environment Act (1995) requires UK government to produce a National Air Quality Strategy (AQS) [19] the most recent of which was published in 2007. This contains standards to comply with EU Framework Directive 96/62 which aim to protect human health, vegetation and ecosystems by avoiding, reducing or preventing harmful concentrations of air pollutants.
2. The standards are the subject of regulations [20] which set out Air Quality Objectives (AQOs), effectively policy targets of maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale, and a date by which they should be achieved and maintained thereafter. EU Directive 2008/50 introduced an exposure reduction obligation and target values for pm2.5, as a result of strong evidence of the health impacts.
3. Local Authorities (LAs) have a duty under the Environment Act 1995 to periodically review and assess air quality within their area of jurisdiction under a system of Local Air Quality Management (LAQM). This process involves considering present and likely future air quality against the objectives. If it is predicted that levels at sensitive locations where members of the public are regularly present for the relevant averaging period are likely to be exceeded, the LA is required to declare an AQMA and develop an action plan to tackle the problems.
4. The review and assessment requires the production of an annual report on the status of air quality in each district, including progress with reduction measures. The pollutant types and thresholds are identified in Table 6. It is the exceedances of the annual mean UK objective for NO₂ close to some junctions which has led to the Saffron Walden AQMA being declared.
5. The objectives only apply where members of the public are likely to be regularly present for the averaging time of the objective. The annual mean objectives apply to all locations where the public may be regularly exposed including the building facades of residential properties. The 1 hour mean objective applies to all locations where the public may be likely to stay for 1 hour or more such as a shopping street, and measurements have shown that it is unlikely to be exceeded unless the annual mean NO₂ concentration is greater than 60 µg/m³

Table 4: National Air Quality objectives for the purpose of Local Air Quality Management in England

Pollutant	Objective	Averaging period	Date to be achieved by and maintained thereafter
Benzene	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	01.01.2005
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	01.01.2005
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	01.01.2005
Nitrogen Dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	01.01.2010
	40 $\mu\text{g}/\text{m}^3$	Annual mean	01.01.2010
Particles (PM₁₀) (gravimetric)	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean	01.01.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	01.01.2005
Sulphur dioxide	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	1-hour mean	01.01.2005
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24-hour mean	01.01.2005

Other objectives

Pollutant	Objective	Measured as
Particles (PM_{2.5})	25 $\mu\text{g}/\text{m}^3$ to be achieved by 2020	Annual mean
Ozone	100 $\mu\text{g}/\text{m}^3$ not more than 10 annual exceedances	Daily 8hr mean

$\mu\text{g}/\text{m}^3$ = microgram per cubic metre

UK Government obtained an extension for meeting the EU legally binding air quality limit value for NO₂, the same value as the objective, to 2015, and has found meeting the limit challenging in most regions of the UK, as the largest source of this pollutant is road transport. The European Commission has formally launched infringement proceedings with a requirement to produce a new national action plan. Defra views the role of local authorities central to achieving the objectives. It should be noted that discretionary power in Part 2 of the Localism Act 2011 enables the Government to require responsible authorities to pay all or part of an infringement fine.

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Appendix 3 Saffron Walden Nitrogen Dioxide Diffusion Tube & automatic monitor data 2008-2016

Site ID	Location	Annual Mean Concentrations ($\mu\text{g m}^{-3}$) Tubes data adjusted for Bias								
		2008 (BA Factor 1.36)	2009 (BA Factor 0.92)	2010 (BA Factor 0.95)	2011 (BA Factor 0.80)	2012 (BA Factor 0.90)	2013 (BA Factor 0.97)	2014 (BA Factor 0.87)	2015 (BA Factor 0.81)	2016 (BA Factor 0.94)
UT001	PO High Street	42.9	40	47.22	36.6	38.67	38.9	33.1	36.35	40.04
UT003	Gibson Gardens (BG)	17.9	18	20.29	14.1	15.74	16	13.7	12.26	16.22
UT004	YHA Bridge St	45.2	44	48.61	38.4	47.51	42.7	37.3	42.17	46.90
UT005	Thaxted Road/East St	53.4	50	57.66	43.1	46.08	36.2	38.6	41.17	47.52
UT011	33 High Street	37.1	37	41.53	30.7	33.57	34.4	30.6	32.9	38.57
UT012	Town Hall Market Sq.	25.0	22	25.41	18.2	21.14	21	19	18.52	20.48
UT013,14/ 27 Co-loc	Fire Station Hill Street	-	25	29.10	21.2	22.68	25	22.1	21.44	25.84
UT028	London Road	47.7	43	50.00	40.7	45.87	41.3	35	37.96	44.76
UT029	Debden Road	-	-	32.75	23.0	30.02	27.3	25	21.58	26.5
UT030	Friends School	-	-	36.95	25.3	26.91	30.7	27.2	29.01	35.27
UT031	Peaslands Rd	-	-	-	-	-	23.8	22	22	26.22
UT032	Borough Lane	-					19.5	16.9	16.79	19.71
UT036	Church Street	-						20.8	21.63	27.09
UT037	Castle Street	-						24.1	24.19	29.08
Auto - matic	Fire station Hill Street	27.7	24.7	30	22.3	22.9	23.7	22.9	22.13	25.66
Auto-matic	London Rd	-	-	-	-	-	-	-	-	23.95

NB. Exceedances are shown in bold

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References

Reference	
1	Local Air Quality Management Policy Guidance, Defra 2016
2	Emission standards defined in a series of EU directives
3	Census 2011
4	Local Air Quality Management Technical Guidance, Defra 2009/2016
5	National Planning Policy Framework (2012), DCLG.
6	National Planning Practice Guidance DCLG
7	Essex Transport Strategy, Essex County Council, June 2011
8	Essex Highways, Uttlesford Cycle Strategy, October 2014
9	Assessment of Uttlesford District's Local Plan on Air Quality in Saffron Walden Nitrogen dioxide dispersion modelling report, Jacobs Oct 2013
10	Uttlesford Draft Local Plan: Highway Impact Assessment of Draft Local Plan to 2031 Essex Highways March 2014
11	Committee on the Medical Effects of Air Pollution : The mortality effects on long term exposure to particulate air pollution in the United Kingdom 2010, Statement on average concentrations of nitrogen dioxide 2015
12	Understanding the health impacts for air pollution in London Kings College 2015
13	House of Commons Environmental Audit Committee Action on AQ 2014
14	Public Health Outcomes Framework data tool 2013
15	Estimating Local Mortality Burdens associated with particulate air pollution Public Health England, April 2014
16	Air Quality Expert Group: mitigation of UK pm 2.5 concentrations 2013
17	Public Health Impacts and Local Action, Defra 2013
18	AQ Dispersion Modelling of Saffron Walden AQMAs, Mouchel 2011
19	Air Quality Strategy for England, Scotland, Wales and NI, Defra 2007
20	Air Quality Standards Regulations (2002&2010) HMSO

Glossary of abbreviations

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'
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
AQO	Air Quality Objective: targets set by Government as minimum acceptable standards of air quality
ASR	Air quality Annual Status Report : required under LAQM
COMEAP	Committee on the Medical Effects of Air Pollution
Defra	Department for Environment, Food and Rural Affairs, responsible for air quality policy and supervision of LAQM
ECC	Essex County Council
EU	European Union
LAQM	Local Air Quality Management : system for local assessment
LEV	Low Emission Vehicle
NO₂	Nitrogen Dioxide
NO_x	Oxides of nitrogen which include NO ₂ emitted directly and formed by the oxidation of nitrogen oxide (NO) after emission.
PM₁₀	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
PG(16)	Local Air Quality Management Policy Guidance, Defra 2016
TG(09 &16)	LAQM Technical Guidance, Defra 2009 & 2016

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