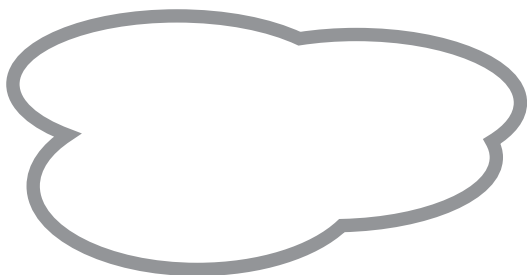


Maldon District Design Guide  
**Assessing Air Quality and  
Emissions Impacts from  
Development**



**Technical Document to  
Maldon District Design Guide  
December 2017**

An illustration of a town with various buildings, trees, and a bus. The scene is depicted in a stylized, hand-drawn manner with a color palette of greens, yellows, and greys. The town is shown from an elevated perspective, with buildings of different heights and styles, interspersed with trees. A bus is visible on a road in the lower left. The overall atmosphere is that of a typical urban or suburban environment.

## Air Quality Reading List

- Environment Act 1995 and associated Local Air Quality Management Regulations
- DEFRA's The Air Quality Strategy for England, Scotland, Wales and Northern Ireland Or equivalent document
- National Planning Policy Framework (NPPF)
- National Planning Practice Guidance (NPPG)
- Environmental Protection UK's (EPUK) and Institute of Air Quality Management (IAGM): Land-Use Planning & Development Control: Planning for Air Quality (2015)
- DEFRA's LAQM Technical Guidance TG (16)
- Institute of Air Quality Management: Guidance on the Assessment of Dust from Demolition and Construction
- The Control Of Dust And Emissions During Construction And Demolition Supplementary Planning Guidance: Mayor of London. Greater London Authority
- DEFRA Low Emissions Strategies using the planning system to reduce transport emissions Good Practice Guidance (2010)
- DEFRA Emissions Factor Toolkit:  
<http://laqm.defra.gov.uk/review-and-assessment/tools/emissions.html>

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## 1. INTRODUCTION

### 1.1. The purpose of this guidance

This guidance is aimed at planning agents, developers and their consultants. It is intended to help ensure consistency in the approach to air quality and vehicle emissions considerations when dealing with air quality for development projects in the Maldon District at the planning stage.

Air quality can be a material consideration within the planning process with the potential to affect and influence the planning decisions. This guidance intends to ensure that air quality considerations are dealt with at the earliest opportunity and that the necessary and appropriate information concerning a development's potential impacts on air quality, both onsite and further afield, is provided with planning applications at the validation stage.

This document clarifies when an assessment is likely to be required and provides guidance on the information required to undertake such an assessment. It is important that air quality considerations can be taken into account early in the development management process.

### 1.2. Aims of this guidance

An important focus of this guidance is on minimising the air quality impacts from developments for which air quality assessments have been requested by the planning authority. With this in mind this guidance aims to:

- Sustain and where practical improve local air quality
- Provide a consistent approach to considering the effects of new developments on local air quality within the Maldon District
- Enable early engagement by identifying which developments would require an air quality assessment to be provided and the points that need to be considered with the planning application, thereby minimising delays during the decision making process
- Ensure better regulation by formalising the approach to undertaking air quality assessments and applying appropriate mitigation consistently in planning decisions

### 1.3. Guidance process

- Section 1:** Sets the context for this document
- Section 2:** Explains the relationship between local air quality and the planning framework
- Section 3:** Outlines the current air quality situation in the Maldon District
- Section 4:** Explains when an assessment may be required
- Section 5:** Guides what is required of an air quality assessment and how the significance of an assessment is identified
- Section 6:** Discusses options for mitigation

### 1.4. Background to local air quality management

Local Air Quality Management (LAQM) in the UK was introduced with the Environment Act 1995. It was seen by Government as the best way to deal with localised ‘hot spots’ of poor air quality that were expected to remain after national and international measures, such as controls of emissions from new vehicles, brought about a general improvement.

LAQM has established air quality ‘standards’ and ‘objectives’ (AQOs) for the air pollutants that are of concern. The ‘standards’ have been set to protect human health and the environment based on scientific and medical evidence.

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (DEFRA 2007) estimates that life expectancy of the average person in the UK is reduced by up to eight months as a result of air quality with health costs exceeding £20 billion. It can be seen that improving air quality has considerable benefits to human health and well being, the environment and the economy.

Part IV of the Environment Act 1995 places a duty on local authorities to review and assess local air quality. Where a local authority considers that one or more of the objectives are likely to be exceeded and there is relevant exposure, it must declare an Air Quality Management Area (AQMA) and produce an action plan setting out measures to work towards an improvement of the air quality in the area. Local authorities are required to submit all relevant air quality reports to the Department for Environment, Food and Rural Affairs (DEFRA) for acceptance.

The UK objectives take account of the EU limit values and are either effectively identical, or more stringent. It is thus common practice to focus air quality assessments on the UK objectives. Formal Environmental Impact Assessments (EIAs) will, however, also need to take explicit account of the EU Limit Values. Furthermore, a formal EIA will introduce the need to assess the impact on PM2.5 concentrations, along with those pollutants that affect ecosystems and vegetation where appropriate.

## 2. LOCAL AIR QUALITY IN THE PLANNING FRAMEWORK

### 2.1. National Planning Policy Framework (NPPF)

The planning system is critical for managing local air quality, especially in rural areas where road traffic congestion and local built environment features are the common cause of areas where there are elevated air pollutants such as NO<sub>2</sub> and PM<sub>10</sub>s.

The NPPF aims to guide development through a principle led set of criteria. The core principles include contributing to conserving and enhancing the natural environment and reducing pollution and taking account of and supporting local strategies to improve health, social and cultural wellbeing for all.

Paragraph 109 of the NPPF states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.

Local air quality management is specifically referenced in paragraph 124 stating 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 the local air quality action plan.'*

It is recognised therefore that land use planning and development management is considered to be an essential process to improve or sustain air quality. This may include locating developments in such a way as to reduce emissions overall, and secondly reducing the direct impacts of those developments. These impacts are not limited to industrial processes that emit pollutants but also include residential developments whose future residents will add further traffic to the existing road network with the potential to create or add to areas of congestion and rising air pollution.

Even where a development is not located within an AQMA there is still a need to regard air quality as a material factor in determining planning applications in any location. This is particularly important where the proposed development could have adverse impacts on air quality within an AQMA, or where air quality in an area further afield from the development site is close to exceeding guideline objectives itself.

Developers are directed to ensure that they, or their consultants, have reference to any relevant documents published by the local authority that identify areas that may be affected as part of the air quality review and assessment process.

## 2.2. National Planning Practice Guidance (NPPG)

The NPPG provides further guidance on how planning can take account of the impact of new development on air quality.

It recognises that plan making should not only take account of AQMAs but also account for other areas where there may be limitations on new development due to air quality.

Air quality is also a consideration in strategic environmental assessment and sustainability appraisal can be used to shape an appropriate strategy.

Local planning policy should consider the review of air quality carried under the LAQM regime and local plans may consider:

- The potential cumulative impact of a number of smaller developments on air quality as well as the effect of more substantial developments
- The impact of point sources of air pollution (pollution that originates from one place); and
- 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

Developers and planners deciding whether air quality is a consideration for a particular development should consider whether the development would:

- **Significantly affect traffic in the immediate vicinity of the proposed development site or further afield.** This could be by generating or increasing traffic congestion; significantly changing traffic volumes, vehicle speed or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; adds to turnover in a large car park; or results in construction sites that would generate large heavy goods vehicle flows over a period of a year or more
- **Introduce new point sources of air pollution.** This could include furnaces which require prior notification to local authorities; or extraction systems (including chimneys) which require approval under pollution control legislation or biomass boilers or biomass-fuelled CHP plant; centralised boilers or CHP plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a smoke control area
- **Expose people to existing sources of air pollutants.** This could be

by building new homes, workplaces or other development in places with poor air quality

- Give rise to potentially unacceptable impact (such as dust) during construction for nearby sensitive locations
- **Affect biodiversity.** In particular, is it likely to result in deposition or concentration of pollutants that significantly affect a European-designated wildlife site, and is not directly connected with or necessary to the management of the site, or does it otherwise affect biodiversity, particularly designated wildlife sites

Further guidance on how these considerations may be quantified as detailed in chapter 4 of this document.

The NPPG offers further information on the information that may be required in an air quality assessment and mitigation where impacts are identified which applicants should refer to where necessary.

## 3. AIR QUALITY IN THE MALDON DISTRICT

### 3.1. Local air quality

The Maldon District is a largely rural district that currently does not have any declared AQMAs and as a rural district predominantly has good air quality.

However, like many rural districts review and assessment carried out under the LAQM regime has identified areas within towns and villages within the District where local circumstances are likely to give rise to an increase in some of the pollutants subject to AQOs within the legislation. Subsequent monitoring has quantified that risk and gives us the knowledge where there is a significant risk of the AQOs being exceeded and an AQMA being declared if there is a risk to human health at plausible receptor locations.

The review and assessment has identified areas where traffic congestion near to residential dwellings occurs as the main areas within the Maldon District where poor air quality is a risk with specific regards to NO<sub>2</sub> and PM<sub>10</sub>.

For detailed information on the review and assessment and to check the air quality levels from monitoring sites developers and consultants should in the first instance visit the Essex Air Quality website for up to date information on how pollutant levels measure against the AQOs in and around the District. This website also contains an archive of air quality review and assessment reports, published to date.

Maldon District Council has also documented an Air Quality Action Plan that developers and consultants should be aware of. This is included in APPENDIX 2.

In keeping with the planning principles and national air quality strategies, Maldon District Council intends to sustain or improve air quality through the implementation of the Local Plan and when making decisions on development management. To do this it will be necessary to require air quality assessments or mitigation for certain developments.

Where an air quality assessment is identified as being required, it is recommended that developers or their consultants contact Maldon District Council's Environment Services to check that they have obtained the latest reports and monitoring data and have correctly identified the areas requiring assessment due to the potential effects of the development.

### 3.2. Areas at risk

As stated previously the main cause elevated air pollutants in the district are caused by road traffic. The ongoing LAQM assessment has determined that PM<sub>10</sub> monitoring is not currently necessary although continues to need consideration. However NO<sub>2</sub> levels have been monitored using diffusion tubes which have identified areas where NO<sub>2</sub> is significantly elevated above background levels.

Background levels of annual mean NO<sub>2</sub> concentrations in 2013 were reported by DEFRA as ranging between 9 and 12 ug/m<sup>3</sup> in the Maldon District. The following monitoring sites in TABLE 1 have found annual mean levels of NO<sub>2</sub> above 30 ug/m<sup>3</sup> which are significantly above normal background levels and are within 75% of the AQO.

**TABLE 1 – Monitoring sites exceeding 30 ug/m<sup>3</sup>**

Site No.	Location
MD 1	Opposite Cherry Oak A414
MD 2	A414 Spital Road / A414 Bypass
MD 3	Heybridge Approach
MD 4	Heybridge Street / The Causeway
MD 5	Colchester Rd / Heybridge Street Junction
MD 6	High Street (Market Hill Junction)
MD 7	Wantz Rd / High St
MD11	Latchingdon Street
MD12	A414 Spital Road / A414 Bypass
MD13	Limebrook Way / A414 Bypass
MD15	The Causeway, Heybridge

The above sites are of particular concern where there is risk of extra vehicle movements or pollutant emitting process such as CHP scheme being developed. Consideration would also need to be given if new receptors are introduced.

The areas given are examples of current sites being identified and monitored. It should be noted that other areas may require assessment should traffic flows change and that LAQM is an ongoing process which may identify new areas requiring monitoring. It is important that the up-to-date air quality reports and monitoring results are used at the time an application is being made and not this document.

Developers will also need to consider areas in other neighbouring districts that may be affected by traffic generated from the development. In particular Danbury located within Chelmsford City Council's area and Hatfield Peverel within Braintree District Council's area may need consideration.

It is important to note that vehicle movements may be generated by residential, retail or industrial sites that are proposed further afield than the area of concern. It will be necessary to consult traffic models to identify where this may be.

A further point developers should consider is the geographical context and local transport infrastructure within the Maldon District which limit the routes that vehicles are likely to travel. For example, developments in Southminster, Burnham and Bradwell are located at the eastern end of a peninsula between two large rivers. There are only two main routes off of this peninsula.

## 4. WHEN IS AN AIR QUALITY ASSESSMENT REQUIRED?

### 4.1. The need for an assessment

With the national requirement to build more residential homes, significant development is going to take place. Very large individual development sites or the cumulative impact of major development sites (as defined in the Town and Country Planning Act) pose a risk of parts of Maldon District failing to meet the AQOs after site occupation, affecting the health and quality of life of current and future residents.

We encourage any applicant that holds pre-application meetings to consider the need for air quality assessment at this early stage.

It will therefore be necessary for certain developments to provide either a screening assessment or detailed assessment. These developments should consider the assessment criteria checklist in section 4.2 of this guidance. The criteria listed are the first stage of the assessment process and provide screening to determine whether a more detailed assessment is required.

### 4.2. Assessment Criteria Checklist

The assessment criteria used in the checklist below are derived from Environmental Protection UK's (EPUK) and Institute of Air Quality Management (IAGM): Land-Use Planning & Development Control: Planning for Air Quality (2015). Where any of the criteria set below are met by the proposed development an air quality assessment should be undertaken.

#### CHECKLIST 1: Screening Checklist

	Screening Checklist	YES	NO	Recommendations
1	Is the proposed development within an air quality management area (AQMA)			If any answer is YES Go To Checklist 2.  If all are NO, no further assessment required
2	Is the proposed development categorised as a major development *			
* Major developments are defined by the Town and Country Planning (Development Management Procedure) Order (England) 2010				

**CHECKLIST 2: Air quality and emissions mitigation assessment checklist**

	<b>Assessment Checklist</b>	YES	NO	
1	Is the proposed development within or likely to impact upon an air quality management area (AQMA) or an area near to exceeding AQ Limits (40µg)?			<p>If any answer is YES contact MDC Environment Services to confirm that an air quality (AQ) assessment is required and then undertake an emission’s assessment.</p> <p>Emissions mitigation assessments are discussed in section 6.</p> <p>If all answers are NO, Or Environment Services determine there is no need for an AQ assessment go to section 6 of this guidance.</p>
2	Does the development require an EIA?			
3	Is the proposed development type likely to become either on its own or as part of several cumulative developments a large scale major development?			
4	Is vehicle parking in the development >100 (outside AQMA) or >50 (within AQMA)?			
5	Does the proposal result in an increase in vehicle trip generation within the local area which will lead to an increase or decrease in traffic volumes (annual average daily traffic (AADT) or peak traffic flow) of 5% on roads with 10,000 AADT or more, or 5,000 or more if narrow and congested?			
6	Does the proposal result in change in average vehicle speed by more than 10kph (6.2mph) than is present on the existing local road network on roads with 10,000 AADT or more (5,000 if narrow and congested)?			
7	Does the proposal result in a likely increase in heavy duty vehicle movements >15 per day?			
8	Does the proposal result in increased congestion – this will vary according to location, but can generally be considered to be where there is a build-up of traffic preventing efficient movement?			
9	Will the development introduce new sensitive receptors into or in close proximity to an AQMA or area near to exceeding the AQ limits (40µg)?			
10	Is the site a Local Development Plan site?			
11	Will the development lead to new infrastructure such as rail, road, roundabout, signalling, bridges etc?			
12	Will the development create a street canyon or enclose roads and reduce dispersion of pollutants?			
13	Does the proposal include biomass energy or heating plant >50kW into an urban residential environment?			
14	Is the proposal in or close to sensitive designated sites such as Special Protection Areas, Special Areas of Conservation (SAC), Ramsar sites, designated ecological sites or Sites of Special Scientific interest (SSSI), County Wildlife Sites, Local Nature Reserves, Roadside Nature Reserves?			

A printable version of this table is included at APPENDIX 3.

## 5. AIR QUALITY ASSESSMENT CONTENT

### 5.1. Screening assessment

If the results of the screening assessment or Environment Services determine that no detailed assessment is necessary this should be provided with the application details.

Evidence should be provided as appropriate to show that the criteria in Checklist 2 (See Section 4.2) are not met.

In addition you should include an Emission's Mitigation Statement. Mitigation considerations which should be included in the statement are discussed in more detail in Section 6.

### 5.2. Detailed assessment

A detailed assessment should be carried out with regard to the guidance provided by Environmental Protection UK and the Institute of Air Quality Management: Land-Use Planning & Development Control (2015): Planning For Air Quality. Chapters 6 and 7 specifically deal with the assessment content, methodology and interpreting the significance of the results and LAQM updated 2017 (Classification of Impact Significance).

Further reference should be made to DEFRA's LAQM Technical Guidance TG (16) (also referenced in the EPUK guidance) and any other relevant guidance or standards.

NOTE: Applicants intending to undertake an air quality assessment should always seek the latest available information on local air quality from the local authority.

The assessment should show 'with' and 'without' comparisons and the primary goal will be to determine in the first instance whether the assessment shows an increase in the pollutants being assessed and secondly whether the increase will cause the AQOs to be exceeded and therefore cause an adverse impact on public health.

### 5.3. Determining the significance on air quality from development

- The AQ assessment provides modelled predicted concentrations for scenarios (for agreed year/period): without development (baseline, with development and with development including mitigation measures, including mitigation measures
- A comparison of the scenarios will be presented in the report. Compare scenarios 'without development (baseline)' with scenario 'with development including mitigation' (or without mitigation if none is considered necessary)

- The difference in the compared scenarios is used to determine the classification of the change in air quality concentration
- The scale of air quality impact due to changes of concentration or if the additional concentration causes local exposure to approach or breach the air quality objectives, determined the planning recommendations
- Planning recommendations are then required

The conclusions made on the significance of air quality impacts identified in a detailed assessment will be based on the professional judgement of officers reviewing the report, the factors that officers will consider are outlined in the EPUK/LAQM Guidance 2017 and determined whether significance is minor, moderate or major.

The following table sets guidance on the classification of impacts to determine their significance.

Classification of impact	Pollutant concentration change due to development	OR if development contributes to
Very high	Increase >10%	Breach of air quality objective (AQO)
High	Increase > 5-10%	Exposure within 5% of AQO
Med	Increase 1-5%	Exposure within 10% AQO
Low / Imperceptible	Increase <1%	Exposure within 25% of AQO

## 5.4. Planning recommendation

If the air quality assessment determines an impact or likely impact on air quality in the District due to the development or a cumulative impact of developments, the following outlines the likely recommendations that will be made to the planning authority by Environment Services.

- An overriding consideration will be to ensure that pollutant levels do not increase above the AQOs and therefore cause a new AQMA to be created
- Refusal of a planning application may still be recommended if High to Very High air quality impacts from a development remain, even after all reasonable means to mitigate the impact on air quality have been exhausted

Magnitude of air quality impact		Very high
Recommendation	Require mitigation to remove very high quality impacts. If Impact is still high there will be a strong presumption for recommending refusal  All sites will be expected to explore all reasonable measures of mitigation which may include infrastructure improvements relating to road traffic. Agreed measures must be implemented in an agreed time scale	
Action	Recommend refusal if mitigations not agreed	
Magnitude of air quality impact		High
Recommendation	Recommend refusal unless appropriate mitigation measures are implemented to the satisfaction of the local authority  Mitigation to include reducing exposure through various measures, emissions reduction and/or development design	
Action	Recommend refusal unless recommended mitigation is maximised	
Magnitude of air quality impact		Medium
Recommendation	Seek mitigation to reduce air quality impacts  Mitigation to include reducing exposure through various measures, emissions reduction and/or development design  Contribution Based on Emission mitigation calculation	
Action	Ensure On-site mitigation are maximised	
Magnitude of air quality impact		Low/imperceptible
Recommendation	Recommend the minimum mitigation for development scheme type, or  Contribution based on emission mitigation calculation	
Action	Recommend minimum mitigation	

## 6. AIR QUALITY AND EMISSIONS IMPACT MITIGATION

Where an impact is found to occur it does not automatically mean that a planning application will be refused. However, it is likely that mitigation will be necessary if the development is approved through the planning process. The type of mitigation will depend upon the significance of the impact and the details of each application.

All major developments require a brief mitigation statement and the developer will be required to follow The Control of Dust and Emissions from Construction and Demolition, Best Practice Guidance to minimise dust and other emissions to the atmosphere during the construction phase.

The mitigation statement should include:

- Development traffic input data for emissions calculation
- Emissions calculation and totals
- Mitigation proposed (should be at least to the equivalent value of emission's calculation)

### 6.1 Emissions calculator

The calculation uses the most current DEFRA Emissions Factor Toolkit to estimate the additional pollutant emissions from a proposed development. (Ref: DEFRA Emissions Factor Toolkit: <http://laqm.defra.gov.uk/review-and-assessment/tools/emissions.html>)

This will provide the relevant pollutant emissions outputs for the mitigation calculation, which is then multiplied to provide an exposure cost value.

This value is used for costing the required emissions mitigation for the development.

The emissions assessment and corresponding mitigation calculation follows this process:

1. An emissions assessment calculates additional trips generated by the development.
2. The emissions are calculated for pollutants of concern (NO<sub>x</sub> & PM<sub>10</sub>).
3. **Using DEFRA IGCB Air Quality Damage Costs for the specific pollutant emissions, the calculation then provides a resultant damage cost calculation. Details are provided on the government website at <https://www.gov.uk/air-quality-economic-analysis#damage-costs-approach>**
4. The emissions total is then multiplied x 5, to provide a five year exposure cost value\*.

5. In addition the health values are to be uplifted by 2% per year\*\*.
6. The resulting 5 year exposure cost value, is the value that is to be used to implement mitigation measures within the development. These mitigation measures should be agreed with the local planning authority to ensure that mitigation is in line with local policy and is appropriate for the type, size and location of the development.
7. If some or all mitigation measures cannot be accommodated within the development then mitigation may be provided through compensation via conditions or section 106 contributions. This will be determined by the local planning authority.

### Calculating emissions from alternative fuels and technologies

The emissions calculator (above) provides a basic emission calculation. However, if a development proposal is to include alternative fuels or technology i.e. LPG, EV etc, then there are 'advanced options' within the EFT to accommodate this. Always check in advance with the air quality officer to agree these options.

\*COMEAP (2010) and DEFRA Impact pathway guidance for valuing changes in air quality – section 44. (See reference section)

\*\*DEFRA Impact pathway guidance for valuing changes in air quality - section 52. (See reference section)

### EXAMPLE EMISSIONS CALCULATION

The following simple example demonstrates the calculation based on a development with 10 domestic properties.

EFT input:

10 Household (urban not London) (2012) (NOx and PM10)

X 27 (trip/traffic ratio for 10 houses)

X cars only (0% HGV)

X 50 kph (avg. speed)

X 10km (NTS UK avg.)

EFT Output = 32.55 kg/annum (NOx) & 3.795 kg/annum (PM)

= 0.0325 tonnes/annum (NOx) & and 0.003795 tonnes/annum (PM10)

X \*£955/tonne (NOx) + \*£48,517/tonne (PM10)

= £31.08 + £184.15

X 5 (years)

= £155.42 + £920.76

Total = £1,076

## 6.2 Requirements for mitigation measures

Scheme mitigation should be provided within the design of the development where possible. TABLE 1 lists the mitigation options to be considered.

TABLE 1. **Mitigation options**

- EV recharging infrastructure within the development (wall mounted or free standing in-garage or off-street points).
- Car club provision or support to local car club/eV car club.
- Designation of parking spaces for low emission vehicles.
- Differential parking charges depending on vehicle emissions
- All commercial vehicles should comply with either current or previous European Emission Standard.
- Fleet operations should provide a strategy for considering reduced emissions, low emission fuels and technologies.
- Use of ultra low emission service vehicles.
- Support local walking and cycling initiatives
- On-street EV recharging
- Contribution to low emission vehicle refuelling infrastructure
- Low emission bus service provision or waste collection services
- Bike/e-bike hire schemes
- Contribution to renewable fuel and energy generation projects
- Incentives for the take-up of low emission technologies and fuels

The above list is not exhaustive and further options may be suggested where authorities feel it is appropriate, depending on the scale of development and air quality issues within an area.

The mitigation options selected for a development should be relevant and appropriate to:

- Any local policies including Air Quality Action Plans, which may determine the mitigation priorities for a scheme that the local authority may wish to see be incorporated within a particular scheme
- Any local air quality concerns; to assist in the remediation of potential cumulative air pollution impacts of the development on the local community
- The type, size and activity of the development

DEFRA's 2010 Low Emissions Strategies Guidance provides further guidance on potential mitigation measures.

The following list taken from the EPUK guidance provides some examples of measures that may be appropriate.

## CONSTRUCTION PHASE MEASURES

### 1. General commentary (where applicable)

- Agree a Code for Construction Practice with LPA prior to work commencing

### 2. Control of dust

- Building enclosures; use of screens; sheeted vehicles;
- Early implementation of paved haul routes
- Hard-standing cleaning
- Water spraying; wheel washing
- Consideration of location of stockpiles, stone-cutting activity; designated storage areas;
- Diversion routes
- Prohibit fires
- Just-in-time deliveries

### 3. Monitoring strategies

- Site boundary monitoring pre-development and post-development (at closest receptor)
- Liaison meetings with local residents
- Considerate contractor schemes (and their equivalent)

### 4. Construction plant emissions

- Age and type of plant
- Plant maintenance
- Alternative fuel use

## OPERATIONAL PHASE MEASURES

### 1. Transport related measures

- Travel plans
- Car clubs
- Incentives for increased public transport use discounted fares, provision of information
- Parking standards set maximum number of spaces
- Preferential parking for low emission or car club vehicles or graduated parking
- Charges based on emissions
- Provision of alternative fuels electric charging points or biogas facilities
- Public transport fleet improvements e.g. provision of low emission buses
- Service vehicles agreement to achieve specified emissions standards
- Contribution to specific traffic management or road schemes

### 2. Non-transport related measures

- Monitoring programme (development specific). Needs careful consideration as to the usefulness of the specific monitoring programme, relevant assessment levels and the action that could be taken if the assessment levels are breached
- Ventilation. Mechanical ventilation becoming increasingly common. Care required on location of inlet. Need to ensure long-term maintenance
- Contribution to action plan and monitoring programmes. Can be a financial contribution to help the Authority develop and implement its action plan. May be a contribution to the Authority's air quality monitoring programme
- Buffer zone. Can be useful, but not simple to define extent. Not always practicable. May need to set against other benefits of development

### 3. Building design

- Flatted blocks and balconies may be best avoided in locations of poor air quality, especially at ground and first floors
- Habitable rooms. Consider placing away from façade fronting pollution source, e.g. in flats put corridors, stairwells, bathrooms etc. in these locations
- Avoid canyon streets or creating canyons. Creating gaps in building facades can help ensure free flow of air in the street

## APPENDIX 1: AIR QUALITY OBJECTIVE LEVELS

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

## APPENDIX 2: MALDON DISTRICT COUNCIL AIR QUALITY ACTION PLAN

### Air Quality Action Plan 2016

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas.

Traffic emissions are the most significant source of air pollution in Maldon District and the A414 is the principal route within the District.

The Council recognises the importance of working with partnering authorities such as Essex County Council to make improvements to local transport infrastructure and also to fulfil its own regulatory responsibility towards industrial processes.

Air pollution is considered to be generally low in Maldon District and monitoring of local air quality has measured no exceedances of air quality objective at relevant exposure. The trend of results across all monitored sites indicates that air quality is improving.

Air quality in Maldon District meets the national air quality objectives. As such, Maldon District Council does not have an Air Quality Strategy or Action Plan. However, future development is expected within the District and the emerging Local Development Plan will seek to use policy to support growth within the environmental limits.

To fulfil the requirements of Local Air Quality Management (LQMA) as set out in Part IV of the Environment Act 1995, an Annual Status Report (ASR) is prepared and published on the Council's website. The Council does not have any air quality management areas, so no formal action plan is required

This document aims to provide an overview of the actions Maldon District Council intends to take to ensure the District continues to benefit from good air quality. Set out below are eight broad actions indicating what is planned to try to achieve this:

#### **ACTION 1**

Securing measures to reduce vehicle journeys and therefore reduce vehicle exhaust emissions via the major planning applications. This includes new and enhanced public transport links, cycle networks and the installation of EV charging points (to provide an infrastructure to encourage future ULEV use and therefore reduce exhaust emission).

In particular the planned garden suburb developments are funding a new bus service to Chelmsford and creating a cycle path network linking up to the existing settlement to provide viable alternative to road vehicles. Relief roads have also been secured to reduce congestion in parts of Maldon District.

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## **ACTION 2**

Continue to monitor nitrogen dioxide at numerous locations around the District. This is done on a monthly basis using diffusion tubes. The results are not as accurate as the real-time methods; however, three diffusion tubes are co-located at Morrison's roundabout on the A414 which allows us to bias correct the tubes. Annual results of the tube concentrations are published monthly on [www.essexair.org.uk](http://www.essexair.org.uk). A review of the existing tube locations was undertaken in December 2016.

## **ACTION 3**

Use the procurement system to ensure that air quality is a consideration within contracts for Maldon District Council.

## **ACTION 4**

Work with Public Health colleagues to inform the public about health impacts of air pollution and how they can change behaviour to reduce emissions and reduce exposure.

## **ACTION 5**

Continue to actively work with operators of industrial processes that ensure that permit conditions are appropriate for the operation and they meet compliance.

## **ACTION 6**

Local air quality management guidance recommends that every six years a District review is completed to identify any new industrial processes that are operating without a permit are regularised to ensure emissions to air are controlled. This work is ongoing.

## **ACTION 7**

Encouragement of staff to car-share including the provision of a car sharing space in the staff car park.

## **ACTION 8**

Explore grant options and the Council's appetite for the installation of electric charging points in two strategic locations within the District. By providing these points it will provide and encourage accessibility to both residents of Maldon District and visitors.

## APPENDIX 3: ASSESSMENT CRITERIA CHECKLIST

### CHECKLIST 1: Screening Checklist

	Screening Checklist	YES	NO	Recommendations
1	Is the proposed development within an air quality management area (AQMA)			If any answer is YES Go To Checklist 2.  If all are NO, no further assessment required
2	Is the proposed development categorised as a major development *			
* Major developments are defined by the Town and Country Planning (Development Management Procedure) Order (England) 2010				

### CHECKLIST 2: Air quality and emissions mitigation assessment checklist

	Assessment Checklist	YES	NO	Recommendations
1	Is the proposed development within or likely to impact upon an air quality management area (AQMA) or an area near to exceeding AQ Limits?			If any answer is YES contact MDC Environment Services to confirm that an air quality (AQ) assessment is required and then undertake an emissions assessment.  Emissions mitigation assessments are discussed in section 6.  If all answers are NO, or Environment Services determine there is no need for an AQ assessment go to section 6 of this guidance.
2	Does the development require an EIA?			
3	Is the proposed development type likely to become either on its own or as part of several cumulative developments a large scale major development?			
4	Is vehicle parking in the development >100 (outside AQMA) or >50 (within AQMA)?			
5	Does the proposal result in an increase in vehicle trip generation within the local area which will lead to an increase or decrease in traffic volumes (annual average daily traffic (AADT) or peak traffic flow) of 5% on roads with 10,000 AADT or more, or 5,000 or more if narrow and congested?			
6	Does the proposal result in change in average vehicle speed by more than 10kph (6.2mph) than is present on the existing local road network on roads with 10,000 AADT or more (5,000 if narrow and congested)?			
7	Does the proposal result in a likely increase in heavy duty vehicle movements >15 per day?			



8	Does the proposal result in increased congestion – this will vary according to location, but can generally be considered to be where there is a build-up of traffic preventing efficient movement?			
9	Will the development introduce new sensitive receptors into or in close proximity to an AQMA or area near to exceeding the AQ limits?			
10	Is the site a Local Development Plan site?			
11	Will the development lead to new infrastructure such as rail, road, roundabout, signalling, bridges etc			
12	Will the development create a street canyon or enclose roads and reduce dispersion of pollutants?			
13	Does the proposal include biomass energy or heating plant >50kW into an urban residential environment?			
14	Is the proposal in or close to sensitive designated sites such as Special Protection Areas, Special Areas of Conservation (SAC), Ramsar sites, designated ecological sites or Sites of Special Scientific interest (SSSI), County Wildlife Sites, Local Nature Reserves, Roadside Nature Reserves?			

# APPENDIX 4 - STEPS FOR LOCAL AUTHORITY TO ASSESS THE SIGNIFICANCE OF AIR QUALITY IMPACTS OF A DEVELOPMENT PROPOSAL

