



Rugby Borough Council

Air Quality
Supplementary Planning Document

July 2021

Context

It is Rugby Borough Council's intention to prepare and keep up to date a series of Supplementary Planning Guidance (SPG) Notes which will provide detailed guidance on a range of development issues and topics.

The purposes of these SPG Notes are:

- To assist the public and their agents in preparing planning proposals and to guide them in discussions with officers prior to the submission of planning applications, specifically in relation to the interpretation of policy HS5 of the Local Plan which relates to air quality, noise and vibration;
- To guide officers in handling, and officers and councillors in deciding, planning applications, and
- To assist Inspectors in the determination of appeals.

The overall aim is to improve the quality of new development and facilitate a consistent and transparent approach to decision making.

This guidance has been developed in co-operation between Coventry City Council, Coventry & Warwickshire Public Health, Nuneaton and Bedworth Borough Council, Rugby, Stratford District Council and Warwick District Council.

This guidance supersedes the air quality guidance previously adopted within section 7 of the 'Planning Obligations – Supplementary Planning Document – March 2012' (other sections of this document that do not relate to air quality remain extant). It was adopted at a meeting of Full Council on the 20th July 2021.

Contents

Context.....	2
1 Glossary.....	4
2 Introduction.....	6
3 National Planning Policy Context.....	7
4 Local Air Quality.....	11
5 Local Plan.....	13
6 Development Classification, Assessment and Mitigation.....	15
7 Specific Issues.....	24
Engagement and pre application advice.....	28
Appendix 1 Assessment Protocol.....	29
Appendix 2- Damage Costs: calculations and example.....	32
Appendix 3- Local Plan Policy.....	34
Appendix 4- Electric Vehicles.....	36

1 Glossary

Air Quality Assessment (AQA)	An assessment of the impact of a development on the levels of certain pollutants in the local area and the impact of pollution levels on future occupants.
Air Quality Management Areas (AQMAs)	Areas where the air quality objectives are likely to be exceeded. Declared by way of an order issued under the Section 83(1) of the Environment Act 1995.
Air Quality Neutral	Emissions from the development proposal being no worse, if not better, than those associated with the previous use.
Air Quality Objectives	Air quality targets to be achieved locally as set out in the Air Quality Regulations 2000 and subsequent Regulations. Objectives are expressed as pollution concentrations over certain exposure periods, which should be achieved by a specific target date. Some objectives are based on long term exposure (e.g. annual averages), with some based on short term objectives. Objectives only apply where a member of the public may be exposed to pollution over the relevant averaging time.
Clean Air Zones (CAZ)	Zone implemented by a local authority setting nationally set emission standards for vehicles. Non-charging zones can be implemented through policies covering bus and taxi emissions. Charging zones require non-compliant lorries and possibly vans to pay a charge to enter the zone.
Commercial uses	Commercial organisations and activities are concerned with making money or profits, rather than, for example, with scientific research or providing a public service.
Damage costs	Damage costs are a simple way to value changes in air pollution. They estimate the cost to society of a change in emissions of different pollutants
Environmental Impact Assessment (EIA)	Assessment required for projects specified in Environmental Impact Assessment Directive. Governed by the Town & Country Planning (Environmental Impact Assessment) Regulations 2017.
EU Limit Value	Legally binding pollutant concentration limit on Governments of EU Countries.
Euro Standards	European Emission Standard (progressively tightened emission standards for vehicles. Euro Standards for cars and small vans are stated in Hindu-Arabic numbers and HDVs in Roman numerals).
Exceedance	Concentrations of a specified air pollutant greater than the appropriate Air Quality Objective.
HDV	Heavy duty vehicle (lorry or bus greater than 3.5 tonnes gross vehicle weight).
LAQM.TG(16)	Local Air Quality Management Technical Guidance (2016). This document provides national advice on how local authorities should assess air quality.
Low Emission Strategy (LES)	Overarching council strategy to integrate policies and practices to achieve year on year vehicle emission reductions, optimising opportunities for national funding assistance.
Low Emission Zone (LEZ)	Council area in which emission standards apply for either road transport vehicles or power generation/industrial emissions. The council can set emission standards that differ in standard and scope

	from the Government requirements for implementing Clean Air Zones for vehicles.
LDV	Light duty vehicle (car or small van less than 3.5 tonnes gross vehicle weight).
Limit Values/EU limit values	The maximum pollutant levels set out in the EU Daughter Directives on Air Quality. In some cases the limit values are the same as the national air quality objective, but may allow a longer period for achieving.
Mitigation	Mitigation measures will minimise, but not necessarily remove, the impact of or effect of poor air quality on a development.
National Air Quality Objectives	See Air Quality Objectives.
National Air Quality Plan	Government Plan to improve roadside concentrations of nitrogen dioxide (July 2017).
NO ₂	Nitrogen dioxide
NO _x	NO _x = nitrogen oxides, which includes nitric oxide and nitrogen dioxide. Most pollution sources emit nitrogen oxides primarily as nitric oxide. However, once in the atmosphere nitric oxide can be converted to nitrogen dioxide. Therefore, it is important to know the concentrations of both NO _x and NO ₂
Offsetting	Measures which 'compensate' for anticipated increases in pollution in the area but not necessarily at the exact locality. This might be for example by funding more general measures in the air quality action plan.
PM	Particulate matter.
PM _{2.5}	Particulate matter with a diameter of 2.5 microns or less.
PM ₁₀	Particulate matter with a diameter of 10 microns or less.
Part A1 and A2 Processes	Industrial processes which are regulated under the Pollution Prevention and Control (PPC) Regulations and subsequent Integrated Pollution Prevention and Control (IPPC) for emissions to all media (i.e. atmosphere, land and water).
Part B Processes	Industrial processes which are regulated under the Local Air Pollution Control (LAPC) and Local Air Quality Pollution Prevention and Control (LAPPC) Regulations for emissions to air only.
Point sources	Chimneys.
Polluting development	A development which will directly or indirectly increase levels of relevant pollutants. This may include industrial processes but may also include developments which could cause increased traffic emissions. These types of development may increase pollution concentrations.
Sensitive development	A development which would allow users of the site to potentially be exposed to pollutants above the objective for the relevant period. For example, the introduction of a new residential development into an area where an air quality objective is already exceeded, would create the potential for the exposure of residents to poor air quality above the objective. Incidentally, this type of development may also generate significant additional traffic flow and also be a polluting development.

2 Introduction

- 2.1 Supplementary Planning Documents (SPD) are produced by Local Planning Authorities (LPA) to build upon and provide more detailed advice on the policies contained in a Local Plan. Specifically, they can add detail regarding any environmental, social, design and economic objectives which are relevant to the attainment of the development and use of land as indicated in a Local Plan. Supplementary planning documents are capable of being a material consideration in planning decisions but are not part of the development plan. They do not introduce new policy.
- 2.2 The requirements for producing SPDs are set out in Regulations 11 to 16 of the Town and Country Planning Regulations 2012 and the National Planning Policy Framework 2019. This SPD has been prepared in accordance with these regulations and guidance.
- 2.3 This Supplementary Planning Document aims to provide guidance based on relevant Local Plan policies and explain the consideration of air quality impacts associated with development proposals. A key focus relates to the mitigation of impacts of air quality, particularly countering the cumulative impacts of aggregated developments, and providing clarity to developers as to how the policy requirements can translate into acceptable mitigation.
- 2.4 The objectives of this SPD / Guidance are to:
 - Improve the consideration of air quality impacts in the planning process, in line with the NPPF, Planning Practice Guidance (PPG) and the Rugby Local Plan.
 - To help ensure consistency in the approach to dealing with air quality issues in planning applications across the Borough;
 - Explain how and when policy HS5 in particular is applied, and the mitigation requirements to achieve development that is compliant.
 - Identify the circumstances where detailed assessments will be required as part of planning applications when establishing baseline conditions when a development is not air quality neutral;
 - To provide guidance on measures that can be implemented to mitigate the potentially harmful impacts of new developments on air quality in line with policy HS5;
 - To promote the identification of suitable mitigation on development within the AQMA, either as part of planning applications or through pre-application discussions;
 - To provide guidance on the use of planning conditions in relation to policy HS5.

3 National Planning Policy Context

3.1 National planning policy is set by the National Planning Policy Framework (NPPF)¹. The NPPF places a general presumption in favour of sustainable development, stressing the importance of local development plans.

3.2 There are numerous regulatory regimes that affect air quality. This SPD is not intended to deal with wider air quality issues that affect Rugby that are outside of the planning system, such as the control of vehicle emissions of public transport, for example. This guidance is solely relating to the interpretation of policy HS5 of the Local Plan, and how this is interpreted in dealing with planning applications within the current UK planning system. This scope is within the context of the National Planning Policy Framework (February 2019) in paragraph 183 emphasises that:

'the focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.'

3.3 The NPPF goes on to state in paragraph 181 that:

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

3.4 The following paragraphs within the NPPF recognise the impact of traffic on air quality and health and the benefits of sustainable transport modes:

- Paragraph 102. *'Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:*
 - a) *the potential impacts of development on transport networks can be addressed;*

1

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;

c) opportunities to promote walking, cycling and public transport use are identified and pursued;

d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and

e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.'

- Paragraph 103. *'The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.'*
- Paragraph 110. *'applications for development should: a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use...
e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.'*
- Paragraph 111. *'All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.'*

3.5 National Planning Practice Guidance (NPPG)² provides advice to planning authorities on implementing the NPPF, this includes further guidance on how air quality can be considered as part of the planning process.

3.6 NPPG states that *'Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.'*

Where air quality is a relevant consideration the local planning authority may need to establish:

- the 'baseline' local air quality, including what would happen to air quality in the absence of the development;*
- whether the proposed development could significantly change air quality during the construction and operational phases (and the consequences of this for public health and biodiversity); and*
- whether occupiers or users of the development could experience poor living conditions or health due to poor air quality.'*

3.7 The NPPG also contains steps a local planning authority might take in considering air quality are set out in a flow diagram which is available to view here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/841149/Air_Quality_flowchart.pdf.

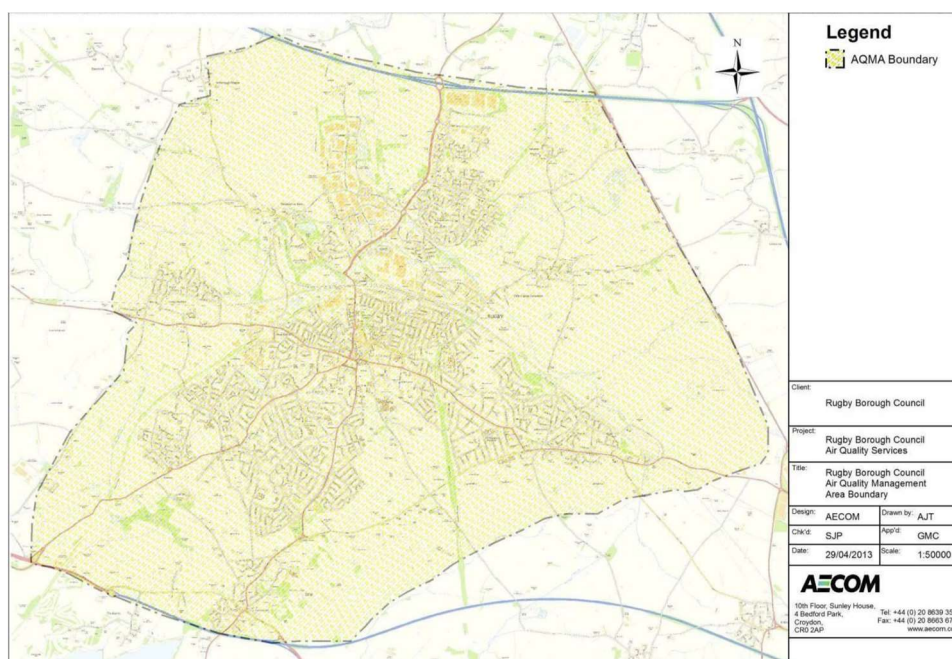
² <https://www.gov.uk/government/collections/planning-practice-guidance>

3.8 The NPPG also suggests the following could form part of air quality assessments:

- a description of baseline conditions and any air quality concerns affecting the area, and how these could change both with and without the proposed development;
- sensitive habitats (including designated sites of importance for biodiversity);
- the assessment methods to be adopted and any requirements for the verification of modelling air quality;
- the basis for assessing impacts and determining the significance of an impact;
- where relevant, the cumulative or in-combination effects arising from several developments;
- construction phase impacts;
- acceptable mitigation measures to reduce or remove adverse effects; and
- measures that could deliver improved air quality even when legally binding limits for concentrations of major air pollutants are not being breached.

4 Local Air Quality

- 4.1 Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) annually setting out measures it intends to put in place in pursuit of compliance with the objectives.
- 4.2 Rugby Borough Council declared an Air Quality Management Area (AQMA) in 2004 for exceedances of the annual mean NO₂ objective. This area covers the whole urban area of Rugby bounded by the southern boundary with Daventry District Council, the A5, M6, minor roads to the west of Long Lawford, A45 and M45 (https://uk-air.defra.gov.uk/aqma/details?aqma_ref=267#109).
- 4.3 Rugby's Air Quality Action Plan is focussed upon nitrogen dioxide. The AQMA also identifies that the urban area is also a Smoke Control Area preventing smoke from chimneys caused by the burning of unauthorised fuel or the use of an unauthorised appliance.



Map 1 – Rugby (Urban Area) Air Quality Management Area (AQMA)

- 4.4 Local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.
- 4.5 Between 2011-15, Rugby has been below the national average for the Public Health Framework Indicator, 'Fraction of mortality attributable to particulate air pollution'. However in 2016, the fraction value increased markedly from 4.6% to 5.5% and was higher than the national average (5.3%) for that time⁶. In 2017, the fraction value decreased to 5.0% and was below the national average of 5.1%.

- 4.6 This trend is not dissimilar to the neighbouring councils; Coventry, Warwick and Stratford-on-Avon, with all councils experiencing the peak in 2016. Since 2011, Rugby remains to have higher fraction values than Stratford-on-Avon but below that of Warwick and Coventry. With Coventry Council having fraction values higher than the national average.
- 4.7 Public Health Coventry (Coventry City Council) and Public Health Warwickshire (Warwickshire County Council) have established the joint Arden Health Protection Committee. Included in the members are Environmental Health managers in Warwickshire and Coventry comprising representatives from Public Health England, NHS, Public Health Coventry, Public Health Warwickshire and local authority Environmental Health officers.
- 4.8 Rugby Borough Council have worked alongside Coventry and Warwickshire Air Quality Alliance to implement the Air Quality objectives of the Health Protection Strategy 2017-2021. The success of this strategy and the measures it proposes will be demonstrated by reductions in ambient concentrations of NO₂ and PM_{2.5}, reductions in the use of private cars for short journeys and increased development and use of cycle ways.
- 4.9 Rugby Borough Council are currently identifying strategies for reducing levels of PM_{2.5}. The Local Plan and this SPD plays a key role in ensuring that future development of the area aims to reduce levels of particulate matter (PM₁₀) and is one of a number of Council strategies which aims to improve air quality.

Air Quality Assessment Local Plan evidence base.

- 4.10 Part of the development of the Local Plan key evidence considered the potential impacts of the proposed development on air quality. This involved transport modelling that assessed the planned growth as part of the Local Plan on a borough wide basis up until 2031, known as the Strategic Transport Assessment 2017, using a PARAMICS Rugby Wide Area modelling assessment. This is available here:
https://www.rugby.gov.uk/downloads/file/1342/strategic_transport_assessment_june_2017
- 4.11 A subsequent piece of evidence was produced which extracted the data and analysed the air quality effects of the growth using a Paramics Analysis of Instantaneous Road Emissions. This is available here:
https://www.rugby.gov.uk/downloads/file/1614/oth07_rugby_air_quality_assessment
- 4.12 The air quality assessment focussed upon the most congested areas of the Rugby Wide Area model which included;
- Dunchurch Crossroads
 - Rugby Gyrotory
 - Leicester Road Corridor
 - Hillmorton Road/Whitehall Road

- 4.13 The modelling reveals that there will be significant increases in emissions in future years as result of the volumes of trips associated with the growth predicted as part of the Local Plan, with congestion on the network increasing. The areas identified have resulted in the development of the Infrastructure Delivery Plan which identifies the parts of the network that require improvements that will benefit air quality. In response to the key issue of air quality the Local Plan has developed policies to ensure all future development mitigates any future impacts.

5 Local Plan

- 5.1 Rugby Borough Council adopted the Local Plan on 4th June 2019. In order to minimise the air quality impacts of SDC1 of the adopted plan relates to Sustainable design. A key element of this policy is to ensure that; *“proposals for new development will ensure that the living conditions of existing and future neighbouring occupiers are safeguarded.”* It is explained in the supporting text that developers should consider the impact of environmental factors such as high noise areas, areas of low air quality and contaminated land to ensure such sensitive sites achieve relevant statutory compliance/current best practice guidance and that a high level of sustainable design is achieved.
- 5.2 Policy HS5 of the adopted plan relates to Traffic Generation and Air Quality. The main aim of the policy is to promote sustainable development in order to minimise the impacts upon air quality. The focus of the policy is on both large sites above 1,000 square metres or 10 or more dwellings, and any development that generates new floorspace within the Air Quality management area. These two categories of development are likely to have the greatest impact upon air quality that would most likely require mitigation. The Council will support developments that are air quality neutral. If they are not air quality neutral it is necessary to mitigate their impacts.

Policy HS5: Traffic Generation and Air Quality, Noise and Vibration

Development proposals should promote a shift to the use of sustainable transport modes and low emission vehicles (including electric/hybrid cars) to minimise the impact on air quality, noise and vibration caused by traffic generation.

Proposals should be located where the use of public transport, walking and cycling can be optimised.

Proposals should take full account of the cumulative impact of all development including that proposed in this Local Plan on traffic generation, air quality, noise and vibration. Development proposals should complement the Air Quality Action Plan.

Development throughout the Borough of more than 1,000 sqm of floorspace or 10 or more dwellings or development within the Air Quality Management Area (see Appendix 8) that would generate any new floorspace must:

1. Achieve or exceed air quality neutral standards; or
2. Address the impacts of poor air quality due to traffic on building occupiers, and public realm or amenity space users by reducing exposure to and mitigating their effects, proportionate to the scale of the development. This can be achieved using design solutions that include:
 - Orientation and layout of buildings, taking into account building occupiers, public realm and amenity space users;
 - Appropriate abatement technologies; and
 - Urban greening appropriate for providing air quality benefits.
3. Where air quality neutral standards are not met, measures to offset any shortfall will be required, according to the following hierarchy:
 - On-site measures; then
 - Off – site measures; then
 - Financial contributions.
4. Address the adverse impacts of noise and vibration on existing and future occupiers and users of the public realm.

Air Quality Neutral

- 5.3 Developments that are air quality neutral will help to minimise air pollution within the AQMA. Policy HS5 aims to ensure that air quality neutral development is supported, whilst ensuring that development that has an impact upon air quality within the AQMA (or major developments that would affect the AQMA) are appropriately mitigated.
- 5.4 **The definition of air quality neutral is defined as emissions from the development proposal being no worse, if not better, than those associated with the previous use.**
- 5.5 In addition to HS5, Policy D1 of the adopted plan relates to transport and the need for transport assessments.

6 Development Classification, Assessment and Mitigation

6.1 The assessment of air quality for relevant planning applications should follow a three-stage process:

1. Determining the classification of the development proposal;
2. Key Assessment criteria and quantifying the impact on local air quality;
3. Determining the level of a mitigation required by the proposal to make the scheme acceptable and policy compliant with HS5 including an assessment of whether the development is considered to be air quality neutral.

Stage 1 - Determining the classification of the development proposal

6.2 Different levels of development will require different approaches to assessing the impact on air quality. Tables 2 and 3 list the types of mitigation required. These are divided up into Type 1 and Type 2 Mitigation measures.

6.3 Policy HS5 sets a threshold for developments differentiating the requirements in terms of air quality mitigation. These are defined as:

- Development throughout the Borough of 10 units or more, or if above 1000 square metres.
- All development within the Air Quality Management Area that would generate any new floorspace;

6.4 The classification of development proposals in terms of their likely impacts upon air quality is shown in table 1.

Table 1 – Air quality classification of developments

Some development falls outside of policy HS5, some falls within it and needs to comply with the policy. The following table classifies the difference:

Scheme Type	Does HS5 apply or not?	Type of Mitigation	Notes
Development below 10 units or 1000 square metres floorspace which is outside the AQMA (regardless of whether or not it generates new floorspace)	Policy HS5 does not apply	No mitigation required*	There are some types of development, such as Biomass boilers, that will require air quality considerations as part of SDC 1. These types of development are explained within section 7.
Development below 10 units or 1000 square metres which generates new floorspace and is inside the AQMA	Policy HS5 applies	Type 1 Mitigation	<p>Extensions to existing dwellings may not require mitigation if no new boilers are included as part of the scheme as a whole.</p> <p>Annexes to dwellings which require their own heating would require mitigation.</p> <p>Changes of use/new uses from an empty shell would require mitigation if new/upgraded heating is included as part of scheme.</p> <p>Extensions to existing uses would require mitigation if new/upgraded heating is required due to the increase in floorspace.</p>
Development below 10 units or 1000 square metres which does not generate new floorspace inside the AQMA	Policy HS5 does not apply	No mitigation required	
Development above 10 units or 1000 square metres (regardless of whether or not it is inside or outside the AQMA)	Policy HS5 applies	Type 1 and Type 2 mitigation required. If NRMM used as part of scheme, Table 4 applies	

*A standard informative encouraging the take up of ultra low emission boilers and other associated measures will be added to planning permissions.

Stage 2 - Air Quality Impact Assessment Key Assessment Criteria and quantifying the impact on air quality.

Additional floorspace within an AQMA below 10 units or 1,000 sq.metres

- 6.5 Smaller development proposals may not in themselves create a significant air quality problem but may add cumulatively to local air pollution and potentially introduce more people likely to be exposed to existing levels of poor air quality. Even if car free, smaller developments could affect the AQMA by introducing additional gas boilers as part of the development. If the proposal is within the AQMA and generates new floorspace, mitigation measures may be required in line with Type 1 mitigation listed in Table 2 in this document. If the proposal does not involve the creation of new floorspace, or does not introduce new gas boilers, mitigation may not be required as part of the policy.
- 6.6 Policy HS5 states that additional floorspace within the AQMA must achieve or exceed air quality neutral standards or provide appropriate mitigation measures. The definition of air quality neutral is defined as emissions from the development proposal being no worse, if not better, than those associated with the previous use.
- 6.7 Further information may also be sought by the Commercial Regulation Team and there may be the requirement to undertake an exposure assessment. The outcome of the exposure assessment, which is explained in below, will determine the level of mitigation required to make the development acceptable.

Additional floorspace outside of the AQMA below 10 units or 1000 square metres.

- 6.8 Some types of development may not be classified as major development and may not be located within the AQMA. These types of development may still have an impact on air quality, by virtue of their type and location in relation to areas of air quality exceedance or due to the very nature of their use. Examples include new residential floorspace in areas of high exceedance such as in proximity to the Gyratory or Dunchurch Crossroads, or Biomass boilers. These types of schemes will primarily be determined in accordance with policy SDC 1, rather than HS5, which requires that: “proposals for new development will ensure that the living conditions of existing and future occupiers are safeguarded, and that “proposals for housing and other potentially sensitive uses will not be permitted near to or adjacent [to] sites where there is a potential for conflict between uses....Such proposals must be accompanied by supporting information demonstrating that the existing use and proposed uses would be compatible and that the proposal has addressed any potential effects of the existing use on the amenity of the occupiers of the proposed development.”
- 6.9 This includes air quality and the impacts upon existing or future occupiers and such proposals may need a bespoke air quality assessment and mitigation which is likely to be site specific. Further information may be sought from the Commercial Regulation Team as to the exact form of the air quality assessment required.

Development of 10 dwellings or more or above 1000 square metres throughout the Borough

- 6.10 Schemes that meet the above threshold are unlikely to be air quality neutral. They will therefore require mitigation. It is recommended that early pre-application discussions are undertaken to consider the Council's requirements.
- 6.11 The scale and nature of a proposed development, together with its proximity to areas of air quality exceedances within the borough, particularly the Gyrotory and Dunchurch Crossroads may mean that a detailed air quality assessment will be required to determine impacts, especially if required as a result of non-planning air quality regulations. Not all major schemes will require an air quality assessment as a result of their location, for example, if they are remote from air quality exceedance locations or if they are car free. Air quality assessments only measure vehicle trip emissions as a result of developments, not on-site emissions from gas boilers. Policy HS5 requires major development to be either air quality neutral, or to mitigate their impacts. An Air Quality Assessment may be a useful tool to contribute to this process, but it would not be the sole determining factor in meeting the policy as consideration of local on-site non car emissions is also required to be taken into account when considering mitigation. Further information on the specification of an air quality assessment can be obtained from the Council's Commercial Regulation Team and in Appendix 1.
- 6.12 All major development is assumed not to be air quality neutral unless proven otherwise in comparison with the previous lawful use which may have been a higher polluting use (providing the use has not been abandoned). In demonstrating air quality neutrality, calculations such as the most recent DEFRA Emissions Factor Toolkit to estimate the additional pollutant emissions from a proposed development and the latest DEFRA IGCB Air Quality Damage Costs for the specific pollutant of interest, to calculate the resultant damage cost may be required. The damage costs associated with the existing/lawful development and the proposed development should be clear to assist development management officers in assessing the overall impacts on air quality arising from the development.
- 6.13 A comparison of emissions from the proposed development with those associated with the previous use of the site and how the proposed mitigation measures aim to ensure that the development achieves air quality neutral would be a further consideration. Evidence must be provided to demonstrate emissions from the development being no worse, if not better, than those associated with the previous use would be required.
- 6.14 Development management officers may use the DEFRA emissions factor toolkit in considering the appropriate scale and kind of mitigation that is required to make certain major schemes acceptable in terms of air quality. The overall benefit of the scheme will be taken into account in making the site acceptable³.
- 6.15 The DEFRA emissions factor toolkit calculation process includes:
- Identifying the additional trips generated by the proposal (from the Transport Assessment);

³ <https://www.gov.uk/guidance/air-quality-economic-analysis>

- The emissions calculated for the pollutants of concern (NO_x and PM₁₀) [from the Emissions Factor Toolkit];
- The air quality damage costs calculation for the specific pollutant emissions (from DEFRA IGCB);
- The result is totalled for a five-year period to enable mitigation implementation.

6.16 The calculation is summarised below. Further information can be obtained from the Commercial Regulations Team. **Should there be no net increase in trips arising from a development scheme then the damage costs are zero.** Further information on damage costs can be found in Appendix 2. Whilst there may be no damage costs associated with vehicle trips, local on-site air quality impacts will still require mitigation, most likely in line with Type 1 mitigation, which would principally include the need for ultra-low emission boilers.

Road Transport Emission Increase =
 $\Sigma[\text{Estimated trip increase for 5 years} \times \text{Emission rate per 10 km per vehicle type} \times \text{Damage Costs}]$

6.17 All Air Quality Assessments received will be assessed by the Council against the requirements of this Supplementary Planning Guidance and any relevant non-planning air quality regulation requirement. If the requirements are not met, the Council may request that the applicant carries out the assessment again.

6.18 Where air quality neutral is not achieved, measures to offset any shortfall will be required, proposals would need to mitigate their effects, proportionate to the scale of development.

6.19 If the impacts of the development cannot be successfully mitigated, where air quality neutral are not met, measures to offset any shortfall will be required according to:

- on site measures
- off site measures
- financial contributions.

Stage 3 - Mitigation

6.20 Where mitigation is not integrated into a proposal, we will require this through planning conditions. The NPPF (paragraph 152) states that “where adequate mitigation measures are not possible, compensatory measures may be appropriate”. On-site measures will be mitigated through planning conditions. Where is not possible then Rugby Borough Council will seek off site measures for the identified air quality impacts through a section 106 agreement or similar agreement.

6.21 Default mitigation measures are presented for each type of proposal that demonstrate a minimum requirement. Tables 2-4 below set out various suggested forms of mitigation. This is not an exhaustive list but a suggested suite of measures and will be adapted for particular locations and needs identified by the Council. We welcome the opportunity to work with developers to devise innovative measures that will lead to improving local air quality. Due to elevated concentrations of particulate

matter in the Borough, when development involves the use of non-road mobile machinery, developments will be required to implement suitable abatement controls for the use of non-road mobile machinery (NRMM); the mitigation for this type of development is listed in Table 4.

Table 2 - Type 1 forms of Mitigation

Plug-in Vehicle Re-Charging:

Residential:

1 charging point per unit (dwelling with dedicated parking) or 1 charging point per 10 spaces (unallocated parking) and ensure appropriate cabling is provided to enable increase in future provision.

Commercial, Industrial and Retail*

1 charging point per 10 spaces to include 1 charging point for every 10 disabled car parking spaces.

Passive charging points are to be provided for dwellings. These ensure cabling is provided for owners to install the correct socket for their vehicle.

*Commercial includes Leisure developments in accordance with the definition in this SPD

Additional information can be found within the Warwickshire County Council Electric Charging Vehicle Strategy <https://apps.warwickshire.gov.uk/api/documents/WCCC-930-349>

Code of Construction Practice

Construction Environmental Management Plan (CEMP) to be incorporated into developments and agreed with Council Officers. This shall include NRMM controls (see table 4).

Green Infrastructure

Certain types of plants, shrubs and trees can be effective in removing particulates from the atmosphere and have positive impacts for air quality, particularly if used cumulatively. Green infrastructure could be used where it can be shown that such infrastructure will reduce exposure from air pollution. (See paragraphs 7.13-7.15)

Heating⁴

All gas-fired boilers to meet a minimum standard of <40 mgNO_x/kWh

All gas-fired CHP plant to meet minimum emission standards of:

Spark ignition engine 250 mgNO_x/Nm³

Compression ignition engine 400 mgNO_x/Nm³

Biomass boiler 275 mgNO_x/Nm³ & 25 mgPM/Nm³

⁴ Heating standards reflect 2019 emissions, these may be superseded by national legislation.

Table 3 - Type 2 forms of Mitigation

<ul style="list-style-type: none">• Monitored Travel Plan;• Measures to support public transport infrastructure and promote use;• Measures to support cycling and walking infrastructure;• Measures to support an Electric Vehicle Plan;• Non-road mobile machinery (NRMM) controls (see table 4). <p>Commercial development specific:</p> <ul style="list-style-type: none">• Use reasonable endeavors to use/require vehicle use complying with the latest European Emission Standard;• Provide a fleet emission reduction strategy/Low Emission Strategy, including low emission fuels and technologies, including ultra-low emission service vehicles.
<p>Off-set mitigation to support:</p> <ul style="list-style-type: none">• Implementation and operation of Clean Air Zones (CAZ), Low Emission Zones (LEZ) or Low Emission Strategies (LES);• Growth in low and ultra-low emission public transport, including buses;• Electric Vehicle Plans;• Car clubs (including electric) and car sharing schemes;• Cycling Hubs and corridors;• Plugged-in development and demonstration schemes; <p>Infrastructure for low emission, alternative fuels e.g. refuse collection and community transport services.</p>

Table 4 – Non-Road Mobile Machinery (NRMM) Controls

<p>Further information on the suitability of mitigation for developments can be obtained from the Commercial Regulation Team and through pre-application discussions.</p>
<p>NRMM of net power between 37kW and 560kW will be required to meet the standards based upon the engine emissions standards in EU Directive 97/68/EC and its subsequent amendments. This will apply to both variable and constant speed engines for both NOx and PM.</p> <p>From 1 September 2020 the following changes will apply:</p> <ul style="list-style-type: none">• (a) NRMM used on any construction or demolition site within the Rugby urban area will be required to meet Stage IIIB of the Directive as a minimum.• (b) NRMM used on any development will be required to meet Stage IV of the Directive as a minimum. <p>The requirements may be met using the following techniques;</p> <p>(a) Reorganisation of NRMM fleet (b) Replacing equipment (with new or second-hand equipment which meets the policy) (c) Retrofit abatement technologies (d) Re-engining.</p> <p>All eligible NRMM should meet the standards above unless it can be demonstrated that the machinery is not available or that a comprehensive retrofit to meet both PM and NOx emission standards is not feasible.</p>

Assessing the acceptability of a scheme

- 6.22 The acceptability of the scheme will be dependent upon how it relates to policy HS5 which requires development of 1,000 sqm of floorspace or 10 or more dwellings or development within the Air Quality Management Area (see Map 1) that would generate any new floorspace to demonstrate air quality impacts.
- 6.23 Any air quality assessment must include an assessment of policy HS5 and an associated assessment relating to its air quality and how air quality neutrality will be achieved and the appropriate mitigation measures.
- 6.24 The responsibility for providing and satisfying these criteria rests with the developer and would normally be undertaken by a suitably qualified person carrying the appropriate professional indemnity. The Council's Commercial Regulation Team can provide advice to assist them.
- 6.25 While applicants may present evidence as to the significance of scheme impacts or the impact of air quality on a scheme, Rugby Borough Council reserves the right to determine the acceptability of an application based on local air quality evidence and the cumulative impacts of schemes.
- 6.26 Failure to meet the requirements in this guidance may result in the application being delayed as Rugby Borough Council may request extra information, amendments or conditions to the application. If the issues remain, planning permission will not normally be granted.

7 Specific Issues

Biomass boilers

- 7.1 Biomass boiler provision has increased over recent years, supported by the financial benefits of the Government's Renewal Heat Incentive (RHI)⁵. However, the emissions from biomass plant can lead to significant emissions of NOx and PM, even from relatively small plant.
- 7.2 All biomass boiler plant applications will require a full air quality assessment to be submitted and will be resisted in the Rugby urban area unless mitigation is provided to achieve emissions of NOx and PM that are capable of achieving the following standards:
- Solid biomass boiler (< 1 MW thermal input) NOx 180mgNm³ / PM 5mgNm³
 - Solid biomass boiler (>=> 1 MW thermal input) NOx 125 mgNm³ / PM 5mgNm³

Standby / back-up power generation

- 7.3 All standby/back-up power generation applications will require a full air quality assessment to assess the acceptability of the site for such a scheme.
- 7.4 Rugby Borough Council expect all such assessments to include reasoning as to whether gas powered generation can be utilised in the first instance e.g identify the provision of suitable gas mains in the vicinity.
- 7.5 Any diesel-powered generators will be required to incorporate abatement equipment such as selective catalytic reduction and particulate trap (SCRT).

Permitting Under Part 1 of the Environmental Protection Act 1990

- 7.6 Industrial processes are regulated by the Environment Agency (Part A1 processes) and the borough (Part A2 and Part B processes). The planning regime must assume that the permitting regime will ensure the processes comply with their permits and the Act. The planning regime can, however consider whether a land use is appropriate and it must consider the exposure to pollutants.
- 7.7 Those Part A and B Process developments requiring planning applications will require a detailed air quality assessment.

⁵ http://www.energysavingtrust.org.uk/scotland/grants-loans/renewables/renewable-heat-incentive?gclid=EAlaIqobChMI_ZiY2Z7Q2gIVgbHtCh0dwxCEAAAYASABEgKGgvD_BwE

Mechanical Ventilation

- 7.8 Air quality concentrations may affect the suitability of certain locations for sensitive developments and this should be assessed in line with section 6.
- 7.9 Some applications in areas of poor air quality have proposed mechanical ventilation as a solution to overcoming potential exposure to poor air quality. This may involve sealed windows / triple glazing with trickle vents and a forced ventilation system, incorporating filters to remove pollutants.
- 7.10 Not only do such schemes increase the energy requirements of developments but also provide a questionable living space in what is essentially a 'hermetically sealed unit' and should not be seen as an accepted solution to mitigating against exposure
- 7.11 Any sensitive development, in an area of pollutant exceedance may choose to incorporate the following considerations:
- The sensitive development should be at least 20m from the kerb, with the alignment of living space to afford further separation from a pollutant source
 - Take account of the height separation of living accommodation from a road source e.g. in blocks of flats
 - The use of green infrastructure to provide a barrier to an adjacent pollution source
 - The projected length of time that the sensitive dwelling will be exposed to elevated pollution levels from scheme completion
 - Reduce the potential for internal pollution e.g. through electric cooking provision
 - Provision of monitoring data to support applications for sensitive developments
- 7.12 Where the above considerations cannot achieve acceptable exposure for a sensitive development then consideration should be given to the refusal of the scheme if the proposal conflicts with policy HS5 or SDC1.

Green Infrastructure

- 7.13 Plants and trees provide an aesthetically pleasing aspect to a scheme, may benefit biodiversity, flood risk reduction, sustainable drainage, and water quality improvements and may also be used to provide a barrier from a pollutant source such as a trafficked road. Green infrastructure in general can also be used in both large and small schemes to help in mitigating the impacts of air quality.
- 7.14 Certain types of plants, shrubs and trees can be effective in removing particulates from the atmosphere and have positive impacts for air quality, particularly if used cumulatively.

7.15 The Woodland Trust has published guidance on how trees can improve air quality this can be found here: <https://www.woodlandtrust.org.uk/media/1688/residential-developments-and-trees.pdf>. Warwickshire County Council have also produced guidance that can benefit air quality via green infrastructure, link here: <https://www.greenblue.com/gb/green-infrastructure/> The latest research from Birmingham University shows that absorption of pollutants by tree foliage is important but a much greater effect is obtained by trees, shrubs and hedges acting as a barrier between people and sources of pollution (e.g. between housing areas and heavily trafficked roads). <https://bham.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=e5bfd240-332e-4316-8e78-ab5901437983>

7.16 Poor air quality has an adverse impact on health. The Council would not want to see green infrastructure being delivered that would contribute to worsening health problems. Certain tree and plant species, the silver birch (*Betula utilis*) and the male Juniper (*Juniperus*) have been shown to exacerbate breathing problems, whereas species like the whitebeam (*sorbus aria 'Lutescens'*) and clematis (*climatis armandii*) reduce them. While the Council is keen to promote green infrastructure to help address air quality issues it would not support planting schemes where species that contribute to breathing problems dominate. The Tree and Design Action Group's Trees in Hard Landscapes guide and the Forestry Commission's Urban Tree Manual offer technical guidance on integrating trees into the urban landscape. The Tree Species Selection for Green Infrastructure: A Guide for Specifiers is a guide and searchable database. Advice on allergy friendly planting is available online such as www.allergyfriendlyplants.co.uk and www.allergyfree-gardening.com

Electric Vehicle Parking

7.17 Those installing electric vehicle charging will be required to comply with the most up to date guidance that applies at the time the planning application is submitted. This is currently the Code of Practice for Electric Vehicle Charging Equipment Installation (4th edition).

7.18 Policy D2 of the adopted Local Plan seeks the provision of electric vehicle parking in new developments in line with the standards set out in Appendix 5 of the Local Plan. These are set out below. If an applicant wished to exceed this level of provision in an attempt to help mitigate the air quality impacts of their proposal the Council is likely to be supportive of such an approach.

Electric Charging Points

Electric and hybrid vehicle charging points are required to be provided as part of development as outlined in the table below unless it can be demonstrated that it is financially unviable.

Development Type	Development Scale	Quantity Required	Type of Charging Point
------------------	-------------------	-------------------	------------------------

Residential	10 or more dwellings	1 charging point per dwelling; and 1 charging point per 10 unallocated parking spaces.	Passive charging points are to be provided for dwellings. These ensure cabling is provided for owners to install the correct socket for their vehicle. Active charging points are required for unallocated spaces.
Commercial, Industrial and Retail	Major Development	1 charging point per 10 spaces to include 1 charging point for every 10 disabled car parking space	

7.19 Appendix 4 sets out some advice on electric vehicle parking, provided by Warwickshire County Council, the local highways authority. The Council would encourage applicants to comply with this advice but accept there may be site specific issues that mean an alternative approach is necessary.

7.20 Hydrogen, which emits no carbon dioxide, can be used as an alternative to natural gas to transfer and store energy and could replace fossil fuels in industrial processes, internal combustion engines and homes. Going forward hydrogen is likely to play an increasing role in society and the Council would want to future-proof development to enable easy conversion to an economy that makes greater use of hydrogen. So, for example, in considering a planning application for a petrol filling station the Council would like to see evidence that pumps could be easily adapted to dispense hydrogen or that space exists within the site to install hydrogen pumps.

7.21 In November 2020 the Government published their “Ten point plan for a Green revolution” and one of them is driving the growth of low carbon hydrogen with an aim to generate 5GW of low carbon hydrogen by 2030. Given Government support for this sector the importance of hydrogen appears likely to grow.

Car Clubs

7.22 Policy D1 seeks to reduce traffic movements by promoting sustainable transport and through the use of travel plans. One way to reduce traffic movements is to promote car clubs, these are identified as a form of mitigation set out in Table 3 above. Car clubs are short-term car rental services that allow members access to locally parked cars and pay by the hour or day. Car clubs offer an alternative model to private car ownership for individuals and businesses. Car clubs reduce the need for private parking and can help more people give up their cars while allowing for occasional car travel. The benefits they offer include;

- **Sustainable travel behaviour.** Car clubs have the potential to reduce car ownership, inspiring a shift away from private car use to walking, cycling and public transport instead.
- **Benefits for businesses.** Car clubs can help businesses and charities access the cleanest vans and cars, save money and reduce emissions.
- **Transition to electric vehicles.** Many car clubs now operate electric or hybrid vehicles capable of operating with zero emissions.
- **Environmental and safety benefits.** By encouraging people to transition to cleaner vehicles with the highest safety rating, car clubs can improve air quality and reduce CO2 emissions.

Further information on car clubs is available from a number of websites such as

- [CoMoUK](#)
- [BVRLA](#)

8 Engagement and pre application advice

8.1 Early engagement with Rugby Development Management officers and the Commercial Regulation Team is important to establish the scope of the required air quality assessment and any mitigation that will be needed to support a proposed planning application in order to comply with policy HS5. It should be noted that for major schemes, pre-application charging applies. More information about this can be found here:

https://www.rugby.gov.uk/info/20084/planning_control/451/do_i_need_planning_permission/2

8.2 For large and complex industrial processes, the Commercial Regulation Team should also be able to help by identifying:

- if there are any significant air quality issues that may arise at the permitting stage (so there are 'no surprises'); and
- advising whether there are any special requirements that might affect the likelihood of getting planning permission (such as the height of chimneys).

Appendix 1 Air Quality Assessment Protocol

Air Quality Assessment Protocol to Determine the Impact of Vehicle Emissions from Development Proposals

An air quality assessment should clearly establish the likely change in pollutant concentrations at relevant receptors resulting from the proposed development during both the construction and operational phases. It must take into account the cumulative air quality impacts of committed developments (i.e. those with planning permission or allocated in the Local Plan).

Air quality assessments should consider NO_x and PM emissions and NO₂ and PM concentrations

Key Components of an Air Quality Assessment

The assessment will require dispersion modelling utilising agreed monitoring data, traffic data and meteorological data. The modelling should be undertaken using recognised, verified local scale models by technically competent personnel and in accordance with LAQM TG.16. The study will comprise of:

1. The assessment of the existing air quality in the study area for the baseline year with agreed receptor points and validation of any dispersion model;
2. The prediction of future air quality without the development in place (future baseline or do-nothing);
3. The prediction of future emissions and air quality with the development in place (with development or do-something).
4. The prediction of future emissions and air quality with the development (with development or do-something) and with identified mitigation measures in place.

The assessment report should include the following details:

- A. A detailed description of the proposed development, including:
 - Identify any on-site sources of pollutants;
 - Overview of the expected traffic changes;
 - The sensitivity of the area in terms of objective concentrations;
 - Local receptors likely to be exposed;
 - Pollutants to be considered and those scoped out of the process.
- B. The relevant planning and other policy context for the assessment.
- C. Description of the relevant air quality standards and objectives.
- D. The assessment method details including model, input data and assumptions:
 - For traffic assessment;
 - Traffic data used for the assessment;
 - Emission data source;
 - Meteorological data source and representation of area;
 - Baseline pollutant concentration including any monitoring undertaken;
 - Background pollutant concentration;
 - Choice of base year;

- Basis for NO_x: NO₂ calculations;
- A modelling sensitivity test for future emissions with and without reductions;

For point source assessments:

- Type of plant;
 - Source of emission data and emission assumptions;
 - Stack parameters – height, diameter, emission velocity and exit temperature;
 - Meteorological data source and representation of area;
 - Baseline pollutant concentrations;
 - Background pollutant concentrations;
 - Choice of baseline year;
 - Basis for deriving NO₂ from NO_x.
- E. Model verification for all traffic modelling following DEFRA guidance LAQM.TG (09):
- F. Identification of sensitive locations:
- G. Description of baseline conditions:
- H. Description of demolition/construction phase impacts:
- I. Summary of the assessment results:
- Impacts during the demolition/construction phase;
 - Impacts during the operation phase;
 - The estimated emissions change of local air pollutants;
 - Identified breach or worsening of exceedances of objectives (geographical extent)
 - Whether Air Quality Action Plan is compromised;
 - Apparent conflicts with planning policy and how they will be mitigated.
- J. Mitigation measures.

Air Quality Monitoring

In some case it will be appropriate to carry out a short period of air quality monitoring as part of the assessment work. This will help where new exposure is proposed in a location with complex road layout and/or topography, which will be difficult to model or where no data is available to verify the model. Monitoring should be undertaken for a minimum of six months using agreed techniques and locations with any adjustments made following Defra technical guidance LAQM.TG (09).

Assessing Demolition/Construction Impacts

The demolition and construction phases of development proposals can lead to both nuisance dust and elevated fine particulate (PM₁₀ and PM_{2.5}) concentrations. Modelling is not appropriate for this type of assessment, as emission rates vary depending on a combination of the construction activity and meteorological conditions, which cannot be reliably predicted. The assessment should focus on the distance and duration over which there is a risk that impacts may occur. The Institute of Air Quality Management (IAQM)⁶ has produced a number of documents to which this guidance refers. The document `Guidance on the

⁶ IAQM www.iaqm.co.uk

Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance' should be the reference for reporting the construction assessment.

Cumulative Impacts

The NPPF (paragraph 181) recognises that planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas.

Where relevant, the cumulative or in-combination effects arising from several developments, can impact of air quality when developments are permitted sequentially, with each individually having only a relatively low polluting potential, but which cumulatively result in a significant worsening of air quality.

This will occur where:

- A single large site is divided up into a series of units, such as an industrial estate or retail park, or where large allocations are divided up into development parcels;
- A major development is broken down into a series of smaller planning applications for administrative ease; and
- There are cumulative air quality impacts from a series of unrelated developments in the same area.

The first two cases the cumulative impact may be addressed by a single developer-bringing forward an outline application for the whole site which includes an air quality assessment as part of an Environmental Impact Assessment. For major developments that are broken down into a series of smaller planning applications, the use of a 'Master or Parameter Plan' that includes an air quality assessment may address the cumulative impact. The onus will be on the developer to satisfy the Council, how cumulative impacts have been satisfactorily addressed.

Appendix 2 – Damage Costs: calculations and example

Damage costs are the costs to society (mainly health) per tonne of pollutant emitted. They provide an easy reckoning of the monetised value of changes in pollution. The Government publishes damage costs for NOx and PM and also provides an Emission Factor Toolkit to allow the calculation of the emissions from schemes over the coming years.

Applicants calculating damage costs should incorporate the following:

- The most recent version of the Emission Factor Toolkit
- Both NOx and PM to be considered
- Appropriate HGV % traffic split to be used
- Traffic speed of 30km / hour to be used
- The appropriate damage cost category as advised by the Rugby Commercial and Regulations Team

The following example outlines the damage cost calculation process for an urban mixed-use development outside London, to be operational in 2019, including residential development in 2 blocks and a hotel. The trip generation for the residential scheme is low due to less than 50% parking level per dwelling, including 25% provision of electric vehicle charging points (and a further 25% potential) and cycle stores. The hotel scheme includes 100+ space parking provision. Service deliveries to both the residential and hotel scheme are also considered.

The scheme is categorised as ‘outer conurbation (not London)’ for damage costs.

Step 1 – Using the trip increase for each aspect of the scheme calculate the annual emissions of NOx and PM (in tonnes) for each of the 5 years from opening

	Projected yearly emissions (Defra Emission Factor Toolkit v8)				
	2019	2020	2021	2022	2023
Residential NOx	129.73952	120.58516	110.44020	100.85574	92.75155
Residential PM	11.50558	11.31002	11.17497	11.06880	10.98908
Hotel NOx	506.79502	471.03580	431.40703	393.96773	362.31073
Hotel PM	44.94366	44.17977	43.65224	43.23749	42.92610
Deliveries NOx	477.56736	409.78076	347.56394	296.07882	256.18598
Deliveries PM	32.62307	31.71858	30.96677	30.38716	29.94013
Total NOx (kg)	1,114.1019	1,001.4017	889.41117	790.90229	711.24826
Total PM (kg)	98.07231	87.20837	85.79398	84.69345	83.85531
Total NOx (t)	1.1141019	1.0014017	0.8894111	0.7909022	0.7112482
Total PM (t)	0.0980723	0.0872083	0.0857939	0.0846934	0.0838553

Step 2 – Using the selected damage cost category, uplift the 2015 prices provided by the IGCB by 2% per annum to reflect the correct cost in each of the first 5 years from opening

	Price per tonne of pollutant in projected years (Defra IGCB)					
	2015 price/tonne	2019	2020	2021	2022	2023
NOx	£31,776	£34,395	£35,083	£35,784	£36,500	£37,230
PM	£87,770	£95,003	£96,903	£98,841	£100,817	£102,833

Step 3 – Multiply the tonnage of emissions for each pollutant by the damage cost price for each year. Provide a cumulative total for 5 years

	Damage Costs				
	2019 (year 1)	2020	2021	2022	2023 (year 5)
NOx	£38,319	£35,132	£31,826	£28,867	£26,479
PM	£9,317	£8,450	£8,479	£8,538	£8,623
Totals (cumulative)	£47,636	£91,218	£131,523	£168,928	£204,030

The application in this example provided a scheme car club to make the scheme acceptable in air quality terms.

Appendix 3 – Local Plan Policy

Relevant Local Plan Policies:

Policy SDC1: Sustainable Design

All development will demonstrate high quality, inclusive and sustainable design and new development will only be supported where the proposals are of a scale, density and design that responds to the character of the areas in which they are situated. All developments should aim to add to the overall quality of the areas in which they are situated.

Factors including the massing, height, landscape, layout, materials and access should also be a key consideration in the determination of planning applications.

The Council will consider appropriate housing density on a site by site basis with decisions informed by local context of the area in terms of design considerations, historic or environmental integration, local character, identified local need and, where relevant, a Neighbourhood Development Plan.

Proposals for new development will ensure that the living conditions of existing and future neighbouring occupiers are safeguarded.

Proposals for housing and other potentially sensitive uses will not be permitted near to or adjacent sites where there is potential for conflict between the uses, for example, an existing waste management site. Such proposals must be accompanied by supporting information demonstrating that the existing and proposed uses would be compatible and that the proposal has addressed any potential effects of the existing use on the amenity of the occupiers of the proposed development.

Developers should provide adequate off-street storage space for wheeled bins, including storing recycling, to serve all new residential properties, including conversions. This requirement is particularly important in designated Conservation Areas where the visual importance of the street scene has been acknowledged and there is a duty for the area's character and appearance to be

Policy D1: Transport

Development will be permitted where sustainable modes of transport are prioritised and measures designed to mitigate transport impacts arising from with individual developments proposals or cumulative impacts caused by a number of proposals are provided. Proposals should have regard to the Sustainable Transport Strategy.

All large scale developments which result in the generation of significant traffic movements, should be supported by a Transport Assessment and where necessary a Travel Plan, to demonstrate practical and effective measures to be taken to mitigate the adverse impacts of traffic. It must consider:

- The impact of the proposal upon existing infrastructure;
- How the site will connect safely to public transport;
- Safe and convenient access to pedestrians and cyclists;
- Potential impact of heavy goods vehicles accessing the site, including during construction: and
- The entering into of bus and/or freight partnerships with the County Council and/or third parties.

Smaller scale development must also be accompanied by a Transport Statement which should address:

- Opportunities for sustainable transport to serve the proposed development;
- Whether safe and suitable access to the site can be achieved; and
- Whether improvements can be undertaken that cost effectively mitigate the impacts of the development.

Proposals should be considered in the light of the transport mitigation measures identified in the Infrastructure Delivery Plan, and other localised impacts as identified in the transport assessment statements.

Policy D3: Infrastructure and Implementation

The delivery of new development will be dependent on sufficient capacity being available in existing infrastructure and/or measures being proposed to mitigate its impact. Where this cannot be demonstrated permission for new development will only be granted where additional capacity can be released through new infrastructure, or better management of existing infrastructure.

Developer contributions may be sought to fund new infrastructure when required to mitigate development impacts and a programme of delivery will be agreed before development can take place.

Proposals should be considered in the light of the mitigation measures identified in the Infrastructure Delivery Plan.

Appendix 4 – Electric Vehicle Charging

A4.1 Slow / trickle - 3kW: this is the oldest standard and can typically be supplied by a standard household 3-pin plug, a wall or post mounted purpose built unit or via a street light charging point. A typical full charge of an electric vehicle (from empty) takes between 7 and 8 hours, meaning that it is most suited for overnight charging at or near home or work, and the number of users in a 24 hour period is low (typically 1 – 2).

A4.2 Fast - 7kW a newer standard that requires a dedicated power source and connecting cable type. A typical full charge on an electric vehicle takes 3- 4 hours, meaning that 3 or 4 users a day could fully charge. This supply is becoming common in many current on-street or public car park charging points, as well as in supermarkets and businesses. 22kW units can be deployed for faster charging where 3-phase charging is available e.g. multi-storey car parks.

A4.3 Rapid - 43kW AC / – 50kW DC : a high power rapid charging option to suit the needs of users who need to charge their electric vehicle quickly to keep them in use, such as taxis, commercial vehicles or company cars. An 80% charge from empty typically takes 30-40 minutes for a standard EV e.g. Nissan Leaf, allowing for a high number of charges per day. Rapid points are now available at most motorway service stations. Although smaller designs are becoming available, these units are relatively large and expensive compared to lower power units and require significant local grid connection capacity which can impact upon locations for rapid charge point installations. 3kW charging point 7kW charging point post Rapid 50kW charger.

A4.4 Supercharge Rapid – 120-140kW: these are currently installed exclusively by Tesla – enabling their larger battery powered EV range (60- 120kWh capacity) to charge quickly e.g. Tesla Model ‘S’ can charge up to 80% in about 40 minutes or add 170 miles of range in about 30 minutes. Superchargers will become increasingly important as other high powered EVs enter the UK market e.g. VW and JLR models. Tesla has indicated that arrangements with other EV manufacturers are likely to enable such EVs to access the Tesla supercharge highway. They also expect that their Tesla models will be able to fully charge within 10 minutes in future.

A4.5 County advise against on-street charging points on residential streets for the following reasons:

- in many locations, lighting columns are located at the rear of the footway. This makes them unsuitable to use for charging.
- in many places, lighting columns are not suitable for the required upgrade.
- the need for dedicated EV bays on-street in locations where residential on-street parking is already at a premium compounds parking issues. Providing designated EV parking bays would demand a Traffic Regulation Order and once in place this would need to be enforced.
- The cost of installation and ongoing maintenance of on-street charge-points.