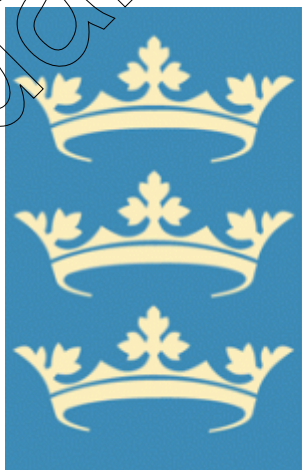




**Air Quality Guidance for Planners and Developers**

**JUNE 2018**



**Hull**  

---

**City Council**

Nuance POWER PDF Trial  
www.nuance.com

## Contents

Unless it results in members of the public being exposed to emissions, applications such as those that fall outside the lower values in Appendix B, are unlikely to need an air quality assessment of any kind and applicants will not need to refer further to this document.

Of the remainder where an Air Quality Assessment is requested, most will only require a simple assessment, as exemplified in Box One on Page 15

Further assistance can be obtained by contacting Hull City Council's Air Quality Officer by telephone, on 01482 300300 or by email: [EnvironmentalProtection.jobrequests@hullcc.gov.uk](mailto:EnvironmentalProtection.jobrequests@hullcc.gov.uk).

Introduction.	5
Figure One. Procedure for Evaluating New Developments.	7
Section One – Better by Design.	8
Section Two. – Screening Criteria for Air Quality Assessment.	9
Section Three - What should be in an Air Quality Assessment.	12
Section Four- Describing the impacts.	14
Section Five - Mitigating Impacts	16
Box One. – Example of an Air Quality Statement.	11
Appendix A – Relevant Policies in Local Plan.	18
Appendix B - Air Quality Assessments and Guidelines.	19
Appendix C.- Detailed Assessment Requirements.	22
Appendix D – Hull Air Quality Management Area	25

Nuance POWER PDF Trial  
www.nuance.com

## Introduction

This guidance is intended to assist with planning submissions to Kingston upon Hull City Council and is largely based on Guidance produced in January 2017 by Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM), which can be referred to if more detail is required.

It is written to advise on how the requirements of the current National Planning Policy and Hull City Council's Local Plan can be complied with.

Any air quality issue that relates to land use and its development is capable of being a material planning consideration. The weight, however, given to air quality in making a planning application decision, in addition to the policies in the local plan will depend on such factors as:

- the severity of the impacts on air quality;
- the air quality in the area surrounding the proposed development;
- the likely use of the development, i.e. the length of time people are likely to be exposed at that location; and
- the positive benefits provided through other material considerations.

In Hull, we not only look to achieve the Air Quality Objectives<sup>1</sup> but want to ensure that we protect the health and wellbeing of residents and visitors, by looking to minimise emissions from all sources, and we see planning and development control as a key factor in this aim. This is reflected in the Hull Local Plan which this guidance is aimed at supporting.

The Hull Local Plan has 12 Strategic Priorities, and air quality is a key component to each. It also has 52 specific policies, with Policy 47, Atmospheric Pollution being the main one that this document supplements.

In addition to that specific policy, there are 24 other policies in the Local Plan that have an association with air quality. These are listed in Appendix A.

The guidance is structured to provide an initial outline of what we require in this introduction, with links to more detail and further information in the remainder of the document.

**The flow chart below provides an overview of the following sections and outlines what is required when submitting a planning application.**

---

<sup>1</sup> [https://uk-air.defra.gov.uk/assets/documents/National\\_air\\_quality\\_objectives.pdf](https://uk-air.defra.gov.uk/assets/documents/National_air_quality_objectives.pdf)

### **How to use this guidance.**

The flow chart in Figure One summarises the process, but **it is expected that most developments will not need to proceed to a full air quality assessment.**

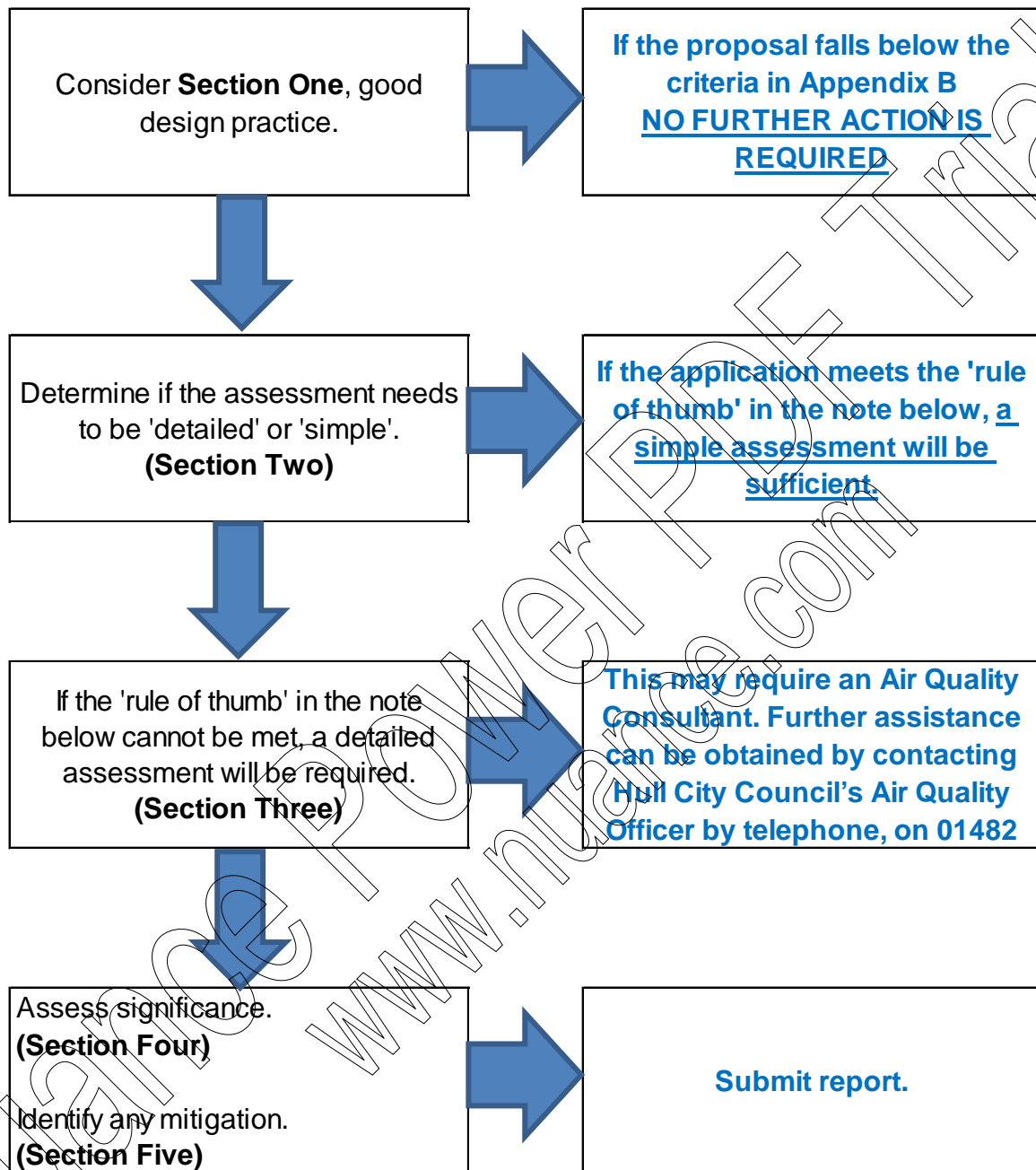
We would expect something proportional that demonstrates that due consideration has been given to the potential air quality impacts, and that the development has mitigated for those impacts as far as is reasonably practicable. For most applications, it is reasonable to submit a written explanation along the lines of Box One on page 15, provided it provides a clear picture.

An important element that can get missed is that it's not simply the emissions from the development, but also the potential impact of existing air quality on people, such as residents, customers etc. that the development brings to the area.

It is good practice to consult with the Local Planning to gain agreement on the need for an air quality assessment in support of a planning application and if one is required, the approach and methodology that will be used.

Nuance POWER  
www.nuance.com

Figure One – Procedure for Evaluating New Developments<sup>1</sup>



**Note:**

**A reasonable test for simple assessment would be to consider if an explanation similar to the example in Box One on Page 15 would be clear enough for an average person to understand and accept the conclusions. This is likely to be the situation in the majority of cases.**

## **Section One. Better by Design.**

Good practice principles should be applied to all developments that have not been screened out using criteria such as those in this guidance. These cover both emissions and exposure, and address both the design and operational phases. Some examples of such principles include the following.

### **Design phase**

- New developments should not contravene the Councils Air Quality Action Plan, or render any of the measures unworkable;
- Wherever possible, new developments should not create a new “street canyon” or a building configuration that inhibits effective pollution dispersion;
- Delivering sustainable development should be the key theme of any application;
- New development should be designed to minimise public exposure to pollution sources, e.g. by locating habitable rooms away from busy roads, or directing combustion generated pollutants through well sited vents or chimney stacks.
- Consideration should be given to the cumulative impact of nearby developments.

### **Operational phase**

Consideration should be given to the electric charging point strategy, which;

- New developments are encouraged to have provision for electric charging points with the provision of at least 1 Electric Vehicle (EV) “rapid charge” point per 10 residential dwellings and/or 1000m<sup>2</sup> of commercial floorspace. Where on-site parking is provided for residential dwellings, EV charging points for each parking space are encouraged.

Where development generates significant additional traffic, provision of a detailed travel plan which sets out measures to encourage sustainable means of transport (public, cycling and walking) via subsidised or free-ticketing, improved links to bus stops, improved infrastructure and layouts to improve accessibility and safety may be required.

When determining the number of parking spaces to be created, it should be demonstrated that alternative options have been fully appraised. Some Local Authorities incorporate various measures designed to ‘offset’ emissions which utilise the ‘Damage Cost Methodology<sup>2</sup>’ as used by Defra, but this is not a preferred method of Hull City Council.

---

<sup>2</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/182390/air-quality-damage-cost-guidance.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/182390/air-quality-damage-cost-guidance.pdf)



## **Section two. – Screening Criteria for Air Quality Assessment.**

**Anything below the criteria in the tables in Appendix B is unlikely to need an air quality assessment. Due consideration should be given to the Air Quality Management Area, as shown in Appendix D.**

It is reasonable to expect that an assessment will be required where there is the risk of a significant air quality effect, either from a new development causing an air quality impact or creating exposure to high concentrations of pollutants for new residents, however it is not possible to apply an exact and precise set of threshold criteria to cover the wide variety of development proposals and geographic locations. The following tables provide criteria that may be useful to guide the consultation process in establishing the need for an assessment.

They separately consider:

- the impacts of existing sources in the local area on the development; and
- the impacts of the development on the local area.
- the extent to which the development affects local air quality. Simply being below the air quality objectives may not be enough.

Where an air quality assessment is identified as being required, this may be either a Simple or a Detailed Assessment.

As outlined in Box One, a Simple Assessment is one relying on already published information and without quantification of impacts, in contrast to a Detailed Assessment that is completed with the aid of a predictive technique, such as a dispersion model. Much of the discussion in this Section relates to Detailed Assessments.

The use of a Simple Assessment may be appropriate, where it will clearly suffice for the purposes of reaching a conclusion on the significance of effects on local air quality. A Simple Assessment will be appropriate, if it can provide this evidence. Similarly, it may be possible to conduct a quantitative assessment that does not require the use of a dispersion model run on a computer.

**Whilst there is no hard and fast test to separate the requirement for a detailed assessment, from a simple one being sufficient, a reasonable test would be to consider if an explanation similar to the example in Box One would be clear enough for an average person to understand and accept the conclusions. This is likely to be the situation in the majority of cases.**

The criteria in Appendix B and also in Policy 47 of the Hull Local Plan and repeated in the accompanying SPD are intended to function as a sensitive 'trigger' for initiating an assessment in cases where there is a *possibility* of significant effects arising on local air quality. This possibility will, self-evidently, not be realised in many cases. The criteria should not be applied rigidly; in some instances, it may be appropriate to amend them on certain occasions, bearing in mind that the objective is to identify situations where there is a possibility of a significant effect on local air quality and health.

There may be a requirement to carry out an air quality assessment for the impacts of the local area's emissions on the proposed development itself, to assess the exposure that residents or users might experience.

This should take into account:

- the background and future baseline air quality and whether this will be likely to approach or exceed the values set by air quality objectives;
- the presence and location of Air Quality Management Areas as an indicator of local hotspots where the air quality objectives may be exceeded;
- the presence of a heavily trafficked road, with emissions that could give rise to sufficiently high concentrations of pollutants (in particular NO<sub>2</sub>), that would cause unacceptably high exposure for users of the new development;
- The cumulative impact when combined with other developments.

## **Box One – Example Air Quality Statement**

### **Air Quality Statement in Support of Application reference 01/234567/FULL**

#### **The construction of one block of 8 apartments 123 to 135 Pilot Street.**

A review of the records shows that the application site has been vacant for four years, having previously been occupied for 20 years by a warehousing and local delivery business.

A check of the local authority review and assessment of air quality for the period that the site was active indicated no cause for concern and it is not in the Air Quality Management Area.

While we have found no robust figures for previous traffic movements on the site, it is reasonable to assume that there were a minimum of 10 vehicle movements a day, as staff alone are liable to account for much of that, which makes this a very conservative estimate. Anecdotal evidence from people with specific local knowledge suggests that vehicle movements were in reality far in excess of that.

The properties will be built utilising modern materials and techniques, which will minimise the environmental impact of the properties and will have no private gardens, thus minimising the exposure of occupiers to existing air quality; the buyers pack will include information on walking and cycling routes, as well as the opportunities for bus and train travel. The car park for the properties will also include 2 electric vehicle charging points available for residents.

Given the location on the outskirts of the City Centre, it is expected that many of the occupiers of the proposed development will work locally, or utilise the nearby transport hub.

We feel that the above information demonstrates that the application is in the spirit of the City Council's Air Quality Strategy, and due consideration has been given to the potential impacts of the development on local air quality, and local air quality on the occupiers and that the mitigation measures will result in an overall improvement in air quality in comparison to the previous use of the site, which was not found to be presenting any air quality issues.

## **Section three - What should be in an Air Quality Assessment.**

Please note: The rest of this document is only intended for developments with a greater potential to impact on local air quality. **Something similar to Box One in Section One will be all that is required for most applications.**

It is good practice to consult with the Local Planning Authority to gain agreement on the need for an air quality assessment in support of a planning application and if one is required, the approach and methodology that will be used.

Where a development requires an air quality assessment, this should be undertaken using an approach that is robust and appropriate to the scale of the likely impacts. One key principle is that the assessment should be transparent and thus, where reasonable, all input data used, assumptions made, and the methods applied should be detailed in the report (or appendices).

### **Content of an air quality assessment**

The intent of an air quality assessment is to demonstrate the likely changes in air quality or exposure to air pollution, as a result of a proposed development. Often these changes will be quantified, although in some instances a qualitative assessment will be sufficient. Ultimately, the planning authority has to use this information to form its own view on the "significance" of the effects of air quality impacts, and thereby the priority given to air quality concerns in determining the application. The assessment therefore needs to provide sufficient information to allow this decision to be made.

The basis of the assessment should be to compare the air quality following completion of the development with that expected at that time without the proposed development (the future 'baseline'). Comparison with existing conditions will also be required, as current conditions are those with which people are familiar. There are three basic steps in an assessment:

- i. Assess the existing air quality in the study area (existing baseline) If background maps are to be used, the predicted levels should be qualified against local information;**
- ii. Predict the future air quality without the development in place (future baseline which may or may not include the contribution of committed development);**
- iii. Predict the future air quality with the development in place (with development).**

The possibility of cumulative impacts should also be considered. Therefore, there may be a case for modelling another future scenario, with committed development excluded, to allow the cumulative impact of all such future developments with planning permission to be assessed as one combined impact at selected receptors.

In most circumstances it is more likely that committed development would be included in the future baseline where the information exists to facilitate this. It is difficult to include other planning applications yet to be determined, as the outcome is not certain.

The report prepared detailing the results of the assessment should contain the following information (but not necessarily in this order): More detail is given in Appendix C.

- a. *Relevant details of the proposed development.*
- b. *The policy context for the assessment.* In Hull, measures introduced as part of the Council's Air Quality Strategy would need to be included.
- c. *Description of the relevant air quality standards and objectives.* In Hull, we want to protect the existing good air quality, and look for Assessments to show how emissions and impacts are minimised in the proposal.
- d. *The basis for determining significance of effects arising from the impacts.*
- e. *Details of the assessment methods.*
- f. *Model verification.*
- g. *Identification of sensitive locations.*
- h. *Description of baseline conditions.*
- i. *Assessment of impacts.*
- j. *Description of construction phase impacts.*
- k. *Cumulative impacts and effects.*
- l. *Mitigation measures.* Even where the effect is judged to be insignificant, consideration should be given to the application of good design and good practice measures, as outlined in **Section one**.
- m. *Summary of the assessment results.*

## **Section four- Describing the impacts.**

The assessment may use its own set of criteria to define magnitude, but the important matter to be concluded is the likely significant effects of the impacts on air quality. There is, therefore, a two stage process to be followed in the assessment:

- a qualitative or quantitative description of the impacts on local air quality arising from the development; and
- a judgement on the overall significance of the effects of any impacts.

The impacts are usually assessed at selected 'receptors'. It can also be helpful to present the changes in concentrations across the study area as a whole, using concentration isopleths on a map of the area, as this will help to inform the decision as to whether the effect is significant or not (by describing the geographical extent over which impacts occur and by helping identify the sensitive receptors that might be affected).

For most road transport related emissions, and diffuse emissions associated with development, long term average concentrations are the most useful for evaluating the severity of impacts. For any point source, some consideration must also be given to the impacts resulting from short term, peak concentrations of those pollutants that can affect health through inhalation.

### **Assessing Significance**

Impacts on air quality, whether adverse or beneficial, will have an effect on human health that can be judged as 'significant' or 'not significant'. This is the primary requirement of the EIA regulations, but is also relevant to other air quality assessments. It is important to distinguish between the meaning of 'impact' and 'effect' in this context. An impact is the change in the concentration of an air pollutant, as experienced by a receptor. This may have an effect on the health of a human receptor, depending on the severity of the impact and other factors that may need to be taken into account. Judging the severity of an impact is generally easier than judging the significance of an effect.

One of the relevant factors in the judgement of the overall significance of effect may relate to the potential for cumulative impacts and, in such circumstances, several impacts that are described as 'slight' individually could, taken together, be regarded as having a significant effect for the purposes of air quality management in an area, especially where it is proving difficult to reduce concentrations of a pollutant. Conversely, a 'moderate' or 'substantial' impact may not have a significant effect if it is confined to a very small area and where it is not obviously the cause of harm to human health.

Any judgement on the overall significance of effect of a development will need to take into account such factors as:

- the existing and future air quality in the absence of the development;
- the extent of current and future population exposure to the impacts; and
- the influence and validity of any assumptions adopted when undertaking the prediction of impacts.

Other factors may be relevant in individual cases.

A judgement of the significance should be made by a competent professional who is suitably qualified. The reasons for reaching the conclusions should be transparent and set out logically.

The judgement on significance relates to the consequences of the impacts; will they have an effect on human health that could be considered as significant?

Nuance POWER PDF Trial  
www.nuance.com



## **Section five - Mitigating Impacts**

Developers are encouraged to submit proposals that are consistent with the principles outlined in Section one. This will assist in reducing emissions and therefore in reducing impacts.

In those circumstances where the assessment concludes that there will be a significant effect, then there is a requirement for mitigating these residual impacts, where this is feasible.

Where the development proposal has already adopted the best practice for its type, there may be a need to implement further measures of the kind already incorporated or provide for some form of compensating pollution control measures in the local area. Where practicable, the impact of the mitigation measures proposed should be quantified.

The type of measures proposed to reduce air quality impacts will depend on the nature and scale of the proposed development. Where the proposal is for a small number of new residential units in an area of high pollutant concentrations, it would be reasonable to examine design and ventilation arrangements to reduce the impact of the external environment on occupants in the building.

Where future occupants might be exposed to higher air pollution concentrations than immediate neighbours, it is expected that the applicants will design acceptable solutions by considering site layout and internal layout of the buildings. The aim should be to ensure that sensitive facades are a suitable distance from pollution sources such as busy roads. For example, in the case of mixed-use sites, sensitive uses should be placed in the least polluted parts of the site, which may result in sensitive uses being located at greater horizontal or vertical distances from busy roads. For such sites the City Council is unlikely to support residential developments that rely upon artificially ventilated and sealed buildings to protect the occupants. This is because in the City Council's view, sealed residential buildings that cannot be naturally ventilated are neither desirable nor sustainable.

Where the proposed development is larger and its impact on air quality greater, then wider measures could be considered, such as improvements in the emissions from public transport and funding for traffic management measures over a wider area. Large industrial developments subject to control under the Environmental Permitting Regulations should conform to best practice within the relevant sector and in consultation with the regulator. Increasing stack height may be one option for reducing impacts at specific receptors and will be an outcome of permitting. For some smaller developments with combustion sources, there is often considerable scope for optimising the stack location and height such that dispersion is enhanced. This is an aspect that is often neglected in the design and layout of buildings.

The presence of an AQMA should not halt all development, but where development is permitted, the planning system should ensure that any impacts are minimised as far as is practicable. Even where developments are proposed outside of AQMAs, and where pollutant concentrations are predicted to be below the objectives/limit values, it remains important that the proposed development incorporates good design principles and best practice measures, as outlined in Section one and that emissions are fully minimised.



Suggestions for mitigation.

Redesign, Mitigate, Offset

### 1. Redesign

- Car free development
- Reduced car parking provision
- Remove populated spaces away from busy roads
- Arrange site to separate polluting and sensitive uses
- Arrange site to centrally locate trip attractors
- Streetscape design to ensure that cars are not the dominant mode of travel
- Design in walking and cycling routes and/or upgrade existing routes and provision of facilities for walkers and cyclists
- Plan mixed-use developments where appropriate as well as provision of community facilities
- Consider Home Zones
- Consider impact on local road network
- Avoid creation of non-dispersive canyons
- Develop communal combined heat and power
- Solar water heating
- Improved building insulation

### 2. Mitigation

- Provide car share scheme
- Travel planning – residential and commercial developments
- Welcome pack with information of public transport routes/times etc, walking and cycling routes
- Restricted speed

### 3. Offset – S106 agreements

- Financial contribution towards traffic management measures
- Financial contribution towards improvements in public transport (this could include increased frequency of service/extended hours/low emission vehicles etc.)
- Financial incentives to encourage public transport use
- Financial contribution towards improvements in walking and cycling facilities.

## **Appendix A. Relevant Policies in the Local Plan.**

Policy 1 Economic growth

Policy 12 District, Local and Neighbourhood Centres

Policy 13 Education, health and community facilities

Policy 17 Energy efficient design

Policy 18 Renewable and low carbon energy

Policy 21 Designing for housing

Policy 23 Designing employment development

Policy 25 Sustainable travel

Policy 26 Location and layout of development

Policy 27 Transport appraisals

Policy 28 Classified Road Network

Policy 29 New roads and road improvements

Policy 30 New parking sites

Policy 31 City Centre car parking

Policy 33 Bus transport

Policy 34 Rail transport

Policy 35 Water transport

Policy 36 Walking, Cycling, and Powered Two-Wheelers

Policy 42 Open Space

Policy 43 Green infrastructure and the Green Network

Policy 44 Biodiversity and wildlife

Policy 45 Trees

Policy 46 Local food growing

Policy 47 Atmospheric Pollution

Policy 52 Infrastructure and Delivery

## Appendix B. Air Quality Assessments and Guidelines - Required Details

Land Use <sup>(b)</sup>	Use and description of development	Air Quality Statement <sup>(e)</sup>	Air Quality Assessment and Travel Plan <sup>(e)(d)(e)</sup>
A1	Retail sale of food goods to the public	GFA between 500 and 800m <sup>2</sup>	GFA over 800m <sup>2</sup>
A1	Retail sale of non-food and goods to the public	GFA between 500 and 1500m <sup>2</sup>	GFA over 1500m <sup>2</sup>
A2	Financial and professional services	GFA between 500 and 2500m <sup>2</sup>	GFA over 2500 m <sup>2</sup>
A3	Restaurants and cafés	GFA between 500 - 2500m <sup>2</sup>	GFA over 2500m <sup>2</sup>
A4	Drinking establishments	GFA between 500 - 600m <sup>2</sup>	GFA over 600m <sup>2</sup>
A5	Hot food takeaway	GFA between 500 - 500m <sup>2</sup>	GFA over 500m <sup>2</sup>
B1	Business: (a)Offices not included in Class A2 (b)Research and development. (c)Light Industry	GFA between 500 - 2500m <sup>2</sup>	GFA over 2500m <sup>2</sup>
B2	General industry not included in B1). The former 'special industrial' use classes (B3 to B7), are now all included in B2.	GFA between 500 - 4000m <sup>2</sup>	GFA over 4000m <sup>2</sup>
B8	Storage or Distribution Centres	GFA between 500 - 5000m <sup>2</sup>	GFA over 5000m <sup>2</sup>
Land Use <sup>(b)</sup>	Use and description of development	Air Quality Statement	Air Quality Assessment and Travel Plan

C1	Hotels as long as 'no significant element of care is provided'.	GFA over 500m <sup>2</sup>	GFA over 500m <sup>2</sup> and Over 100 bedrooms
C2	Residential institutions - hospitals, nursing homes	GFA over 500m <sup>2</sup>	GFA over 500m <sup>2</sup> and Over 50 beds
C2	Residential institutions - education, boarding schools and training centres	GFA over 500m <sup>2</sup>	GFA over 500m <sup>2</sup> and Over 150 students
C2	Residential institutions – hostels	-	GFA over 500m <sup>2</sup> and Over 400 residents
C3	Dwelling houses for not more than six people living together as a one household. <sup>(e)</sup>	Between 10 - 80 dwellings	Over 80 dwellings
C4	Houses in Multiple Occupation	Between 10 - 80 dwellings	Over 80 dwellings
D1	<p>Non-residential Institutions includes:</p> <ul style="list-style-type: none"> <li>• Medical and health services</li> <li>• Educational and culture <sup>(f)(g)(h)</sup></li> <li>• Places of worship, religious instruction and</li> <li>• church halls.</li> </ul>	GFA between 500 and 1000m <sup>2</sup>	GFA greater than 1000m <sup>2</sup>
<b>Land Use<sup>(b)</sup></b>	<b>Use and description of development</b>	<b>Air Quality Statement<sup>(e)</sup></b>	<b>Air Quality Assessment and Travel Plan<sup>(c)(d)(e)</sup></b>

D2	<p>Assembly and leisure includes:</p> <ul style="list-style-type: none"> <li>• cinemas</li> <li>• dance and concert halls</li> <li>• sports halls</li> <li>• swimming baths</li> <li>• skating rinks</li> <li>• gymnasiums</li> <li>• bingo halls</li> <li>• casinos</li> <li>• other indoor and outdoor sports and leisure</li> <li>• uses not involving motorised vehicles or firearms.</li> </ul>	GFA between 500 and 1500m <sup>2</sup>	GFA greater than 1500m <sup>2</sup>
Others*	Includes for example	GFA over 500m <sup>2</sup>	To be agreed
	<ul style="list-style-type: none"> <li>• Developments liable to impact on the highway network in terms of the criteria detailed in The Design Manual For Roads and Bridges, Volume Eleven, Section three, Part 1.</li> <li>• stadium</li> <li>• retail warehouse clubs</li> <li>• theatres</li> </ul>		

## **Appendix C.- Detailed Assessment Requirements.**

*a. Relevant details of the proposed development.* A description containing information relevant to the air quality assessment should be provided, although a fully detailed description of the proposal is not required. This should identify any on-site sources of pollution and an overview of the expected traffic changes or the changes in emissions from the site for a specified year, e.g. the opening year or year the project is completed if phased. A brief introduction to the sensitivity of the area should also be provided, noting the presence of an AQMA and any nearby sources that may affect the local air quality. The proposed location of any sensitive receptors in relation to these nearby sources should be described. An introduction to the pollutants and sources to be assessed should be provided and, if appropriate, those that have been scoped out of further assessment.

*b. The policy context for the assessment.* This should summarise the national and local policies that should be taken into account in the assessment. In Hull, measures introduced as part of the Council's Air Quality Strategy would need to be included.

*c. Description of the relevant air quality standards and objectives.* Most air quality assessments will be carried out to assess compliance with UK air quality objectives. In Hull, we want to protect the existing good air quality and look for Assessments to show how emissions and impacts are minimised in the proposal.

*d. The basis for determining significance of effects arising from the impacts.* The descriptors used for describing the severity of impacts should be set out, together with the basis for determining the significance of the effects arising from air quality impacts.

*e. Details of the assessment methods.* This section should provide details of the methods, including the model (and version number) and the input data used for the assessment and any assumptions that have been made. Where a commonly applied method is used, a detailed description of the model itself is not required. Details should be provided on all local input data and assumptions, including:

- the emission data and their source, with details where non-standard data are used;
- source of the meteorological data, with a description of how representative they are of the conditions in the vicinity of the proposed development;
- baseline pollutant concentrations;
- background pollutant concentrations;
- choice of baseline year;
- basis for NO<sub>x</sub>:NO<sub>2</sub> calculations.

There will be some variation between requirements for reporting data relating to point sources and road traffic. The former will have some physical properties of the emission to be reported, i.e. stack height, diameter, emission velocity and exit temperature. The latter will require details of assumptions made regarding emission factors and features of the traffic flows used in the model, such as speeds and vehicles types, e.g. percentage of heavy duty vehicles (HDVs) in the traffic.

*f. Model verification.* If verification is not done, then some justification or explanation will be required. Model verification involves a comparison of the predicted versus measured concentrations and allows an adjustment to be made to account for systematic errors. Such errors may include uncertainties in traffic flow, vehicle emission factors and estimated background concentrations, as well as limitations of the model to represent dispersion in settings where air flow is affected by roadside buildings, trees etc. Model verification will be important, especially where predicted concentrations are close to the objective, and should be based on the most appropriate available monitoring data (and for some schemes it may be necessary to carry out specific monitoring to allow robust model verification to be undertaken). A more complete description of the approach to model verification is provided in LAQM Technical Guidance. Full details of the verification should be provided in the assessment.

*g. Identification of sensitive locations.* Local receptors should be identified, including residential and other properties close to and within the proposed development, as well as alongside roads significantly affected by the development, even if well away from the development site, and especially if within AQMAs. These receptors will represent locations where people are likely to be exposed for the appropriate averaging time (dependent on the air quality objective being assessed against).

*h. Description of baseline conditions.* The findings of any site visit(s) and/or desktop investigations will be set out, noting sources that may affect local air quality. A description of available monitoring data will be important to help define baseline conditions and put the model results into context. Where monitoring data are included in the report, it will be important to include details of the monitoring locations, the monitoring method, sampling period, data capture and any adjustments applied to the data, such as diffusion tube bias adjustment factors. Reference should also be made to the background maps produced by Defra, together with any adjustments of these mapped values to take account of local monitoring (but only where the monitoring is at true background sites). Reference should also be made to the Defra maps showing sections of road where the limit value is exceeded, as these represent the 'official' exceedences of the limit value, as reported to the European Commission. These maps are only available (at the time of writing) for 2013 and not for any future years.

*i. Assessment of impacts.* Results of modelling the 'with development' scenario should be clearly set out in tables, and where appropriate as concentration contours on maps of the study area. Comparisons should be made with the 'no development' conditions. Differences in concentrations between 'with development' and 'no development' conditions should also be tabulated. Descriptions of the impacts at the individual receptors should be provided (**see section below**), taking into account the absolute concentrations in relation not just to the air quality objectives, but also to the degree of any increase, with a comment on how mitigation has minimised this.

A comment on the sensitivity of the results to input choices is desirable, so that a view can be taken of the uncertainties.

*j. Description of construction phase impacts.* These impacts will relate primarily to dust emissions, which give rise to dust soiling and elevated PM10 concentrations, although construction plant and vehicles may need assessment.



The assessment should take into consideration the likely activities, duration and mitigation measures to be implemented. The distance over which impacts are likely to occur and an estimate of the number of properties likely to be affected should be included. This assessment should follow the guidance set out by the IAQM.

*k. Cumulative impacts and effects.* In many cases, the impact of the development being assessed will have a cumulative effect with other planned developments, which may or may not have planning permission. Where these developments have been granted planning consent and are therefore 'committed' developments, their impacts should be assessed cumulatively with those of the application site. The contribution of these committed developments should be accounted for in the 'future baseline', provided that their contributions can be quantified. This situation can arise when several such developments are contributing additional road traffic on one stretch of road. In some particular cases, there may be another notable proposed development (without planning permission) in close proximity that could contribute an impact at receptors in combination with the primary development being assessed. In these circumstances, it may be necessary to quantify this combined impact for selected receptors and assess it against the future baseline.

*l. Mitigation measures.* In those cases where a significant effect is identified then the measures to be employed to avoid, reduce and, where appropriate, offset this effect should be set out. **Even where the effect is judged to be insignificant, consideration should be given to the application of good design and good practice measures, as outlined in Section one.**

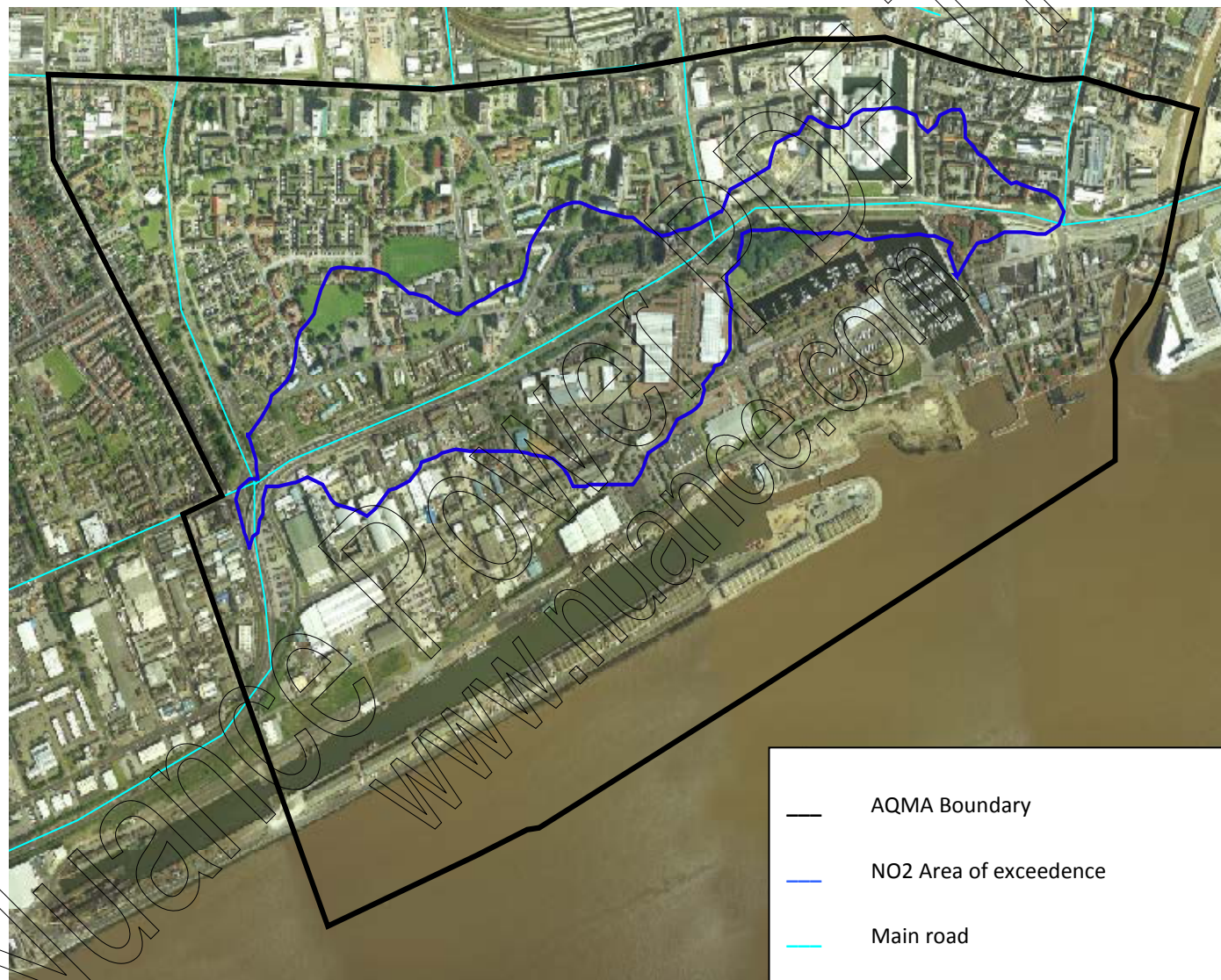
*m. Summary of the assessment results.* This should include:

- Impacts during the construction phase of the development (usually on dust soiling and PM10 concentrations);
- Impacts on existing receptors during operation (usually on concentrations of nitrogen dioxide, PM10 and PM2.5);
- Impacts of existing sources on new receptors, particularly where new receptors are being introduced into an area of high pollution;
- Any exceedances of the air quality objectives arising as a result of the development, or any worsening of a current breach (including the geographical extent);
- Whether the development will compromise or render inoperative the measures within an Air Quality Action Plan, where the development affects an AQMA;
- The significance of the effect of any impacts identified; and
- Any apparent conflicts with planning policy.

It is important to recognise that the focus of the procedures used by local authorities to prepare their LAQM reports is designed specifically for the purpose of identifying whether any air quality objectives are likely to be exceeded. An air quality assessment for a development will need to go beyond this, with attention given to defining the magnitude of the changes that will take place, even where objectives are not exceeded. Nevertheless, the technical guidance provided by Defra to help local authorities carry out their LAQM duties includes some useful information on carrying out an air quality assessment.



**Appendix D – Hull Air Quality Management Area.**



0.4 0 0.4 0.8 Miles