

Text reference and comment	Response
<p><b>Anonymous</b></p> <p>Para 1.2.17 states that “<i>due to the diverse range of projects and the wide range of factors that influence the approach taken means it is not possible to be prescriptive. IAQM advice is that the assessments should be undertaken by, or under close supervision of an experienced practitioner.</i>”</p> <p>Comment – After reading this document I find it difficult to determine what is required due to it not being prescriptive. In our experience the air quality teams will generate the impacts and pass numbers onto the ecologists, they generally don't understand what the numbers mean. For this guidance to be useful it needs to be more prescriptive otherwise a range of different consultants will have different interpretations on what the guidance is trying to advocate.</p>	<p>Amendment made: ‘<i>...due to the diverse range of projects and the wide range of factors that influence the approach taken means it is not possible to be <u>entirely</u> prescriptive. IAQM advice is that the assessments <u>of impacts</u> should be undertaken by, or under close supervision of, an experienced <u>air quality</u> practitioner.</i>’</p> <p>This document is not intended to provide guidance to ecologists on how to determine the ecological effects of air quality impacts. It is hoped that it will be possible to produce a joint document with CIEEM eventually that will provide such advice.</p> <p>Paragraph 1.2.6 explains the precise limits of the air quality specialist's role, which is to identify when a project or plan will clearly <i>not</i> have a significant effect (on the integrity of a habitat) or to provide the ecologist with a description of the air quality <i>impacts</i>, so that the significance of <i>effect</i> can be assessed by the appropriate professional.</p>
<p>Para 3.3 – Interpretation of the Wealden case and the DMRB screening criteria</p> <p>Comment – Whilst the DMRB screening criterion was raised in this case, if the developer had undertaken an assessment which included both the developments then the criterion would have been triggered and an assessment should have been undertaken. The guidance needs to be clear on when exactly in-combination assessment would be triggered. Taking the DMRB criterion as it stands, if for example a development led a traffic increase of 1 vehicle per day on a road, but there were impacts of 1000 vehicles per day from other projects/plans, would this require an in combination AQ assessment for example? This would seem to be highly disproportionate and place a large and unnecessary burden onto the specialists. Whilst in combination effects need to be considered, surely there should be some sort of screening criteria as to when they need to be considered above the impact of the development in isolation.</p>	<p>Amendment made: ‘<i>The implication of the Wealden Judgement, summarised in Box 3.1, means that it is no longer appropriate to scope out the need for a detailed assessment of <u>an individual project or plan</u> using the <del>established thresholds</del>, for example, the 1000 annual average daily traffic (AADT) <u>increase</u> in the Design Manual For Roads and Bridges (DMRB)<sup>23</sup> or the 1% of the critical level or load used by Defra/EnvironmentAgency<sup>24</sup>, without first considering the in-combination impact <del>of</del> <u>with</u> other projects and plans. <del>As a result, This position has been adopted</del> by Natural England <del>has published</del> in its internal guidance for competent authorities assessing road traffic emissions under the Habitats Directive<sup>25</sup>.’</i></p> <p>The text reflects the current legal position and that of Natural England, even though this will seem to be disproportionate on some occasions. During the screening stage, an effect is likely “<i>if it cannot be excluded on the basis of objective information</i>”. This is not defined anywhere. Case law suggests that even if only one vehicle is generated by the development, it would have to be considered in-combination with other project and plans, in the case of sites with a European designation. The DMRB screening criterion of 1,000 AADT <i>can</i> be used for the in-combination impact. There are some IAQM</p>

	members who feel this is not sufficiently precautionary, but until this is challenged in the courts, this is IAQM's position.
<p>4.11 – States that the impact on the integrity of the designated site is the job of the ecologist.</p> <p>Comment – To be useful, some guidance needs to be given to the ecologist on how this could be achieved. In my experience of working with a number of ecologists in our organisation and in external organisations this is not understood. There are documents that could be used to make a judgement on whether the impacts are significant. For example, guidance could reference Natural England's dose response work (publications.naturalengland.org.uk/file/6431114569711616) as a way of comparing a numerical impact against a numerical value to determine the impact. I would suggest that for the guidance to be useful an approach to determining whether the increase in N deposition are significant or not needs to be advocated.</p>	<p>4.11 actually states that the assessment of <i>effects</i> on the integrity of the site is the job of an ecologist, which is correct. A core principle of the document is that the air pollution <i>impacts</i> are determined by the air quality specialist and the <i>effects</i> by the ecologist. Furthermore, it is the <i>effects</i> that are judged to be significant or not; quantifying the impacts is a step towards making this judgement. As the document states, it is our intention to produce a joint document with CIEEM in the future that will assist ecologists in this process.</p>
<p>5.2.6 – <i>Relevant projects and plans to be considered include those that may have been approved but are, as yet, incomplete (e.g. a committed development), the subject of an outstanding appeal, or ongoing review. The air quality specialist and ecologist should liaise with each other and the regulator to agree the list of relevant projects and plans.</i></p> <p>Comment- I suggest this is outside of the scope of the AQ specialist and the ecologists; it needs to be completed by the competent person, which will be from the traffic team. I have concerns however that what the guidance is suggesting is not achievable or proportionate. Even if this type of assessment could be undertaken, a development with a relatively low number of traffic induced movements could potentially trigger a significant impact (although no metric is provided to understand what this is) with no means of mitigating, as the impacts are due to developments that have already been consented and would form part of the future regardless of the development.</p>	<p>Amendment made: <i>'Relevant projects and plans to be considered include those that may have been approved but are, as yet, incomplete (e.g. a committed development), the subject of an outstanding appeal, or ongoing review. The air quality specialist and ecologist should liaise with each other and the regulator to agree the list of relevant projects and plans. <u>This information may also reside with other specialists in the wider assessment team, such as transport or planning. Ultimately, for European sites, a decision on the inclusion of other projects or plans is the responsibility of the competent authority.</u></i></p>
<p>5.4.1.10 – <i>For projects/plans that generate road traffic, the dispersion modelling will estimate the PEC "without the project/plan" (i.e. the future baseline) and PEC concentrations "with the project/plan". The PC is derived</i></p>	<p>Amendment made: <i>'For projects/plans that generate road traffic, the dispersion modelling will estimate the PEC "without the project/plan" (i.e. the future baseline) and PEC concentrations "with the project/plan". The PC is derived by subtracting one</i></p>

<p><i>by subtracting one from the other. This approach enables the future decline in road traffic NOx emissions per vehicle km to be taken into account.</i></p> <p>Comment - This paragraph seems to suggest that the assessment is undertaken by utilising the situation that would occur in the future, which includes future developments compared against the situation with the development. This appears to be consistent with the current approach used in air quality assessments but does not seem to address in combination effects.</p>	<p><i>from the other. This future baseline typically takes account of the traffic from other project/plans. To calculate the in-combination PC another scenario will need to be modelled. This may use the baseline traffic data with future emission factors to provide a future baseline PEC. This approach enables the future decline in road traffic NOx emissions per vehicle km to be taken into account.'</i></p> <p>This is explaining how the project PC is calculated. We have added text to explain how the in-combination PC is calculated.</p>
<p><i>5.4.1.19 – Transport consultants often do not provide separate data to enable the impact of the other projects or plans to be explicitly estimated; however, a decision maker may require this to be assessed so they can review the impact of the project/plan alone and in combination with other projects/plans. It is therefore important for the air quality specialist to consult with the decision maker and transport consultant at the earliest opportunity.</i></p> <p>Comment - If the AQ professional consults NE I would suggest it is highly likely they will always ask for in combination effects. However, this guidance needs to set out how this would be practicably achieved in relation to development control. Have IAQM consulted for example with traffic modellers to determine whether this is possible? I see this as a big issue which needs to be addressed in the guidance. Potentially this guidance is requiring multiple model runs to take out various developments out of traffic models. If this is what is being advocated the guidance needs to be clear on how this would be undertaken and what would be done with the answer once the assessment has been undertaken.</p>	<p>The document can only state what the current legal position is and that of Natural England. Traffic modellers and air quality specialists have to work together to provide the best possible information that can inform an in combination assessment, recognising that it will be imperfect in some cases.</p>
<p><i>6.9 – For ammonia emissions, it is more difficult to be certain regarding future trends, and it seems reasonable to either assume no change or to assume that emissions will change in line with the requirements of the 2016 National Emissions Ceiling Directive.</i></p> <p>Comment - Is the guidance suggesting that ammonia should be assessed, if so, how, as there are no ammonia vehicle emission factors?</p>	<p>Paragraph 6.9 relates to the overall burden of ammonia pollution and references the national policies designed to reduce ammonia emissions, which are mostly agricultural in origin. Coincidentally, it is reasonable to assume that the contribution from the national vehicle fleet in the near future will remain similar to that of today, since there is no compelling evidence to the contrary.</p>
<p><i>6.12 – Additionally, if the ecologist concludes that there is no likely adverse effect on the integrity of the designated site no mitigation would be required. Given the likelihood that many Local Plan air quality assessments will identify an overall net improvement in air quality over the plan period, the contribution of the individual Local Plan(s) will often be in the form of</i></p>	<p>If an assessment concludes that some form of action is required to mitigate the impacts of the Local Plan causing retardation of improvement, then it is likely that such measures will be similar to those recommended to address deterioration. Whether this will be necessary is a matter of judgement and not a prescribed formula.</p>

<p><i>potential retardation in improvement (i.e. a delay), rather than a deterioration. That is an important distinction in making judgments on adverse effects, although it may still be appropriate (depending on the scale of that delay) to introduce measures to address the plan contribution.</i></p> <p>Comment - Suggest some sort of guidance is needed to inform this?</p>	
<p><b>Anonymous</b></p>	
<p>The guidance highlights the importance of in-combination effects but lacks description in how these should be considered in a way that does not place an unnecessary burden onto specialists and the developer. In particular:</p> <ul style="list-style-type: none"> <li>• What datasets (e.g. specific traffic scenarios) would be required to assess in-combination effects from traffic associated with other plans/projects.</li> <li>• How should the in-combination effects be screened into an assessment without generating unnecessary work (e.g. if a development alone led to a traffic increase of 1 vehicle per day on a road, but there were impacts of 1000 vehicles per day from other projects/plans would this require an in-combination assessment?)</li> <li>• How would the significance of in-combination effects be determined in a way that is fair to the developer (e.g. what happens in a scenario where the significant air quality effects are predominantly due to other plans/projects and not the development alone?)</li> <li>• There is a lack of detail on how ecologists can turn the numerical air quality data provided by the air quality specialist into a judgement of significance. Ecologists rarely understand how to interpret the air quality data and use it to determine effects on habitats. This guidance is an opportunity to provide prescriptive advice on this matter.</li> </ul>	<p>In cases where a European site is potentially affected, the legislation requires the consideration of the project alone and in combination with other projects and plans. This is an unavoidable task and, if not completed, there is a risk of the assessment being rejected and/or subject to legal challenge, even in circumstances where an individual project is contributing a small impact and a much smaller impact than the other sources.</p> <p>There is no explicit legal requirement to consider the in-combination or cumulative impacts where a European site is not involved, although the NPPG (paragraph 175) implicitly includes the need for in-combination effects of new development on SSSIs to be assessed. The June 2018 NE guidance states “<i>This guidance does not specifically cover nationally significant sites such as Sites of Special Scientific Interest (SSSIs), which are covered by a different regulatory framework. However, the general principles for air quality assessment outlined here for European Sites are likely to be equally relevant for this and other designations</i>” .</p> <p>This document is, by design, intended to be used by air quality specialists and is limited to the quantification of air quality impacts and the screening of projects on the basis of being not having significant effects. It is hoped that a document can be published jointly with CIEEM in the future that will address the significance of effects, and thereby assist ecologists in making this judgement.</p>
<p><i>5.2.6 Relevant projects and plans to be considered include those that may have been approved but are, as yet, incomplete (e.g. a committed development), the subject of an outstanding appeal, or ongoing review. The</i></p>	<p>Amendment made: addressed typographical error.</p>

<p><i>air quality specialist and ecologist should liaise with each other and the regulator to agree the list of relevant projects and <b>plans and plans</b> (note this paragraph has a typo, as plans mentioned twice, highlighted in bold)</i></p> <p>Comment: In order to avoid unnecessary work, further guidance should be provided as to which types of plans and projects should typically be included, and how they would be established. e.g. could a distance criterion be applied to rule out other projects/plans?</p>	<p>There is no obvious means of excluding projects and plans on the basis of their proximity to the designated site. Some projects or plans will exert an influence over a wide area, whereas others will not. For European sites, the competent authority will need to agree which projects or plans should be considered.</p>
<p><i>5.2.7 It is important that the assessor considers the potential for in-combination impacts of plans and projects resulting from all relevant sources of emissions where there could be an overlap of air quality impacts.</i></p> <p>Comment: This could be subjective and above all extremely time consuming to identify every potential additional source of pollution, let alone quantify it. The air quality specialist, ecologist or regulator would not have this information and an extensive review would be required to compile it. This seems an unrealistic expectation.</p>	<p>This paragraph is intended only as a reinforcement of the overall principle that in combination impacts should be quantified, recognising that there may be multiple new sources that could affect the designated site. In some cases, the influence of new projects or plans will be captured within the estimates of future background concentrations.</p>
<p><i>5.2.11 The impacts from different pollutants also need to be considered, i.e. the impact on nitrogen deposition of nitrogen derived from NO<sub>x</sub> and NH<sub>3</sub>. For example, the NH<sub>3</sub> contribution from agricultural activities may need to be considered together with NO<sub>x</sub> emissions from road transport.</i></p> <p>Comment: Can some guidance be provided as to when NH<sub>3</sub> may need to be considered? e.g. if next to a permitted activity? For a road through an agricultural area, when would NH<sub>3</sub> need to be considered and how would it be quantified, it's highly unlikely the AQ specialist would have sufficient information to be able to quantify the NH<sub>3</sub> emissions from agricultural activities without knowing specifically what activities were occurring, where they were occurring and when?</p>	<p>Amendment made: '5.2.11 The impacts from different pollutants also need to be considered, <del>i.e.</del> such as the impact on <del>nitrogen</del> deposition of nitrogen derived from NO<sub>x</sub> and NH<sub>3</sub>. For example, the NH<sub>3</sub> contribution from agricultural activities may need to be considered together with NO<sub>x</sub> <u>and NH<sub>3</sub></u> emissions from road transport.'</p> <p>The text is encouraging assessors to recognise multiple sources of pollutants where these are obvious. It may not be straightforward in all cases to quantify these contributions to the overall impact, but their existence can still be acknowledged. Providing guidance that addresses all possible scenarios is unrealistic.</p>
<p><i>5.2.12 Where the impact of an isolated source meets the regulator's screening threshold (see later in this chapter) on its own and there will not be an in-combination effect with other projects or plans, the screening criterion can be used on the project alone. Defining an 'isolated source' precisely is not possible, and it is a matter for an experienced air quality specialist to use their professional judgement in consultation with the</i></p>	<p>Amendment made: 'Where the impact of an isolated <del>source</del> <u>project</u> meets the regulator's screening threshold (see later in this chapter) on its own and there will not be an in-combination effect with other projects or plans, the screening criterion can be used <u>for</u> <del>on</del> the project alone. Defining an 'isolated source' precisely is not possible, and it is a matter for an experienced air quality specialist to use their professional judgement in</p>

<p><i>regulator. If there is any doubt, it should be assumed that there may be an in-combination effect.</i></p> <p>Comment: Clarify what is meant by an isolated source? Do you mean the impact of the specific development/activity being assessed alone?</p>	<p><i>consultation with the regulator. If there is any doubt, it should be assumed that there may be an in-combination effect.'</i></p> <p>The definition of an 'isolated project' is provided in the Glossary. The paragraph refers to the application of the screening criterion to the case where a project can be considered alone and without other projects or plans and is making the point that this may not always be a straightforward definition.</p>
<p><i>5.3.11 The 2017 Wealden judgment<sup>43</sup> (see Box 3.1) has clarified that, if the DMRB screening criteria are used, they should be used to screen in-combination impacts as well as the project/plan alone.</i></p> <p>Comment: When exactly would an in-combination assessment be triggered by the DMRB screening criteria? If a development led a traffic increase of 1 vehicle per day on a road, but there were impacts of 1000 vehicles per day from other projects/plans would this require an in combination AQ assessment for example? This would seem to be highly disproportionate and place a large and unnecessary burden onto the specialists. Whilst in combination effects need to be considered, surely there should be some sort of screening criteria as to when they need to be considered above the impact of the development in isolation. e.g. if the development traffic increase was close to the 1000 criterion, then in combination effects should be added on, otherwise they should be ignored as the impacts of the development are unlikely to be significant even in combination.</p>	<p>The text reflects the current legal position and that of Natural England, even though this will seem to be disproportionate on some occasions. During the screening stage, an effect is likely "if it cannot be excluded on the basis of objective information". This is not defined anywhere. Case law suggests that the even if only one vehicle is generated by the development, it would have to be considered in-combination with other project and plans.</p>
<p><i>5.4.2.3 The air quality specialist may choose to assume no change in future baseline concentrations or deposition rates, where there is no evidence to indicate that they may decrease in value. This may be appropriate if, for example, the project/plan under consideration is likely to be completed within a relatively short period of time (one or two years in the future). If there is a long lead-in period (due to construction and/or commissioning periods), it may be more appropriate to reduce future baseline concentrations/ deposition rates to allow for anticipated improvements in national emissions.</i></p> <p>Comment: Can guidance be provided as to what rate of improvement in baseline concentrations/deposition rates should be assumed (e.g. Annex F of DMRB Air Quality guidance assumes 2% per year)</p>	<p>The document cannot give a simple guide to future trends in baseline concentrations or deposition rates, as they will vary for different circumstances. The document also reminds the reader that 2% decrease cited in Annex F of DMRB should not be used.</p>

<p><i>5.5.1.9 For all types of project/plan, if the air quality specialist identifies that the impact is sufficiently large (alone and/or in combination) that it cannot be screened out and therefore it could have a potential significant effect, the information should be passed to the ecologist to use their expertise to determine whether or not there is, in fact, a likely significant effect of the project or plan on the habitat, and, if so, whether for European Sites it is possible to ascertain that there will be no adverse effect on the integrity of the site and for other types of designated sites, no likelihood of damage.</i></p> <p>Comment: There is a lack of guidance available to ecologists on when air quality effects on a habitat would be significant. Ecologists lack the training, confidence and technical knowledge to make this judgement, and without prescriptive guidance, there is likely to be a large degree of variation between ecologists in terms of professional judgement. Further advice is required on this matter and it's disappointing that this issue has not been addressed by this guidance.</p>	<p>The document has deliberately not provided guidance for ecologists on assessing the significance of effects. As explained elsewhere, it is intended to provide guidance for air quality specialists on the quantification of impacts and the non-significance of effects where impacts are sufficiently small.</p>
<p><i>5.5.4.1 The interim methodology does not consider the emissions of NH<sub>3</sub> from road vehicles.</i></p> <p>Comment: How could NH<sub>3</sub> emissions be considered given the lack of recognised NH<sub>3</sub> road traffic emission factors</p>	<p>The reference to NH<sub>3</sub> emission in this paragraph is to the DMRB methodology only and is merely an observation that there may be a missing contribution to N deposition from this source. An assessor would need to derive NH<sub>3</sub> emission factors from the literature if this omission were to be rectified.</p>
<p><i>6.11 Assessing the results of both the 'alone' and 'in combination' assessments, it is possible to identify the relative contribution of the Local Plan being assessed. This is necessary if the ecologist concludes that there is an adverse effect on the integrity of the designated site to enable the appropriate scale of mitigation measures that may be needed (such as transport management plans, rerouting of heavy duty vehicles.). If, for example, the Local Plan makes little or no difference to the nitrogen deposition when reported to the limits of reliability then little or no action would be specifically required to address the contribution of that Local Plan.</i></p> <p>Comment: There is a lack of clarity over how the significance of effects and mitigation requirements should be identified 'alone' and 'in combination'. What happens in a scenario where the significant air quality effects are predominantly due to other projects/plans and not the development alone, it seems to place an unnecessary burden on the developer to mitigate the air</p>	<p>The assessment of significance of effects on the integrity of habitats and the possible requirement for mitigation is outside the scope of this document. As stated elsewhere, it is confined to the quantification of air pollution impacts and identifying non-significant effects.</p>

<p>quality effects associated with other development. This goes against the polluter pays principle.</p>	
<p><b>Matt Stoealing – Isopleth</b></p>	
<p>There are a few differences between guidance sources and I don't think that these have discussed. The EA thresholds (for both screening distance and impact) appear to be the ones most quoted in the report but even the EA has different values. NRW in particular has some differences from these. For example:</p> <ol style="list-style-type: none"> <li>NRW (December 2018) <i>Assessing the impact of ammonia and nitrogen on designated sites from new and expanding intensive livestock units. Technical guidance for determining environmental permit applications or responding to planning application consultations.</i> Reference number: GN020</li> <li>NRW (March 2017) <i>Assessment of ammonia and nitrogen impacts from livestock units when applying for an Environmental Permit or Planning Permission.</i> Reference number: OGN 41</li> <li>Shropshire Council Interim Guidance Note GN2 (Version 1, April 2018). <i>Assessing the impact of ammonia and nitrogen on designated sites and Natural Assets from new and expanding livestock units (LSUs).</i></li> <li>Environment Agency: <a href="https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit">https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit</a></li> </ol> <p>In the above cases the EA screening distance for SSSI's is either 5km and below it is 2km: The thresholds maybe between 1 and 8% for the Welsh sites (NRW020) and are variable for the EA.</p>	<p>Amendment made: <i>'5.3.12 The Defra/Environment Agency's Air emissions risk assessment for your environmental permit (which applies to industrial emission sources) currently identifies distances of 2 km for local and nationally important sites and areas of ancient woodland, and 5, 10 or 15 km depending on the emission source for European Sites. Smaller industrial facilities or waste sites may not require such a large study area. Different distances apply for agricultural emissions. The air quality specialist should check first with the relevant regulator/SNCO what distances apply as they can vary. <u>Different regulators throughout the United Kingdom have different criteria in some cases, most notably for livestock and ammonia emissions.</u>'</i></p> <p>The differences between the EA guidance and the DA guidance have been addressed in Chapter I, where it is now noted that the DA rely generally but not exclusively on the EA guidance. Sentence added to highlight this point, although it is not possible to list all of these variations and exceptions.</p>
<p>In my experience, there appears to be disagreement in the regulations and the position of regulators regarding application of the 1ug/m3 ammonia critical level. To me it is very clear that, if epiphytes / bryophytes are a reason for the designation of a site (i.e. integral to it) then the 1ug/m3 ammonia critical level must be applied. If the citation / designation <u>does not</u> mention that epiphytes / bryophytes are a reason for the designation of a site (i.e. integral to it) then the 3ug/m3 ammonia critical level must be applied. Regulators are applying 1ug/m3 whether epiphytes / bryophytes</p>	<p>Amendment made: <i>'D.6.2 The direct uptake of NH<sub>3</sub> through the stomata increases the amount of nitrogen within the plant. In addition, its alkalinity adversely affects plant biochemistry; lichens and bryophytes are particularly sensitive to this effect<sup>95</sup>. Ammonia also reacts in the atmosphere to produce ammonium ions (NH<sub>4</sub><sup>+</sup>) which contribute to nutrient nitrogen and acid deposition. Higher plants are considered to be less sensitive and, for this reason, the annual critical level for higher plants is 3 µg/m<sup>3</sup> but is reduced to 1 µg/m<sup>3</sup> where</i></p>

<p>are mentioned or not, noting that it may be an omission. Your section D.6.2 states that:</p> <p><i>D.6.2 .... Higher plants are considered to be less sensitive and, for this reason, the annual critical level for higher plants is 3 µg/m<sup>3</sup> but is reduced to 1 µg/m<sup>3</sup> for lower plants (lichens and bryophytes, including mosses, landworts and hornworts)</i></p> <p>I think that it would be useful for both assessors and regulators to add a point of clarification on this final part of the sentence. What constitutes whether where lower plants (lichens and bryophytes, including mosses, landworts and hornworts) are a particular interest feature of a habitat?</p>	<p><i>lower plants (lichens and bryophytes, including mosses, landworts and hornworts) are a particular interest feature of a habitat. <u>It is the ecologist's role identify the presence of these lower plants.</u></i></p> <p>The decision regarding the presence of epiphytes/bryophytes is one that the ecologist will make and therefore it is not for this guidance to dictate which critical level to apply. The document currently refers to both being valid, depending on circumstances.</p>
<p>Most of the UK experiences nitrogen deposition above the critical loads and ammonia concentrations above the critical level. This currently means that many sites cannot be as sensitive as the limits suggest – should the approach also take account of the existing levels in some way? For example, if a stated N critical load is 10 and APIS states that the background is currently 40 (as was in a recent case that I worked on) but that the woodland was in good condition, then how should this be addressed discussed / addressed?</p>	<p>It is not for IAQM to contest the current values for critical loads or critical levels; these are a matter for the ecological community and regulators. We would observe, however, that there is evidence of harm occurring at deposition rates below the critical load in some instances. These effects can be subtle and not apparent for a long time.</p>
<p>The draft report states that 'In combination' effects should include those in the public domain. Shropshire (for example) has a very strict in-combination screening approach which includes schemes that may not be in the public domain and may not even come forward (sites for which only a pre-app screening has been undertaken).</p>	<p>The assessor can only include those plans or projects for which there is reasonable knowledge and information. Projects and plans in the public domain meet this test. In the case of European sites, the competent authority will need to agree those projects and plans included in the assessment and these discussions will be an opportunity to highlight any projects or plans not yet in the public domain.</p>
<p>Table 5.1 Deposition velocities (after AQTAG). Dry deposition velocities: The EA has stated that the DD velocity may be adapted based on the existing background. Guidance attached (Guidance on modelling the concentration and deposition of ammonia emitted from intensive farming). It would also be useful to add a deposition velocity for water bodies as these are often the European sites which fall into a screening area. I have seen 0.005 successfully applied in the case of ammonia, for example.</p>	<p>The document is intended primarily as a guide to the principles that should be adopted when quantifying air quality impacts, rather than a complete manual of how to conduct the modelling, for which other sources are available. The main point being made in reference to deposition velocities is that the AQTAG values are preferred to the DMRB values. In special cases, such as deposition to water bodies, the assessor can derive suitable values, noting that there are very few types of water bodies for which critical loads apply. Eutrophication in many cases is governed by the availability of phosphorus.</p>

<p><b>Prof Duncan Laxen – Air Quality Consultants</b></p>	
<p>Chapter 4: greater clarity should be provided on the requirements under the Habitats Directive. It may be helpful to separate Habitats Directive sites and other sites in the discussion.</p>	<p>After consideration of this point, no change has been made, because the purpose of the document is not to explain the Directive and the distinction between European sites and other sites is made consistently throughout the document.</p>
<p>Box 4.2: It is important to make clear that the screening stage for Habitats Directive sites should not take account of mitigation, in accordance with one of the recent legal judgements (People over wind). This is not mentioned, but should be in the Box</p>	<p>Amendment made: [new bullet point 7]: <u><i>‘The change in the case of European sites should be quantified for the project without taking into account mitigation.’</i></u></p> <p>Added footnote to bullet point, as follows: <u><i>‘Mitigation is generally considered to be any additional measure to reduce or remove emissions, or diminish their impacts, above and beyond those that would be expected to be present as part of a proposal or project design. See also paragraph 3.7.’</i></u></p>
<p>4.4: This is headed ‘The ecological assessment’ but it is unclear whether it is discussing the ‘screening’ or the ‘appropriate assessment’. This distinction is critical.</p>	<p>Amendment made: Add new paragraph 4.4.2: <u><i>‘For European the next formal stage is the completion of an HRA. This is largely undertaken by an ecologist.’</i></u></p> <p>Paragraph 4.4.1 clearly refers to an assessment taking place <i>after</i> screening for effects brought about by air quality impacts has taken place. The sole function of Section 4.4 is to remind readers that the overall assessment could include the contribution from ecologists. At some future date, it is hoped that a document will be produced jointly with CIEEM that will describe the ecological part of the assessment in much greater detail.</p>
<p>4.4.4: The first sentence is wrong. A ‘likely significant effect’ comes at the screening stage, and mitigation is not to be discussed at this stage. The text implies mitigation should be included in the screening stage. We should also use the correct language for the test under an appropriate assessment, which is ‘an adverse effect on the integrity of the site’ – it currently just says ‘adverse effect’.</p>	<p>Amendment made: <i>‘4.4.4 If the ecologist identifies a likely significant effect or, for European Sites, <del>potential</del> an adverse effect on the integrity of the site, then mitigation and emission control measures need to be explored. These measures may include the need for changes to the project to avoid or reduce the air quality impact and this should be discussed with the air quality specialist, who may need to liaise with other members of the project team, such as the transport consultant or the process engineer designing the installation.’</i></p>

<p>5.2.10: It would be helpful to make clear at the end that the impacts should take account of other sources. I have seen assessment where people only add the concentrations due to the permitted site emissions to the background concentrations and ignore the combined concentrations with emissions from individual roads within the impact area. You could add at the end of the para <i>'It is nevertheless important to consider whether there will be combined impacts of the emissions from the site to be permitted with those from traffic on the existing local road network.'</i></p>	
<p>5.2.11: It would be helpful to make clear that NH<sub>3</sub> comes from road transport: Please reword the last sentence to say 'For example, the NH<sub>3</sub> contribution from agricultural activities may need to be considered together with the NO<sub>x</sub> and NH<sub>3</sub> emissions from road transport'.</p>	<p>Amendment made: Already addressed in other section.</p>
<p>5.3.6: Not sure the last sentence is clear enough. I know what it means but it is not explicit. Suggest it is changed to: 'For strategic planning and larger projects, where changes in traffic flow are likely to take place over a wide network of roads, then it will be appropriate to jointly model the impacts from all road links, even for locations beyond 200 m from the individual roads.'</p>	<p>Amendment made: <i>'For strategic planning, where <del>large development</del> substantial changes in traffic volumes are being considered, there is the potential for wider-scale impacts, which can potentially affect the future background concentrations, as well concentrations within 200m of individual roads within the affected network. In these circumstances, the modelling may need to encompass a large road network.'</i></p>
<p>5.3.10: The last sentence is wrong, where it says: '... in the absence of any other thresholds.' There are IAQM criteria, and these must be mentioned.</p>	<p>Amendment made: <i>'5.3.10 The DMRB provides a series of traffic screening criteria. These include the change in AADT flows on a given road of 1000 vehicles or 200 heavy duty vehicles (HDVs)<sup>42</sup>. These thresholds have been widely used to screen out the need for quantitative assessment of projects/plans in the absence of any other <u>thresholds recognised as being applicable in this context</u>'</i></p> <p>The definition of any thresholds for traffic flow is somewhat arbitrary for these purposes. In practice, the assessor needs to identify any change in traffic flow that might give rise to an impact of note, alone or in combination. The latter, in particular, may involve some small changes in traffic flow. For cases where the project can be assessed alone, The DMRB thresholds are consistent with a scale of impact that <i>may</i> lead to an effect that is worthy of consideration by an ecologist.</p>
<p>5.4.1.13: Says '<i>... not made closer than 1-2 m from the edge of a road.</i>' Unfortunately, it is not helpful in guidance to be ambiguous. There can be a big difference between 1 and 2 m in NO<sub>x</sub> concentrations, so there would be</p>	<p>Amendment made: <i>'5.4.1.13 Concentrations should not, however, be predicted too close to the roadway, since such predictions can be unreliable and may not represent areas of relevance to the assessment. It is</i></p>

<p>lack of consistency in the approach between different practitioners. I would be happier if it said not closer than 1 m.</p>	<p><i>recommended, for example, that predictions are not made closer than 1-2 m from the edge of a road.'</i></p>
<p>5.4.2.6: It is wrong to imply that the government commitment to use additional measures to deliver the EU LV for NO<sub>2</sub>, will help ensure levels go down in areas within SACs. SACs are generally away from places where the LV is exceeded. So a measure to tackle a LV exceedance will not directly help reduce NOx and Ndep across a SAC. Indeed, the converse could be true, as many Clean Air Zones involve the introduction of Euro VI buses. This will lead to more use of Euro IV and V buses in rural areas as they are removed from central urban areas, which could increase NOx and Ndep across a SAC. I would suggest the second and third sentences are deleted.</p>	<p><i>Amendment made: '5.4.2.6 The Netherlands case also clarifies that a mechanism must be in place to ensure that the expected reductions take place. In the UK, the Government has published a Clean Air Strategy, which aims to set out the mechanisms by which the target of a 73% reduction in NOx emissions will take place by 2030 (relative to a 2005 baseline). This will ensure compliance with the National Ceilings Emission Directive. The strategy also includes a target for the reduction of deposition of reactive forms of nitrogen in England's protected priority sensitive habitats. <del>reductions in NO<sub>2</sub> are being monitored by central government under the UK plan to reduce roadside NO<sub>2</sub> concentrations to comply with the annual-mean EU Limit Value. Central government is committed to the use of additional measures if the EU limit value for NO<sub>2</sub> is not delivered according to the current timescale. Air quality specialists may wish to refer to the IAQM's Position Statement on 'Dealing with Uncertainty in Vehicle NOx Emissions within Air Quality Assessments' for further information<sup>57</sup>.</del></i></p>
<p>5.5.2.4: This must now be wrong. It was published before the clarification on in-combination assessments. As worded, it implies that as long as the PC is &lt;1% then it does not need to be included at the screening stage. This runs counter to the Wealden judgement. By citing it, IAQM is supporting this approach, which is not legal. Either delete the para or tell the reader it is wrong.</p>	<p><i>Amendment made: '5.5.2.4 In March 2015, AQTAG clarified to the Planning Inspectorate that 'For installations other than intensive pig and poultry farms, AQTAG is confident that a process contribution (PC, as predicted by H1 or a detailed dispersion model) &lt; 1% of the relevant critical level or load (CL) can be considered inconsequential and does not need to be included in an in combination assessment<sup>66</sup>.'</i></p> <p><i>'5.5.2.5 AQTAG has also drawn a clear distinction between 'projects and plans considered to be inconsequential and never likely to have an in-combination effect (and so not included in any assessment of likely significant effect in-combination with a new plan or project)' and those concluded to have 'no likely significant effect' (insignificant alone but which may need to be considered in the assessment of any other new plans or projects)<sup>67</sup>.'</i></p> <p><i>[New] '5.5.2.6 These recommendations made by AQTAG were made prior to the most recent court rulings. This advice may change in the future and alter the circumstances in which the screening criteria can be used with confidence. This is why it is important to consult with the relevant regulator.'</i></p>

<p>6.8: The last sentence says baseline reductions should improve air quality in the future. This is correct, but it is important that this should not imply a headroom to add pollution to get back up to current unacceptable levels. It would be helpful to add a sentence to this effect at the end of the paragraph. Also, care should be taken when projecting 'government' initiatives. Reference 70 refers to the announcement of no new diesel or petrol sales from 2040. There can be no certainty that this will actually come into effect, so on the basis of the recent judgement in the Netherlands it should not be included as a 'certain' improvement. Suggest adding to the last sentence '... traffic flows (but it will be important to recognise the need for 'certainty' in these projections, following the recent judgement in the Netherlands (see Box 3.2))</p>	<p>Amendment made: Delete footnote 70</p> <p><i>'6.8 Importantly, the air quality calculations should also make reasonable assumptions about expected changes in the baseline NO<sub>2</sub> concentrations over the plan period; given the 15 to 20 year or so timescale of most Local Plans. To assume no improvement over a 15 or 20 year period, would effectively <del>assume that air quality at nature conservation sites will deteriorate substantially in the future, which is not considered valid given</del> ignore the more stringent legal requirements for vehicle NO<sub>x</sub> emission standards to be achieved under real world driving conditions, trends in new vehicle registrations and ongoing government and international initiatives to improve air quality through reductions in emissions"<sup>70</sup>. Making a suitable allowance for improvements in baseline air quality <del>can</del> (given the long timescale of most Local Plans) <u>will</u> mean that overall air quality at the end of the plan period is very likely to be better than air quality at the start, even allowing for the effects of Local Plan growth on traffic flows. <u>It should be noted that there is no presumption that this improvement can be exploited for allowing unacceptable air quality impacts, with consequent effects on designated sites.</u>'</i></p>
<p>Chapter 7: This chapter is missing the principle of carrying out a thorough assessment supported by detailed evidence, as covered elsewhere in the guidance. It should be added as a fourth principle. The assessment should be proportionate.</p>	<p>Amendment made: <i>'7.1 There are a number of principles that should be applied when undertaking assessments of the air quality impacts on designated sites, which are set out below.</i></p> <ol style="list-style-type: none"> <li><i>1. Suitably qualified, experienced and competent assessors should be responsible for the assessment.</i></li> <li><i>2. A precautionary approach is required</i></li> <li><i>3. The assessment should be appropriate to the risk and sufficiently detailed to enable a robust conclusion to be made</i></li> <li><i>4. The overall assessment should ideally be undertaken in partnership with a suitably qualified and experienced ecologist.</i></li> <li><i>5. Always consult with the regulator.'</i></li> </ol>
<p>7.2, 7.3 and 7.9</p>	<p>Amendment made: <i>'7.2 "<del>The first is that</del> All assessments..."', 7.3 "<del>The second principle is that</del> Where there is ..., 7.9 <del>The third principle for</del> The assessment of the impact of air pollution on designed wildlife sites <del>is that it is best undertaken ..."</del></i></p>

7.4 and 7.5: Make clear that this is a quote by italicising the quoted text. Otherwise it looks like it is made up by IAQM.	Amendment made: Italicise bullet points.
7.6: I am not convinced that 'the assessment should be proportionate to the risk of an adverse effect' is an appropriate statement to make in light of recent judgements. Is this paragraph meant to be IAQM's view? I don't think we should be saying this given the current legal uncertainty.	The IAQM's view is that the scale of any assessment should be proportionate to the risk of an adverse effect and that this is not contrary to recent judgements, provided that a conclusion is defensible.
7.7: This should be deleted as it is the same point as made in 7.6 (except one says 'proportionate' the other says 'proportional').	Amendment made: <i>'7.6 This would suggest that a degree of pragmatism should use be used because absolute scientific certainty is rare. That is the nature of scientific endeavour. It often takes decades for scientific doubt to be satisfied. (Climate change is such an example). It also suggests that the assessment should be proportionate to the risk of an adverse effect.'</i>
7.6 and 7.7: I suggest that both of these paragraphs are deleted.	See above...
<b>Ben Marner – Air Quality Consultants</b>	
Defining the spatial and temporal scale for assessing in-combination effects is a fundamental difficulty in carrying out assessments, and one of the main discrepancies between different assessments. As explained below, the draft guidance is not considered sufficiently clear on the issues that should be considered or the approach that should be taken.	No response required
Reference is made (Paragraphs 5.2.4 and 5.2.6) to listing relevant plans and projects that are in the public domain and also to using TEMPRO (para 5.2.8). Producing a thorough and complete list of plans and projects for a small area is difficult. Producing such a list for a sufficiently large area may be impossible. To take a flippant example, air quality modellers all know that including a single car on a road in Cornwall within a dispersion model has the potential to cause a change (albeit an infinitesimally small one) in predicted concentrations in Aberdeen. One argument is thus that a complete assessment of in-combination effects can only be achieved through a complete national emissions inventory.	The document states that any assessment should be proportionate (see Box 1.1. and Section 7), whilst ensuring that the assessor agrees the plans and projects to be included with the competent authority.
Without defining the spatial scale over which in-combination plans and projects should be considered, the guidance will only serve to provide	IAQM is cognisant of the possibility that the requirement to include all relevant plans and projects could generate large and unwieldy modelling exercises. On the other hand, there is no obvious means of (re)defining this

<p>nominal support for what different practitioners are currently doing, rather than guiding and harmonising current approaches.</p>	<p>requirement so that it is more amenable to modelling. As noted elsewhere, the inclusion of relevant plans and projects is ultimately determined by the competent authority for European sites.</p>
<p>The issue of defining the spatial scale for in-combination plans and projects is noted for local plans (Paragraph 6.3), but it is unclear why the issue is specific to local plans and not also to individual developments (i.e. why should a local plan be assessed in-combination with a greater number of plans and projects than a small individual development should?).</p> <p>Paragraph 6.6 suggests that the in-combination effects of multiple local plans can be considered by aggregating groups of local authorities. It is unclear how this addresses the contribution of plans made by more distant authorities (i.e. those excluded from the group) or what happens to those authorities on the edge of an aggregated group.</p>	<p>Section 6 is concerned with local plans because these generate additional considerations relative to individual developments. The latter are much more likely to be 'self defined' in terms of their spatial scale of impact. Self evidently, local plans apply to an area represented by the local authority boundaries and across these boundaries into neighbouring authorities. Local plans allow for development over a long time scale and invariably include estimates of traffic growth over the road network. The commentary in paragraph 6.6 is a recognition that it will be sensible for multiple local authorities to collaborate when there is a prominent European site to consider. In making this suggestion, it is implicit that this will not be relevant in cases of individual projects or when sites of lesser status are potentially affected.</p>
<p>More fundamentally, the draft guidance makes the implicit assumption, without making clear that an alternative might be possible, that 'in-combination' has to refer to a <i>change</i>. Most air quality assessments carried out in the UK have considered the in-combination test as referring to a <i>change</i> from one scenario to another, and no alternative position was proposed in case CO/3943/2016 (Para 3.5 of the draft guidance). It is not, though, self-evident from the Habitats Directive that this has to be the case. It might be argued that an implication of Case C-142/16 (Para 3.5 of the draft guidance) is that in-combination effects are best considered by judging whether future pollution levels will harm the environment (e.g. comparing the total concentrations and fluxes against the critical levels and loads) rather than relating to any measure of change from one scenario to another.</p>	<p>The IAQM believes that an assessment, which is what the document is providing guidance on, will require the quantification of a change brought about by one or more developments. On this basis, no change has been made.</p>
<p><b>Screening Criteria</b> It is disappointing that IAQM continues to approve the use of the 1,000 AADT and 200 HDV screening criteria (e.g. para 5.3.10, with no mention of the IAQM criteria). Even a cursory comparison of the traffic flows on roads alongside monitoring sites, together with representative background concentrations is sufficient to show that significantly fewer than 1,000 vehicles per day can give rise to a NO<sub>x</sub> concentration increment greater than 0.3 µg/m<sup>3</sup> at the roadside; which is effectively the screening criterion presented elsewhere in the draft guidance. While these criteria might have</p>	<p>The IAQM does not 'approve' of these thresholds, as such. The document (at para 5.310) merely observes that they are the only recognised thresholds in use in this context. (The IAQM screening thresholds in the planning guidance serve a different purpose altogether.) The DMRB criteria are mentioned mainly in the context of their applicable use following the implications of the Wealden judgement. Insofar as practical screening criteria are concerned, there are none to speak of and the document is intended to guide assessors in the direction of</p>

<p>some basis alongside the Highways England Strategic Roads Network when assessing Highways England schemes, they should not be used in other cases. See also Paragraphs 2.14 to 2.16 of AQC's response to the 2017 consultation on this guidance.</p>	<p>screening out projects and plans on the basis of the scale of the air quality impact, rather than the size of the traffic source.</p>
<p>Paragraph 5.5.1.7 describes the use of these criteria to screen out the areas where no further assessment is required. Paragraph 5.5.1.7 then explains that these values should be used in a general sense rather than as precise values. It is difficult, in practice, to see how these two statements can be reconciled when dispersion models report their outputs to much greater levels of precision (even if the results are inaccurate). A screening threshold is a threshold and determining whether or not further assessment is required is a binary decision. Saying that it should be applied to rounded values simply allows a 50% increase in the effective threshold (i.e. raises the 1% threshold to 1.499%).</p>	<p>Paragraph 5.5.1.7 does not discuss the precision of a screening criterion, although paragraph 5.5.2.6 does. Screening is indeed a binary decision, but the text in paragraph 5.5.2.6 is there to remind the assessor that placing all the weight in this judgement on the model result relative to the criterion would be unwise. Taking all uncertainties into account, it may well be that there are circumstances where an impact that is quantified as 0.9% of the criterion value is worthy of further consideration as a potentially significant effect. As paragraph 5.5.2.7 notes, the screening criterion is not, of itself, a measure of harm, and the assessor has to make a judgement on whether harm is likely. This should not hinge on whether an impact can be defined as 0.9% or 1.1% of a screening criterion.</p>
<p>Arguments are presented supporting the use of the 1% and 10% criteria, but no arguments are presented against their use. Reviews carried out by Mark Sutton from CEH, who is who is a co-chair of the Task Force on Reactive Nitrogen of the UNECE Geneva Air Convention and who has been instrumental in setting many of the critical levels and critical loads noted:</p> <p><i>"I do not subscribe to the approach of the Environment Agency that a process contribution should only be considered relevant if it contributes more than 1% of a long-term environmental quality standard at a location... Such an approach may well have been suited to situations of a few major pollution sources (e.g., major power-stations), but is not well-fitted for other diffuse pollution sources, such as road transport or agricultural emissions."</i><sup>1</sup>; and</p> <p><i>"I comment briefly on the long-standing vexed question of what constitutes the smallest significant contribution to an in-combination assessment. The guidance document NEA001 [see footnote 22 of the draft IAQM guidance] recommends a 1% threshold of the critical loads/levels for the purposes of screening. Specifically, it is noted, 'the ... 1% of critical</i></p>	<p>The document presents the screening criteria as being used by regulators and describes the use of the 1% criterion in the context of the Wealden judgement. The document does not argue for their use, as such, but rather acknowledges that they are widely used for this purpose. Given their current status and widespread use, this seems to be appropriate. The views of Mark Sutton are of interest and IAQM Is also aware that some other people have argued that there can be no level of additional pollution that is harmless where habitats are currently experiencing deposition above the critical load. These are minority views, however, and should not dictate our advice on how to conduct an assessment. The document itself is not a pace for discussion of these arguments, but rather a concise description of methods and approach.</p>

<p><i>load/level are considered by Natural England's air quality specialists (and by industry, regulators and other statutory conservation bodies) to be suitably precautionary, as any emissions below this level are widely considered to be imperceptible"</i></p> <p><i>"Considering this threshold, it should firstly be welcomed that the statement above did not attribute this 1% threshold to the scientific community. Indeed, my experience is that there are a wide range of views on this matter within the scientific community. While some will choose a number, others would say that above the critical load/level no extra is acceptable. I note for comparison that the AG Opinion on C-293/17 &amp; C-294/17 draws attention to the use of a de minimis in the Dutch nitrogen programme of 0.01% and 0.02% of the critical load (AG Opinion, para 106), which is a factor of 50 to 100 smaller than that the de minimis recommended by NEA001.</i></p> <p><i>My own view is that a non-zero de minimis value should presumably exist. However, the size of it will depend on the statistical distribution and number of sources contributing to the problem in hand. For example, if much of a problem with air pollution is caused by ~50 large sources, then perhaps a 1% threshold is appropriate. By contrast, if most of a problem is caused by ~10000 small sources (e.g., roads, agriculture, domestic heating etc.), then a much smaller de minimis threshold would be needed."</i><sup>2</sup></p> <ol style="list-style-type: none"> <li>1. <a href="http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=25562&amp;SID=6726">http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=25562&amp;SID=6726</a> Para 144</li> <li>2. <a href="http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=26266&amp;SID=6796">http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=26266&amp;SID=6796</a> Paras 42 to 45.</li> </ol> <p>Given Mark Sutton's international standing and experience in setting critical levels and critical loads, it is considered that his views should be considered, even if only to explain to IAQM members why they are considered irrelevant.</p>	
<p>The judgement on Joined Cases C-293/17 and C-294/17 (para's 108 and 109) suggest that de-minimis screening criteria may only be applied where it</p>	<p>It is IAQM's belief that the document is consistent with this ruling. <i>De minimis</i> criteria are applied in combination</p>

<p>can be demonstrated that a plan will not have a significant effect in-combination with other plans or projects. In the case of Joined Cases C-293/17 and C-294/17 this related to the robustness of an earlier appropriate assessment carried out by the national government of all subsequently-screened development. It is not self-evident that the use of screening criteria for schemes which have not already been the subject of an appropriate assessment is consistent with this judgment.</p>	
<p><i>Future Year Emissions Projections</i>  Paragraph 5.4.2.4 notes: “<i>The judgement in the Netherlands cases concludes that ‘autonomous measures’ can only be taken into account if it is sufficiently certain that the measure will deliver as anticipated</i>” (emphasis added). It then goes on “<i>There is clear evidence that UK NOx emissions, including those from road traffic, are declining and will continue to do so in the future</i>”. An outstanding question is thus whether or not they will decline as anticipated. If the ECJs Opinion in these cases is ignored (i.e. only the Judgement is referred to), then in order to be able to take account of autonomous measures within a quantitative assessment, it must be possible to quantify the effect of these improvements beyond reasonable scientific doubt. It has yet to be tested whether any UK models are able to meet this requirement of the Habitats Regulations. If the ECJ’s Opinion on these cases is taken into account, then it may be the case that the effects of such measures must be discounted in any event unless they will deliver compliance with the Critical Loads.</p>	<p>The IAQM is of the view that the Opinion does not have much material weight in law, as compared with a ruling. As observed elsewhere, UK NOx emissions (in total) are declining and this decline is projected to continue, with policies in place to achieve this reduction.</p>
<p>Paragraph 5.4.2.6 states that reductions in NO<sub>2</sub> are being monitored by the UK plan to reduce roadside NO<sub>2</sub> concentrations to comply with the annual-mean EU Limit Value. It is unclear how this statement relates to those designated habitats where the EU Limit Value is not being exceeded, or how the margin between the Limit Value and exceedence of the Critical Levels and Critical Loads will be addressed.</p>	<p>Amendment made (also in response to a comment from Duncan Laxen):  <i>‘5.4.2.6 The Netherlands case also clarifies that a mechanism must be in place to ensure that the expected reductions take place. In the UK, the Government has published a Clean Air Strategy, which aims to set out the mechanisms by which the target of a 73% reduction in NOx emissions will take place by 2030 (relative to a 2005 baseline). This will ensure compliance with the National Ceilings Emission Directive. The strategy also includes a target for the reduction of deposition of reactive forms of nitrogen in England’s protected priority sensitive habitats. <del>reductions in NO<sub>2</sub> are being monitored by central government under the UK plan to reduce roadside NO<sub>2</sub> concentrations to comply with the annual-mean EU Limit Value. Central government is committed to the use of additional measures if the EU limit value for NO<sub>2</sub> is not delivered according to the current timescale. Air quality specialists may wish to refer to the IAQM’s Position Statement on ‘Dealing</del></i></p>

	<p><i>with Uncertainty in Vehicle NOx Emissions within Air Quality Assessments' for further information<sup>57</sup>.</i></p>
<p>Paragraph 5.4.1.18 suggests that the sole reason for estimating future air quality is because emissions from road traffic and other sources are forecast to decrease in future. Paragraph 6.8 stresses the importance of making assumptions about expected changes in baseline NO<sub>2</sub> concentrations and vehicle emissions. Paragraph 6.12 then explains that this allows adverse impacts to be described as a retardation of the benefit rather than a deterioration.</p> <p>All of these statements take a definitive, and many might argue partisan, position on an issue upon which many practitioners disagree. Para 1.1.8 of the draft guidance explains: <i>"...it should be noted that there is often more than one interpretation of case law and that it is the courts that make the final judgment. This document may be updated as appropriate, to reflect any further relevant court judgements and/or guidance issued by the Government or the relevant regulators"</i>. This statement is not sufficient to absolve IAQM from a responsibility to present a balanced position in its guidance where there exists any significant doubt over the correct procedure.</p>	<p>Minor Amendment: <i>'5.4.1.18 For road transport sources, individual receptors along a transect, or along a series of transects at suitable intervals, perpendicular to the road up to 200 m are generally used<sup>50</sup>. As NOx emissions from road traffic and other sources are forecast to decrease in the future, it is <del>necessary</del> appropriate to estimate future air quality (see below).'</i></p> <p>The IAQM has reflected on whether the text is, in fact, taking a one-sided view. Having done so, we have concluded that the text is factual and simply stating the obvious, namely that there is a well founded view that future NOx emissions will decline in multiple sectors, even if the effect on NO<sub>2</sub> concentrations and N deposition rates is uncertain. Given that quantifying the future baseline is an important component of the assessment, it seems reasonable that the likely context is discussed.</p>
<p>It is considered possible that courts will find that the approach to autonomous reductions given in the draft guidance is wholly correct. However, it is also possible that the opposite will occur. If the latter happens, then any assessment based on the current draft of this guidance would be found to be inadequate. Until such time as the legal position can be considered as settled, it is suggested that a more balanced position is adopted.</p>	<p>Ultimately, an individual assessor will have to decide if their characterisation of the future baseline is correct and defensible. The document makes it clear that any reductions in future emissions that that are accounted for must be the result of measures that are in place. Paragraph 5.4.2.10 also notes the merits of seeking agreement with the competent authority for the approach taken. Having reviewed all of the relevant text, we consider that the document is sufficiently balanced.</p>
<p><i>Traffic-related NH<sub>3</sub> Emissions</i></p> <p>This source of emissions appears to be mentioned twice: first in Paragraph 5.5.4.1; where it is noted that Highways England does not require its consideration when assessing Highways England schemes; and again in Paragraph 6.6.1 where it is suggested that ammonia from road traffic is a small and declining source. This source of emissions is potentially significant; particularly with the expected increased use of petrol and hybrid vehicles (the latter being relevant because of the importance of cold-start conditions for ammonia emissions). A more detailed commentary on this</p>	<p>The document is not intended to provide a methodology on all aspect of an assessment, but rather the principles that underpin it. It will be for an assessor to decide how to treat ammonia emissions within any assessment.</p>

<p>issue would be helpful, even if it is not currently possible to suggest a practical solution.</p>	
<p><b>National and Local Site Designations</b>  The final sentence of Paragraph 5.5.2.2 suggests that the same approach should be taken to assessing locally-designated sites as to internationally-designated sites. This is not necessarily the case, since the legal protection afforded to these sites is different. For example, the test of certainty regarding the effects of future-year emissions reductions may not apply equally to European sites and SSSIs. Furthermore, if the guidance is suggesting that the EA's 100% criterion for PCs should NOT be used outside of the permitting regime, then this should be made clear.</p>	<p>Amendment made: '5.5.2.2 For local wildlife sites and ancient woodlands, the Environment Agency uses less stringent criteria in their permitting decisions. Environment Agency policy for its permitting process is that if either the short-term or long-term PC is less than 100% of the critical level or load, they do not require further assessment to support a permit application. <u>It is difficult to understand how this approach can provide adequate protection.</u>'</p> <p>This section of the document is dealing with industrial point sources and assessment within the context of permitting.</p>
<p><b>Acidifying Pollutants</b>  Paragraph 2.12 gives the impression that other industrial emissions (such as hydrogen chloride) will not contribute to acid deposition. Cognisance of the acidifying effect of these emissions would be helpful, even though they are not included within the critical loads function tool. See also Paragraph 2.12 of AQC's response to the 2017 consultation on this guidance.</p>	<p>Amendment made: '2.12 Nitrogen and sulphur deposition both contribute to acid deposition, <u>as do some other compounds such as hydrogen chloride. APIS provides a Critical Load Function that defines the contributions from sulphur and nitrogen deposition that will not cause harmful effects. Critical loads for acidification are in units of kilograms of H+ ion equivalents per hectare per year (keq/ha/year).</u>'</p> <p>We are unsure how this paragraph creates this impression. Nevertheless, we have amended it to avoid any misunderstanding.</p>
<p><b>Wood Environment &amp; Infrastructure Solutions UK</b></p>	
<p><b>Assessment of daily mean NO<sub>x</sub> impacts</b>  Table 2.1 provides the daily mean critical level for NO<sub>x</sub> as 75 µg m<sup>-3</sup> with the main body text signposting readers to Appendix C (we assume this reference should be to Appendix D) for further information. In doing so, the guidance potentially falls in to a similar trap which other guidance suffers in quoting guideline values without explanation of the caveats/basis behind the derivation of these parameters (the EA's factors for converting concentrations to different averaging periods being an example) which has important implications for their use in assessments.</p> <p>Appendix D does refer to this critical level being established by the 2000 WHO guidelines and notes the dependence of SO<sub>2</sub> and O<sub>3</sub> when</p>	<p>Amendment made: '2.7 For some important gaseous pollutants, critical levels below which significant harmful effects are not thought to occur<sup>19</sup> have been adopted by, amongst others, the European Union and the United Nations Economic Commission for Europe (UNECE) and are used as regulatory standards. These are summarised in Table 2.1. Their origin and use are explained in further detail within Appendix G-D'</p> <p>'Table 2.1 Change 75 µg/m<sup>3</sup> to 75/200 µg/m<sup>3</sup> and add footnote "<u>The critical load is generally considered to be 75 µg/m<sup>3</sup>, but this only applies where there are high concentrations of SO<sub>2</sub> and ozone, which is not generally the current situation in the UK. See paragraph D4.11 in Appendix D.</u>"</p>

<p>establishing a short-term critical level for NOx. The more detailed CD-ROM version of the 2000 WHO guidelines notes:</p> <p><i>“Experimental evidence exists that the CLE decreases from around 200 µg/m<sup>3</sup> to 75 µg/m<sup>3</sup> when in combination with O<sub>3</sub> or SO<sub>2</sub> at or above their critical levels. In the knowledge that short-term episodes of elevated NOx concentrations are generally combined with elevated concentrations of O<sub>3</sub> or SO<sub>2</sub>, 75 µg/m<sup>3</sup> is proposed for the 24 h mean.”</i></p> <p>In recent DCO applications for Manston Airport and Wylfa Newydd Nuclear Power Station, Wood has been able to agree a higher critical level of 200 µg m<sup>-3</sup> with the relevant nature conservation bodies (Natural England and Natural Resources Wales, respectively) where it was demonstrated that SO<sub>2</sub> and O<sub>3</sub> are not exceeding their own respective critical levels.</p> <p>By signposting readers to lengthy text in an appendix, we believe opportunities may be lost for air quality practitioners to adopt a more relevant short-term critical level for NOx, one which reflects a more recent UK position given the significant downward trend in SO<sub>2</sub> concentrations, in particular, since the WHO guidance was published in 2000, and the value in Table 2.1 will simply be taken at face value. We believe greater clarity can be provided in the guidance by including a footnote to Table 2.1 which explains the dependency of the NOx critical level on concentrations of SO<sub>2</sub> and O<sub>3</sub>.</p> <p>Whilst daily mean concentrations of NOx are rarely discussed in the context of roads related air quality assessments, it can be a significant constraint to air quality assessments of industrial emissions and further clarity on the applicability of this guideline value in the context of the more recent UK position would be welcomed.</p>	<p>Add new para D4.11</p> <p><u>‘D4.11 The more detailed CD-ROM version of the 2000 WHO guidelines notes: “Experimental evidence exists that the CLE decreases from around 200 µg/m<sup>3</sup> to 75 µg/m<sup>3</sup> when in combination with O<sub>3</sub> or SO<sub>2</sub> at or above their critical levels. In the knowledge that short-term episodes of elevated NOx concentrations are generally combined with elevated concentrations of O<sub>3</sub> or SO<sub>2</sub>, 75 µg/m<sup>3</sup> is proposed for the 24 h mean.” Ozone and SO<sub>2</sub> concentrations are typically low in the UK compared to many other countries. If a regulator does require the use of the short term NOx critical level, given the low UK SO<sub>2</sub> concentrations IAQM consider it is most appropriate to use 200 µg/m<sup>3</sup> as the short term critical load.’</u></p>
<p><b>Assessment of NH<sub>3</sub> impacts from road traffic</b></p> <p>The guidance rightly identifies that ammonia should be considered when assessing the impacts of nutrient nitrogen and acid deposition. Whilst this has generally already been the case for industrial air quality assessments, it is a relatively new issue for road traffic assessments. With many practitioners cautioning the use of e.g., COPERT ammonia emission factors, due to such factors not taking in to account the likely greater uptake of vehicles using SCR and associated increases in ammonia emissions through ammonia slippage, there is considerable uncertainty at present in</p>	<p>There is insufficient evidence, at present to provide clear guidance on suitable emission factors for NH<sub>3</sub> emitted by road vehicles. Such evidence as does exist does not support an increasing contribution from diesel vehicles.</p>

<p>predicting the impacts of ammonia emissions from road traffic. Wood appreciate it may be beyond the scope of this guidance document to provide a best practice approach to modelling road traffic emissions of ammonia but further guidance from the IAQM would be welcomed in due course.</p>	
<p><b>Arup</b></p>	
<p>Paragraph 1.1.1 This paragraph refers to the “assessment of the effects that air quality impacts may have on habitats and species, is generally outside the expertise of IAQM members”. We think this does not specifically need to mention the expertise of IAQM members, as ecologists, and others, can also be IAQM members.</p>	<p>This sentence is emphasising the distinction between the assessment of the impacts and the effects, which require the contribution of two specialist groups. The second of these activities is likely to be outside the expertise of IAQM members and we, as a professional body, cannot be the author of a document on this topic. For this reason, we retain the explanation of why we restrict this document to the assessment of impacts.</p>
<p>Paragraph 1.1.9 This paragraph is not necessarily needed in the document.</p>	<p>We would like to retain the explanation of why we have not been able to produce a joint document and also signal that this remains our intention,</p>
<p>Paragraph 1.2.9 Refers to SACs, SPAs, SSSIs, NNRs, LWSs and Ancient Woodland. Following guidance, however, we do not undertake Nitrogen deposition assessments on LWSs or Ancient Woodlands. It is recommended that a clear differentiation needs to be made about these sites. In addition, APIS does not contain all the information required for these site types.</p>	<p>The document recognises that not all of these designated sites will be treated equally, which is why the text states that these sites ‘<i>may require assessment</i>’.</p>
<p>Paragraph 1.2.12 “<i>This IAQM document is generally consistent with the Natural England guidance but recognises that the approach used by most air quality consultants does not coincide exactly with the steps in the Natural England guidance</i>”. Please could the document be more specific on how it relates to the Natural England guidance. It would be useful to understand why and where this guidance differs from that of Natural England and in what planning situation (strategic/individual) which ones should take precedent.</p>	<p>Amendment made: ‘<i>1.2.12 This IAQM document is generally consistent with the Natural England guidance but recognises that the approach used by most air quality consultants does not coincide exactly with the steps in the Natural England guidance</i>’</p>
<p>Paragraph 2.9 Mentions ozone however in D.2 it states that “this pollutant is not addressed by this guide as it is a regional pollutant not assessed at scheme or project level”. Is there any relevance in mentioning it in 2.9?</p>	<p>Amendment made: ‘<i>2.9 Another gaseous pollutant that has important effects on vegetation is ozone. This is a secondary pollutant, formed in the atmosphere from emissions of nitrogen oxides (NOx) and volatile/semi-volatile organic compounds. Its production through photochemical reactions</i></p>

	<i>occurs at a considerable distance from the release point and is not amenable to the assessment methods set out in this document. Consequently, no guidance on its assessment is provided.'</i>
Section 3 The summary boxes in case law were very useful to pick out key information and clear to read. We recommended that other sections of the document should follow the same layout.	A new box in chapter 1 has been added. Experience from other IAQM guidance is that putting information in tables or boxes can result in the detail being missed and the suggests assessment approach being wrongly applied.
Paragraph 3.3 Reference to the Environment Agency only first appears in section 3 which is considered quite late on in this document.	Section 1 has been extensively amended and, in doing so, accounts for this point.
Paragraph 4.1.1 States that "" This document, however, has a lot of bulk text and would benefit from flowcharts and more visual information to make it clearer.  In the middle of the paragraph there is reference to "s/he" would this not be better as "they". It should be in the singular not plural, so s/he is correct.	Amendment made: <i>'4.1.1 The principal purpose of this document is to set out a <del>clear</del> procedure for air quality specialists</i>
Table 4.1 The arrow to the right-hand side implies that it is a sequential process however further down in the document it refers to a more 'back and forth' to the assessment stages. This table may be better represented as a flowchart or as a circular chart. There is no mention of stages of the ecological assessment in this table.	Table 4,1 has been revised (and the arrow removed)
Box 4.1 This box needs to be clearer that just because the site may be sensitive to nitrogen does not mean that we will undertake an assessment. Care needs to be taken to look at specific features not just the designation. Discussion could be added about an ecologist clarifying that there are no qualifying features within 200m of the road. The ecologist's knowledge is sometimes different to the APIS website.	Box 4.1 refers to the scoping stage (in outline terms only), which means that no conclusion has yet been reached on whether an assessment is required. The elements referred to in the comment are more appropriately dealt with in Section 5.
Paragraph 4.3.2 Not sure what the relevance is of this paragraph, seems to be repetitive text that is not needed.	Amendment made: <i>'4.3.2 <del>It is worth noting that the outcomes of the several recent court judgements have influenced how air quality assessments on</del></i>

	<i>designated sites should be undertaken. These are described in Chapter 3 on case law.'</i>
Paragraph 4.4 Mentions 'insignificant' without prior definition of what it is.	Amendment made: <i>'4.4.1 In those cases where effects (alone and in combination) cannot be definitively described as insignificant on the basis of the air quality assessment alone (see Section 5), the ecologist will review the information provided by the air quality specialist and consider the likely significance of the effects.'</i>
Section 5 It is considered that the layout of the assessment would be easier to follow in a flowchart form.  The guidance acknowledges but does not specifically address the difference between assessment of the two types of in-combination effects: inter and intra. The inter (between different projects) effects are taken into account inherently in the air quality assessment and are addressed in the guidance.  It is important to consider the impact of the intra in-combination effects (combined results of air quality and ecological impacts) as both might have a minor adverse impact, but is having a minor adverse impact on two environmental features still minor overall? This is often something to be considered by or with the environmental coordinator, if this is the preferred method then this should be stated clearly in the guidance and acknowledged that the guidance does not address it.	Intra effects are not considered within this document. If they are to be considered, then it is a topic for the ecologists. This has been mentioned in the revised table 4.1.
Paragraph 5.2.2 There is a mention of two types of cumulative effect; however, the second one is not explored in the following text. Is professional judgement required or does the IAQM have an opinion on them? Does the IAQM expect the second type to be assessed?	The intra cumulative effects (i.e. air quality and ecology effects), would be addressed by the ecologist, as they assess the effects one ecology of the air quality impacts. This document considers the air quality impacts not the ecological effects.
Paragraph 5.2.5 The reference here to "see paragraph 5.4.1.20" appears to be incorrect as there is no mention of traffic emissions in this paragraph.	Amendment made: <i>'5.2.5 It should, however, be noted that where the impacts are due to road traffic emissions, the cumulative impact may not be explicitly identified (see paragraph 5.4.1.20 5.4.19).'</i>
Paragraph 5.3.7 The examples here are very useful, would be better in key boxes to clearly bring out the information.	The suggestion is welcomed, but it has not been implemented, as we do not feel that the descriptions are sufficiently important to merit a separate text Box.

<p>Paragraph 5.3.10 The criteria in this paragraph are based on traffic numbers rather than nitrogen emissions. This could potentially scope in more sites than will actually be affected in the future. In some cases, Euro VI HGVs are better than cars. This is a very conservative assumption and could have the potential to be updated to be based on traffic emissions rather than numbers. This could be shown quantitatively with a comparison of 2007 to emission today or the N deposition of various levels of traffic of an average fleet.</p>	<p>Potentially a useful exercise, but there will be a multiplicity of scenarios and this could lead to additional confusion/complexity.</p>
<p>Paragraph 5.4.1.11 Would it be clearer to state that it should not be used due to the emission factors being out of date?</p>	<p>Amendment made: <i><u>'5.4.1.11 The road traffic PC could be calculated using the publicly available version of the 2007 DMRB spreadsheet model; this, however, dates back over a decade and uses out of date emission factors and fleet composition. The IAQM recommends that the latest version of the EFT and dispersion modelling is used.'</u></i></p>
<p>Is the limit 2m? If so, it would be useful to define and explain why specifically 2m is the limit. Why is there a range in values? It is considered that this is more general modelling information rather than guidance. It is important that this is in the document</p>	<p>The text has been amended to 2m only.</p>
<p>Paragraph 5.4.1.17 It would be useful to have a reference or justification for the use of one year of met data for modelling road schemes.</p>	<p>Amendment made: <i><u>'5.4.1.17 Multiple years of representative meteorological data (typically three to five consecutive years, depending on the type of assessment) should be used in the dispersion modelling of point sources; for road schemes, one year is normally sufficient. (according to LAQM TG16).'</u></i></p>
<p>Paragraph 5.4.1.5 It is stated clearly what should not be used, can you please recommend what data should be used.</p>	<p>Professional judgement should be used and, if required, an approach that is defensible.</p>
<p>Paragraph 5.4.1.21 Is there any view to update these AQTAG guidance values from 2014?</p>	<p>IAQM cannot take responsibility for, or provide advice on, AQTAG guidance.</p>
<p>Paragraph 5.4.2.2</p>	<p>Amendment made: <i><u>'5.4.2.2 The APIS website also provides background concentrations data, but the higher spatial resolution background data</u></i></p>

<p>Reference is made to use APIS and Defra background data; however, there is some confusion, as this appears to be advised against in paragraph 5.4.1.5.</p>	<p><i>available from Defra for certain pollutants should be used when possible. <u>Note that it may be necessary to forecast future concentrations taking into account sources of emissions not directly relevant to the project/plan under consideration, such as road traffic for industrial projects</u></i></p>
<p>Paragraph 5.4.2.3 When referring to future years it is not clear as to why is there not a reference to the IAQM policy statement on future years.</p>	<p>Amendment made: '5.4.2.3 <i>The air quality specialist may choose to assume no change in future baseline concentrations or deposition rates, where there is no evidence to indicate that they may decrease in value. This may be appropriate if, for example, the project/plan under consideration is likely to be completed within a relatively short period of time (one or two years in the future). If there is a long lead-in period (due to construction and/or commissioning periods), it may be more appropriate to reduce future baseline concentrations/ deposition rates to allow for anticipated improvements in national emissions. (There is an IAQM Position Statement on the uncertainties in the estimation of future road traffic emissions.)</i> <a href="https://iaqm.co.uk/text/position_statements/uncertainty_vehicle_NOx_emissions.pdf">https://iaqm.co.uk/text/position_statements/uncertainty_vehicle_NOx_emissions.pdf</a></p>
<p>Paragraph 5.5.1.3 Reference is made to a “suitably qualified ecologist”, can the group please clarify what that means. Our experience is that few ecologists feel confident about his type of assessment. Would they have the information needed equivalent to that acquired from the APIS website..</p>	<p>The IAQM does not feel that it should be defining the requisite qualifications for an ecologist.</p>
<p>Paragraph 5.5.2.4 What is the process if we are assessing an “intensive pig or poultry farm”? Is H1 equivalent to a dispersion model?</p>	<p>This paragraph is a discussion of the 1% threshold and not the applicability of H1, which is not relevant for intensive agriculture.</p>
<p>Paragraph 5.5.2.6 What would be the IAQM guidance for the process in this case please? Regulators will usually want a ‘better or not’ answer.</p>	<p>The text is encouraging the assessor to make a judgement based on all the evidence available and not a binary decision based solely on a numerical value that may not be accurate at this level of precision.</p>
<p>Table 2.1 Please could a reference be provided for this table to provide clarity on where these values are being drawn from.</p>	<p>Amendment made: Provide following reference <a href="http://www.apis.ac.uk/critical-loads-and-critical-levels-guide-data-provided-apis#_Toc279788051">http://www.apis.ac.uk/critical-loads-and-critical-levels-guide-data-provided-apis#_Toc279788051</a></p>
<p>Section 6</p>	<p>Section 6 explicitly covers the assessment of local plans, which are slightly different to projects, due to the scale of the potential impacts. The audience</p>

It is considered that this section could be more succinctly summarised. Is there a reason this section is not mentioned in the case law section? Who is the proposed audience of this section? More advocacy on this would be appreciated.	is no different that that of the rest of the document. Box 3.1 in the case law section refers to the Wealden case which relates to a local plan. It is unclear what the point being made is.
Section 7 It is considered that these principles could be introduced at the beginning of the document or in an executive summary.	The principles outlined are important, but have been placed at the end so as not to interrupt the flow of the guidance relating to the assessment procedure. There are also covered by the new Box in Chapter 1.
Glossary 'Do Minimum' should come before 'Do Something'.	Amendment made: Implemented this switch.
Site of Nature Conservation Interest (SNCI) is first introduced in the glossary not the document.	Amendment made: Delete SNCI from glossary but include in list under Local wildlife section of the glossary.
SEPA is the 'Scottish Environment Protection Agency' not 'Environmental'.	Amendment made: Made correction
Appendix B: Image is unclear to read.	Amendment made: Replaced image
D.11.7: If that is the essential information as it is underlined why is it at the end of the document?	Amendment made: Underlining removed.
Appendices: Where other guidance has avoided being a reference document, it is considered that the appendices of this document largely contain background information rather than guidance.	We consider that this background information is useful.
<i>General Feedback</i>	

<p>It is considered that the majority of the detail could be better summarised in a more succinct format which drew out the key points and views of IAQM. We think that drawing out the key points would be useful for new IAQM members and the clear messages for more experienced members with references to where other useful guidance can be found.</p>	<p>As noted in a previously comment when boxes and tables are used in guidance the detail get missed. This is a very complex area because of the different types of project/plans and sites. This has been discussed in the working group and it is considered that a more succinct format is likely to lose too much detail.</p>
<p>The introduction is quite long and refers straight into England specific planning documents (NPPF). It would be useful in this section to make reference to similar policies across all the UK regions. A table of the different application of the policies and context across the regions would be beneficial. It is unclear from the outset whether this is primarily for roads/highways assessments or is more general guidance.</p>	<p>Chapter 1 has been largely rewritten, with references to different regimes in the DA. Given there are four regulatory systems provided detail for each is considered to be too cumbersome. It is hoped that it is now clearer.</p>
<p>The document does not clearly state what to do in different assessment situations (e.g. roads, boilers). We think it would be useful to have a table on these different assessment options and where professional judgement is required.</p>	<p>We consider that this approach is more complex to implement than the comment implies.</p>
<p>The use of 'key guidance' boxes and bullet points would make the guidance easier to understand and identify the important information. It is considered that introducing more visual aspects such as flowcharts would make the guidance document more valuable and simpler for both air quality specialists and ecologists to follow in practice at a range of experience levels.</p>	<p>This is an attractive idea, which was attempting during the drafting process. Unfortunately, however, a satisfactory form of flow charts was not agreed.</p>
<p>Following a couple of talks at recent air quality conferences and events our team have attended, we were expecting to have more information on ammonia from vehicle emissions included in the guidance.</p>	<p>The document is intended to be a guide to the approach to be taken with assessments, rather than a detailed description of methods. The evidence on ammonia emissions from vehicles is still relatively scarce and a consensus on emission factors has not yet emerged.</p>

<p>Finally, it is considered that there could be conflict with DMRB guidance, therefore this could create professional conflict for IAQM members undertaking the assessments.</p>	<p>Paragraph 1.2.16 clearly states that this document should not take precedence over guidance produced by Highways England or similar bodies where the development is promoted by HE or their equivalents. We anticipate that IAQM members will be able to distinguish between the two sets of circumstances.</p>
<p><b>Anonymous</b></p>	
<p><i>General points</i></p> <ul style="list-style-type: none"> <li>• We feel the Guide is a useful tool for carrying out air quality impact assessments to satisfy HRA requirements.</li> <li>• We note that there is no reference to valuing natural capital and use of ecosystem services in habitat impact assessments. Although not crucial for air impact assessment purposes, it maybe be useful to provide such information for context.</li> <li>• We feel that there could be more discussion of what is and isn't classed as mitigation, especially for point sources and especially in relation to screening assessments.</li> <li>• It may be worth mentioning requirements to assess impacts at sites functionally linked to Natura sites and what constitutes such a site.</li> <li>• The requirement to use an ecologist in the AQ assessment could be further emphasised as being proportionate to the scale and complexity of the project and the expertise of the AQ professional. For example, guidance provided by EA and other regulators for permitting purposes may be all that is required in many habitat AQ impact assessments.</li> </ul>	<p>The relevance of some of these comments for air quality assessment is unclear. Valuing nature capital / considering ecosystems services are not part of an air quality assessment.</p> <p>The revised Chapter 1 aims to make it clearer that the document covers the air quality impact assessment only, and not the ecological effects.</p> <p>Including mitigation measures is difficult in a document such as this that covers a wide range of projects. Additionally, the boundary between 'designed-in mitigation' and 'post assessment' mitigation is often a grey area. The assessment process, particularly for industrial processes, is iterative.</p> <p>Functionally linked habitats largely relates to birds, and is not typically considered to be air quality issue.</p> <p>The need for the assessment to be proportionate to the risk is included in the document. Again given the wide range of project/plans the document does not address all the issues that need to be considered and is part of the professional judgement of the lead assessor.</p>
<p><i>Specific Points</i></p>	
<p>1.2.9. Even though the glossary says Local Nature Reserves (LNRs) are included under Local Wildlife Sites (LWS), it may be worth explicitly mentioning LNRs in this paragraph as EA air impact risk assessment guidance specifies LNRs and LWS separately under a 'local nature sites' moniker.</p>	<p>Amendment made: <i>'1.2.9 This IAQM guidance, therefore, applies to the assessment of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (known as European sites) and Ramsar sites<sup>9</sup> which are covered by the Habitats Regulations. It also applies to Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), <u>Local Nature Reserves (LNRs)</u>, local wildlife sites (LWSs)<sup>49</sup> and areas of ancient woodland<sup>11</sup>. All these sites may require assessment depending on the type of project and/or the regulatory system under which the application is made. In this document, these are referred to as 'designated sites.'</i></p>

	[Note removal of footnote 10.]
Footnote 9: There's a typo ('knwon').	Amendment made: Corrected this typographical error.
Para 3.7; Delete 'to' in line 5	Amendment made: Deleted
5.2.9 We have had examples of two or more industrial installation developments occurring close together. In such cases it is usually true that plumes do not significantly overlap at a particular location and time, but it is still wise (given the relatively small amount of additional time required to add sources to a dispersion model) to include all such sources in modelling studies to ensure cumulative impacts are captured. These are more likely to be significant for long term (annual mean) impacts than short term.	Amendment made: <i>'5.2.9 It is, however, rare for a proposed new or enlarged industrial installation to be located close to other proposed new or enlarged industrial facilities and the risk of the plumes overlapping and giving rise to a significant effect on a designated site is generally low. <u>Should these circumstances arise, the dispersion modelling can be extended to account for multiple sources, should the emission data be available.</u> There is a higher likelihood that there will be a cluster of overlapping intensive agricultural emission sources close to designated sites and these need to be considered in assessments<sup>36</sup>.'</i>
5.4.1.12 It may be worth mentioning GIS here as a useful way of filtering out Cartesian modelling grid points falling within an irregular boundary of a nature conservation site and determining maximum impacts within the site from this filtered dataset.	This is a helpful suggestion, although at a greater level of detail than the document is intended to provide.
5.4.1.20/21 Might be worth noting that given the NO deposition velocity is insignificant compared to that of NO <sub>2</sub> , a common simple conservative approach to assessing N-dep from NO <sub>x</sub> is to assume all modelled NO <sub>x</sub> is in the form of NO <sub>2</sub> and apply the NO <sub>2</sub> deposition velocity to that NO <sub>x</sub> concentration. In contentious situations, it may be helpful to estimate N-deposition from a modelled NO <sub>2</sub> concentration derived from a linear conversion from NO <sub>x</sub> (eg x 0.7), or using outputs from a dispersion model incorporating a photochemical NO <sub>x</sub> /O <sub>3</sub> algorithm.	Amendment made: <i>'5.4.1.21 The most commonly used values are shown in Table 5.1, taken from AQTAG guidance<sup>52</sup>. It should be noted that the current DMRB guidance <del>only</del> provides a deposition velocity for NO<sub>2</sub> <u>only</u> and that it is different from the AQTAG NO<sub>2</sub> deposition velocity. IAQM recommends that the AQTAG value is used in preference to the DMRB value. <u>It should also be noted that the deposition velocity for NO is extremely small and assuming that all NO<sub>x</sub> is in the form of NO<sub>2</sub> is therefore highly conservative.</u> An air quality specialist may choose to derive their own deposition velocities based on a review of published data. The source of the deposition velocity and justification for its use should be provided.'</i>
In Table 5.1, it might be worth adding an additional column, with conversion factors from modelled concs in µg/m <sup>3</sup> (and/or ppb) to kgN/ha/yr and keq/ha/yr for each pollutant and habitat. These factors can be derived from AQTAG06 and highlight the potency of a given concentration of NH <sub>3</sub> to N-dep compared to NO <sub>x</sub> .	The Working Group considered this and decided that conversion of units should be within the professional skills of the assessor.

7.6/7.7 A bit of overlap/duplication between the last line of para 7.6 and para 7.7	This has been accounted for in response to another comment.
7.8 Penultimate line 'clarity' not 'clarify'.	Amendment made
Footnote 71 'Principle https://...' not 'Principelhttps://...	Amendment made
Appendix A table. Background should refer to 5km by 5km grid, not 1km by 5km.	Amendment made
Appendix A table. Designated site descriptions are not consistent with EA descriptors (eg NNR, LNR, AW). They don't need to be, but may be worth noting descriptors used by EA in their AQ impacts risk assessment webpages.	Amendment made: Include in glossary under Designated Site: National Nature Reserves Local Nature Reserve Ancient Woodland