

Date: 19 December 2017  
Our ref: DAS/12666/226010



Marina Briggins  
Wealden District Council

**BY EMAIL ONLY**

Customer Services  
Hornbeam House  
Crewe Business Park  
Electra Way  
Crewe  
Cheshire  
CW1 6GJ

0300 060 3900

Dear Marina

**Discretionary Advice Service (Charged Advice) DAS 12666/226010  
Air Quality Assessment: Pevensey Levels Special Area of Conservation (SAC) and Ramsar Site**

Thank you for your consultation on the above dated 09 October 2017.

This advice is being provided as part of Natural England's Discretionary Advice Service. Wealden District Council has asked Natural England to provide advice upon:

Pevensey Levels SAC and Ramsar Site

Stage 1

- a) Confirmation of designation features
- b) Confirmation of vegetation and ecosystems to be used for critical loads and levels including freshwater ecosystems
- c) Review of air quality information
- d) Information held by Natural England relevant to HRA
- e) Appropriate Assessment requirements based on information provided

This advice is provided in accordance with the Quotation and Agreement dated 9 October 2017.

The following advice is based upon the information within:

- Air Quality Input for Habitats Regulations Assessment: Pevensey Levels, Report number J2808/1/F3, Air Quality Consultants (1 November 2017)

**Summary**

My advice is that air quality impacts from Wealden District Council's Local Plan will not have a likely significant effect on Pevensey Levels SAC and Ramsar site alone or in combination with other plans and projects and no further assessment is required under the Habitats Regulations.

This advice is based on the interest features for which Pevensey Levels SAC and Ramsar site is designated and the conservation objectives of the site. My detailed comments on the air quality report and the implications of the results on Pevensey Levels SAC and Ramsar Site are within Annex A and B attached.

Please note that as the same consultancy provided the air quality assessments for both Lewes Downs and Pevensey, some comments on modelling assumptions will be the same as those

provided for the Lewes Downs advice. For clarity I have repeated the wording in this response.

For clarification of any points in this letter, please contact me on 0208 026 8007.

The advice provided in this letter has been through Natural England's Quality Assurance process

The advice provided within the Discretionary Advice Service is the professional advice of the Natural England adviser named below. It is the best advice that can be given based on the information provided so far. Its quality and detail is dependent upon the quality and depth of the information which has been provided. It does not constitute a statutory response or decision, which will be made by Natural England acting corporately in its role as statutory consultee to the competent authority when relevant. The advice given is therefore not binding in any way and is provided without prejudice to the consideration of any statutory consultation response or decision which may be made by Natural England in due course. The final judgement on any proposals by Natural England is reserved until an application is made and will be made on the information then available, including any modifications to the proposal made after receipt of discretionary advice. All pre-application advice is subject to review and revision in the light of changes in relevant considerations, including changes in relation to the facts, scientific knowledge/evidence, policy, guidance or law. Natural England will not accept any liability for the accuracy, adequacy or completeness of, nor will any express or implied warranty be given for, the advice. This exclusion does not extend to any fraudulent misrepresentation made by or on behalf of Natural England.

Yours sincerely

Marian Ashdown

Senior Adviser  
Sussex and Kent Team  
[Marian.ashdown@naturalengland.org.uk](mailto:Marian.ashdown@naturalengland.org.uk)

Cc [commercialservices@naturalengland.org.uk](mailto:commercialservices@naturalengland.org.uk)

## Annex A

### Detailed comments on the Air Quality Assessment:

#### Air Quality modelling assumptions and verification:

Previous DEFRA forecasts overestimated the reduction in emissions from vehicles based on technological improvements. It is my understanding that the Euro 6 standards that have been used in the updated DEFRA forecasts are now based on real on-road improvements and can be relied upon as best available evidence.

Much of the information provided in paragraph 3.11 relates to the historical issue of there not being the use of real world predictions in predicting emissions, including reference to studies undertaken in London. This is useful background information but should be interpreted with care as DEFRA forecasts have been updated and offer a more realistic forecast of emission reductions over time. Additionally, data from roadside locations in London may have little relevance to the national trend as results in the capital may be skewed to higher emissions, such as from an increase in heavy duty diesel powered vehicles (e.g. buses).

The assumptions that ammonia emissions may increase in future as discussed in paragraph 3.4 and 3.15 are largely based on speculation which is not a recommended scientific approach. A Defra report from 2012 has been cited for a predicted increase due to changes in agricultural processes but this may well be out of date. Ammonia dissipates very quickly from source and there are additional measures in place from catchment sensitive farming advisers across the country that are working with land owners to reduce pollutants; this is likely to adjust trends that were considered in 2012. Keeping background deposition rates for nutrient-nitrogen at the 2012-2014 value throughout the scenarios may be over precautionary but is acceptable as long as the results are assessed with this in mind.

With specific reference to paragraph 3.15, it is my understanding that newer catalytic converters utilise different technology to older versions of catalytic converters. I note that the same paragraph states that the COPERT model assumes no reduction in ammonia emissions and that DEFRA are actually predicting a decrease in ammonia. I am satisfied that the two scenarios taken forward for ammonia in the modelling is 'no increase' and 'a reduction' in line with DEFRA predictions.

A sensitivity test scenario has also been used in the modelling that assumes that not all forecast emission reductions will come forward. The adjustment factor of a 78% increase applied to Euro 6 light duty diesel vehicles does appear to be extremely high and some further explanation for this high increase would be useful. I note this is a precautionary approach considering the real world improvements within the DEFRA forecasts however it is useful to compare the real world forecasts against the sensitivity test.

The worst case scenario assumes no improvements at all and assumes emissions are held constant at 2015 levels. This is a highly unrealistic model and my advice is that it is not appropriate to use this scenario. My further comments on the output of the modelling do not discuss the worst case scenario.

Paragraph A2.6 in Appendix A2 of the air quality report gives a clear explanation regarding the modelling scenarios and states "*The results from the sensitivity test and worst-case scenarios are likely to over predict emissions from vehicles in the future*". I agree with this conclusion.

I note that the model has been verified using an existing roadside analyser. Paragraph 3.2 of the air quality report states "*it is considered suitable for use for this modelling as it is located on the A256 and has a similar layout and characteristics as the study area...*" however no grid reference or map has been supplied for the location of the analyser. Subject to verification that the surrounding environment of the analyser is similar to the modelling locations for Pevensy Levels, I am satisfied that the model is verified in this manner.

The air quality report also includes results based on the more detailed approach used on Ashdown Forest so any specific comments on this approach will be detailed within my advice on the Ashdown Forest air quality report due to be submitted shortly. There is no specific reason why this approach has been included for Pevensy Levels so my further comments on this will be limited to outputs rather than model assumptions.

I have no comments to make on the specific traffic model data as that is outside of Natural England's remit and does not fall under the scope of this advice. It is for Wealden District Council to decide what housing numbers are used and what is used for the in combination assessment, however I strongly recommend that an allowance is made for windfall developments if they are not included within the Local Plan figures.

APIS assigns no specific environmental benchmarks to Pevensy Levels SAC from air quality impacts as the site is water quality dependent (discussed further in Annex B). There is however a stated ammonia critical level noted under the SSSI designation on APIS. 1 ug/m<sup>3</sup> of ammonia has been incorrectly used as the critical level throughout the assessment. This is the critical level that should be used when lower plants are a notified feature however Pevensy Levels has no lower plant interest. The relevant critical level for higher plants is 3ug/m<sup>3</sup> as confirmed on the APIS website.

All the results throughout the air quality assessment have been assessed using the environmental benchmark for grazing marsh. This is the most relevant feature within the impact zone of the relevant roads, however detail of the relevance of grazing marsh to the conservation objectives of Pevensy Levels is explained further in Annex B.

#### General comments

It would have been extremely helpful for a number of tables to be included with fields for background, critical load, with plan, without plan, base, sensitivity, PC as percentage of critical load/level and furthest distance from road affected. This could have been put into one or two landscape tables at most and would present a clear picture of the outputs of the modelling. The maps presented throughout the report to show where the environmental benchmark are very helpful; particularly as they logically fit with the accompanying text.

My understanding is that the term "in combination" within the report relates to the comparison on the "with local plan" 2028 figures against 2014 baseline taking into account background improvements under the base scenario and sensitivity test. The term does not relate to "in combination" effects with other plans or projects as identified under the Habitats Regulations. Rather confusingly, the "with plan" scenario means assessing the Local Plan figures under TEMPRO (which is itself an "in combination" assessment) on a "with plan" and "without plan" basis. It would also be useful for the Wealden Local Plan process contribution alone (disaggregated from the TEMPRO modelling).

#### Results of the air quality report

The "in combination" assessments; used here in the context of the air quality report (i.e. the difference between the "with local plan" impacts and the 2014 baseline) appear to be the most relevant. For completeness I have considered both the "in combination" and the "with plan" scenarios for both the base and sensitivity test. The worst case scenario, as previously mentioned, is highly unrealistic and is not considered or discussed further.

#### **Impact Assessment using published guidance**

In combination:

The results considered show a reduction over the plan period when compared against the 2014 background level.

With Local Plan:

The following can be screened out as having a process contribution change that is below 1% of the critical load/level. 1% is the screening threshold beneath which impacts are not considered significant because 1% of the environmental benchmark is considered to be so small that anything less than this will be, in any event, not likely to be perceptible and significant. Current background levels are considered later should appropriate assessment be needed.

- 24hr Mean NO<sub>x</sub>
- Nutrient Nitrogen

Using published guidance, the only result that is over 1% of the benchmark is the Annual Mean NO<sub>x</sub> in both the base (1.3%) and the sensitivity test (2.1%) for the “with local plan” scheme.

#### Discussion

The background for the base scenario for maximum changes in NO<sub>x</sub> concentrations, even considering the increase of 1.3% of the environmental benchmark is still beneath the critical level so does not need to be considered further.

The sensitivity test identifies that there will be a minor increase of NO<sub>x</sub> concentration of over 1% of the environmental benchmark up to just 1m of the roadside. However this is the “with plan” scenario which doesn’t take into account forecast background improvements. The 2028 forecast will therefore still be below the baseline but the results will be very slightly retarding the background improvements.

#### **Impact Assessment for ammonia using alternative deposition velocities:**

In combination:

Results considered show a reduction over the plan period when compared against the 2014 background level apart from ammonia concentration relative to critical level on the sensitivity test and ammonia deposition in relation to the critical load for the sensitivity test.

With plan:

The following can be screened out as having a process contribution change that is below 1% of the critical load/level:

NO<sub>2</sub> deposition for both scenarios

NH<sub>3</sub> deposition for both scenarios

NO<sub>2</sub> and NH<sub>3</sub> deposition for both scenarios

Using alternative deposition velocities, the only results that are over 1% of the benchmark are ammonia concentrations in both the base (1.2%) and sensitivity (1.9%) tests for the “with local plan” scheme and ammonia concentration (6.2%) on the sensitivity test for the “in combination”.

#### Conclusion

The increase in ammonia concentration for the “with plan” assessment for both the base and sensitivity test scenarios will occur at just 2m and 5m respectively from the roadside edge. However the “with plan” assessment is not taking into account the expected reductions over time. These results will very slightly retard background improvements within a very small distance from the road edge.

The report identifies that increase in ammonia concentration for the sensitivity test “in combination” will occur up to approx. 25m from the roadside edge.

Using the correct critical level of 3µg/m<sup>3</sup> the increase in ammonia concentrations for the “with plan” assessment are below 1% of the critical load. The increase in ammonia concentration for the sensitivity test “in combination” falls to 2% of the critical level however as this correct critical level has not been modelled it is not possible to determine the extent of habitat that will be over 1% of the critical load.

## Annex B

### Implications of the air quality modelling on Pevensy Levels SAC and Ramsar site.

In undertaking an assessment of 'likely significant effects' under the Habitats Regulations, authoritative case law has established that:

- An effect is likely if it '*cannot be excluded on the basis of objective information*'<sup>1</sup>
- An effect is significant if it '*is likely to undermine the conservation objectives*'<sup>2</sup>
- In undertaking a screening assessment for likely significant effects '*it is not that significant effects are probable, a risk is sufficient*'.... **but there must be credible evidence that there is 'a real, rather than a hypothetical, risk'**<sup>3</sup> (my emphasis)

The Advocate General's opinion in *Sweetman* also offers some simple guidance that the screening step '*operates merely as a trigger*' which asks '*should we bother to check?*'<sup>4</sup>.

As such, when determining whether air pollution from a plan or project has a 'likely significant effect' upon a given qualifying feature under the Habitats Regulations, the extent to which there are risks of air pollution that might undermine the conservation objectives for the site is the key consideration.

Not all features of a designated site are present within a given location within the site. In some cases, a road surface and its adjacent verges may be included within a designated site boundary. This does not necessarily mean that it, and its associated verges, will be of nature conservation interest and form part of a qualifying feature. The inclusion of the hard surface of a road and/or its adjacent verges might simply have been unavoidable when denoting a boundary and included simply for convenience. These areas will therefore constitute 'site-fabric'<sup>5</sup>, being of no special nature conservation interest. Therefore, a site's conservation objectives are unlikely to apply equally to all parts of a site.

The spatial distribution of features within a site can help to decide whether or not appropriate assessment will be required. This is particularly relevant as contributions to air pollution from a road will typically decrease with distance away from that road. Where any sensitive qualifying features are not present within the area to be affected by emissions (and Natural England's advice is that there is no conservation objective to restore the features to that area), it is possible to ascertain that the plan or project poses no credible air quality risk to it.

With regard to Pevensy Levels, the SAC and Ramsar boundary overlays the roads within the site. The formation of the levels was dominated by the changing relationship between land and sea. The Levels themselves are a complex inter-bedded sequence of alluvial clays and peat. The peat layer is of variable thickness and fragmented in nature. It is generally overlain by at least one and a half metres of clay. The soils developed upon these substrates are described as "deep stoneless, mainly calcareous clayey soils of the Newchurch series of the Wallasea sub-group" (British Geological Survey, 1987).

---

<sup>1</sup> Case C127-02 *Waddenzee* (refer para 45)

<sup>2</sup> Case C127-02 *Waddenzee* (refer para 48)

<sup>3</sup> *Boggis v Natural England and Waveney DC* [2009] EWCA Civ 1061 (refer paras 36-37)

<sup>4</sup> Case C 258/11 *Sweetman* Advocate General Opinion (refer paras 49-50)

<sup>5</sup> 'Site-fabric' is a general term used by Natural England to describe land, water and/or permanent structures present within a designated site boundary which are not, and never have been, part of the special interest of a site, nor do they contribute towards supporting a special interest feature of a site in any way, but which have been unavoidably included within a boundary for convenience or practical reasons. Areas of site-fabric will be deliberately excluded from condition assessment and will not be expected to make a contribution to the achievement of conservation objectives.

The qualifying feature for Pevensey Levels SAC is the Lesser (or little) ram's-horn whirlpool snail, *Anisus vorticulus* for which this is considered to be one of the best areas in the United Kingdom.

Comparatively little is known about the ecology of this species, however it is likely that its requirements reflect those of the freshwater flora and fauna assemblage which is better understood. The Pevensey Levels, with an occupation of some 38% of sampled ditches, supports the largest known population of *Anisus vorticulus* in the UK.

The conservation objectives for the SAC are to maintain or restore;

- The extent and distribution of the habitats of qualifying species
- The structure and function of the habitats of qualifying species
- The supporting processes on which the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

Pevensey Levels has been notified as a Ramsar site as it is one of the largest and least fragmented lowland wet grassland systems in southeast England, including a small area of shingle and intertidal muds and sands. The low-lying grazing meadows are intersected by a complex system of ditches which support rare and scarce aquatic plants and invertebrates (freshwater molluscs and dragonflies *Odonata* spp) as well as breeding and wintering wildfowl.

The wet grassland supports a number of bird species including lapwing and snipe. Other bird species such as sedge and reed warblers breed within the scrub and reeds of the ditches. The site supports an outstanding assemblage of wetland plants and invertebrates including many Red Data Book species. The site is a eutrophic/mesotrophic system with ditch systems at different successional stages.

The 3 threats listed for the site under the Improvement Programme for England's Natura 2000 sites (IPENS)<sup>6</sup> are water pollution, inappropriate water levels and invasive species (within the ditch system).

With regard to water quality, the most important threat stated within the IPENS Site Improvement Plan (SIP) relates to higher than desired levels of phosphates. Primary production in almost all aquatic ecosystem is phosphorous (P) limited<sup>7</sup> and therefore the effects of nitrogen are not considered to be very important. This is not the case for lower estuarine and coastal systems where nitrogen is the limiting factor. Additionally sediment and heavy metals are likely to have a negative impact.

The most common pathways of impact for phosphorous are from water/sewage treatment works and application of organophosphates as fertiliser. The impacts of P can also be increased by low water flows<sup>8</sup>. The wet grassland/grazing marsh is maintained as a low nutrient system through agri-environment schemes to ensure that organophosphates are not introduced that would impact the water quality of the ditch habitat. Additionally Natural England liaise with the Environment Agency and the Pevensey and Cuckmere Water Level Management Board (PCWLMB) regarding water level management and appropriate management of water outputs which could have an impact on the site (through the Environment Agency's permitting function). Natural England does have specific water quality targets for the site including phosphorous, dissolved oxygen (DO), biological oxygen demand (BOD) and ammonia but these are "in water" targets relating to the Water Framework Directive (WFD). I can provide further detail of this after discussion with the site officer if required however she is currently on leave.

The results of the air quality assessment in the various scenarios that have been tested are that there are some minor increase in NOx and ammonia that will affect very small areas of grazing

---

<sup>6</sup> <http://publications.naturalengland.org.uk/publication/6057793526169600>

<sup>7</sup> Empirical nitrogen critical loads for natural and semi-natural ecosystems: 2002 update. Pages 86-87 (Bobbink et al 2003)

<sup>8</sup> Phosphorous: A rate limiting nutrient in surface waters (D.L. Correll 1999)

marsh habitat. As explained above, the wet grassland/grazing marsh is a supporting habitat and is managed as a low nutrient system (from organophosphates) to avoid pollution to the ditch habitats; however the main aspect of the designations that cover Pevensey Levels is the ditch habitat itself.

Pevensey levels SAC and Ramsar site is considered to be water quality dependant and in particular phosphorous limited so my advice is that the Local Plan poses no credible air quality risk to Pevensey Levels SAC and Ramsar.