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Marina Briggshaw
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: Lewes Downs Special Area of Conservation (SAC)**

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:

Lewes Downs SAC

Stage 1

- a) Review of air quality information
- b) Information held by Natural England relevant to HRA
- c) Potential impacts upon calcareous grassland
- d) Management on site and implications
- e) Appropriate Assessment requirements

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 Assessment: Lewes Downs SAC, Report number J2933/1/F2, Air Quality Consultants (12 September 2017)
- Email from Kelly Sharp on 9 November in response to questions in my email of 23 October
- Air Quality Assessment: Lewes Downs SAC, Report number J2933/1/F4, 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 Lewes Downs SAC alone or in combination with other plans and projects and no further assessment is required under the Habitats Regulations.

This advice is based on my knowledge of the topography of Lewes Downs SAC and the interest features for which it is designated. The only habitat likely to be impacted by air quality deterioration is woodland which is not a qualifying feature of the designated site.

My detailed comments on the air quality report and the implications of the results on the Lewes Downs SAC are within Annex A and B attached.

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

Cc 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 since 2012 additional measures have been put in place to help address agricultural emissions. Ammonia dissipates very quickly from source and across the country catchment sensitive farming advisers are now working with land owners to reduce pollutants. This is likely to have a positive impact on 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 A2.7 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 have concerns that the model has been verified by using just one roadside diffusion tube. A more rigorous scientific approach would use more than one diffusion tube and/or a control. The use of one tube raises questions as to the reliability of using this to calculate the adjustment factor from measured road to modelled road.

I agree that it is appropriate to discount wet deposition. Apart from the reasons outlined in paragraph A2.22 of the report, the steep upward slope of Lewes Downs close to the road is such that wet deposition is unlikely to occur.

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 Lewes Downs 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.

General comments

The report is complex and the presentation of the data does not aid understanding of the outputs. 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.

I welcome the inclusion of the contours presented in Appendix 3. These offer a helpful visualisation of where impacts are predicted to occur and enable analysis against GIS mapping, topography and personal knowledge of the designated site.

The term "in combination" within the report does not relate to "in combination" effects with other plans or projects as identified under the Habitats Regulations and this has caused considerable confusion when assessing the report. It would be helpful to have a non-technical summary at the start of the report to very clearly explain the meaning of "in combination" in the context of the air quality report. This aspect is noted in paragraph 3.3 and partially clarified in Section 7: Summary and Conclusions to confirm that the in combination scenario is the comparison of the "with local plan" 2028 figures against 2014. I am assuming that this also takes into account background improvements under the base scenario and sensitivity test. This section also explains that "with Local Plan" 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 to see the Wealden Local Plan process contribution alone (i.e. disaggregated from the TEMPRO modelling).

The percentages within the report do not always appear to be accurate so I recommend these are checked and amended where necessary. This is demonstrated, for example, in Table 16 where the annual mean nutrient Nitrogen deposition rate is predicted to fall 1.5 kg-N/ha/yr. The Critical Load is 15 but the difference as a percentage of the critical load has been expressed as -7.7% rather than -10%.

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.

As woodland is not a qualifying feature of the Lewes Downs SAC, there is no need to examine the results on this feature so it is not considered or discussed further in this section although it is discussed further in Annex B.

Impact Assessment using published guidance

In combination:

All 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_x
- Nutrient Nitrogen
- Acid-nitrogen deposition rates

Impact Assessment for ammonia using alternative deposition velocities:

In combination:

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

With plan:

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

- NO₂ deposition for base scenario
- NH₃ deposition for both base and sensitivity test
- NO₂ and NH₃ deposition for base scenario
- Acid-nitrogen deposition for all scenarios

Using published guidance, the only result that is over 1% of the benchmark is the Annual Mean NO_x in both the base (1.7%) and the sensitivity test (2.9%) for the “with local plan” scheme.

Using alternative deposition velocities, the only results that are over 1% of the benchmark are ammonia concentrations in both the base (1.6%) and sensitivity (2.6%) test, NO₂ deposition (1.1%) and NO₂ and NH₃ (1.7%) deposition in the sensitivity test for the “with local plan” scheme.

Conclusion

The results that are over 1% of the benchmark are from the “with plan” scenario which doesn’t take into account forecast improvements in background therefore the 2028 forecast will still be below the baseline but the results will be very slightly retarding the background improvements.

I have assessed Section 7: Summary and Conclusions which identifies the maximum distance which is affected by any increases over 1% of the benchmark against the contour diagrams and Natural England’s GIS system. Based on this information I can confirm that all areas affected fall within the woodland boundary of the site. Woodland is not a qualifying feature of Lewes Downs SAC.

Annex B

Implications of the air quality modelling on Lewes Downs SAC

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*'¹
- An effect is significant if it '*is likely to undermine the conservation objectives*'²
- 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*'³.

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?*'⁴.

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, the boundary of the site may include other features that may not form part of a qualifying feature. Therefore, a site's conservation objectives are unlikely to apply equally to all parts of a site. To clarify, woodland is part of the SSSI interest, but is not a qualifying feature of the SAC.

Calcareous grasslands are generally found on shallow soils that are less sensitive to air quality impacts than some other habitats due to their buffering capacity that render them less vulnerable to acidification. However there are a number of studies⁵⁶ that identify that high Nitrogen inputs can result in increases in *Brachypodium Pinnatum* (tor grass) which can spread through rhizome uptake of Nitrogen. Tor grass is a more dominant grass that may out compete and out shade specialist calcareous grassland species resulting in reduced species diversity.

Air quality impacts are cited as one of the risks on the site improvement plan for Lewes Downs SAC. Grazing is an integral part of the management of Lewes Downs to manage tor grass and scrub cover so that the orchid rich grasslands can flourish. The most important areas of the site are the sunny south facing slopes and grazing is focussed on these areas by Herdwick sheep as this species was found to be well adapted to grazing on these steep slopes.

The western edge of Lewes Downs SAC closest to the A26 and the area that could be impacted by air quality impacts has a thick belt of woodland cover. The topography of this area of Lewes Downs rises very steeply from the road; one area is actually a disused pit. The woodland is not one of the qualifying features of the site however it is a feature of the Site of Special Scientific Interest (SSSI).

The woodland belt currently functions as a buffer against air quality impacts onto the calcareous grassland and is also an important component of soil stability of the steep gradient. It is therefore not within the conservation objectives to remove this feature with any intention to restore to calcareous grassland.

¹ Case C127-02 *Waddenzee* (refer para 45)

² Case C127-02 *Waddenzee* (refer para 48)

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

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

⁵ Direct and indirect effects of nitrogen on species composition change in calcareous grassland (Van den Berg et al, 2010)

⁶ The effects of air-borne nitrogen pollutants on species diversity in natural and semi-natural European vegetation (Bobbink et al, 1998)

Calcareous grassland as the qualifying feature is not present within the area to be affected by emissions. There is no conservation objective to restore the feature to that area, so my advice is that the Local Plan poses no credible air quality risk to Lewes Downs SAC.