MATTER 14: THE ENVIRONMENT, CLIMATE CHANGE, AND SUSTAINABLE CONSTRUCTION (WCS12)

Main Issue – Whether the Core Strategy makes appropriate provision for the protection of the natural environment and other environmental assets and for sustainable construction.

Summary of Response – The Core Strategy relies on evidence which assesses the environmental impact of a low level of housing provision. The evidence does not prove that a higher level of housing would result in greater impacts. It is submitted that the Core Strategy is not based on robust evidence and did not consider reasonable alternatives. It is, therefore, 'unsound', as defined by Planning Policy Statement 12.

A) Has it been demonstrated that the Core Strategy would have no likely significant effects upon internationally important nature conservation sites?

1.1 No. Wealden District Council has carried out the necessary assessments, including a Habitat Regulation Assessment and various appropriate assessments relating to Pensevey Levels and Ashdown Forest. These assessments state that the proposed Core Strategy has the potential to have impacts on important nature conservation sites, but these impacts can be mitigated.

1.2 It should be noted, however, that these documents assess the proposed Core Strategy and do not consider alternatives such as the proposed housing figures or spatial distribution contained in the South East Plan and alternative sites which could result in lesser impacts. It is considered that there is no clear evidence to suggest that higher levels of development cannot be accommodated. As noted in paragraph 1.1 of the Appropriate Assessment: Hydrology Local to Pevensey Levels, the Habitats Directive promotes the use of mitigation measures and an examination of alternative options to avoid any potential damaging effects to a designated site. In addition, plans can be permitted if there are Imperative Reasons of Overriding Public Interest, such as those of an economic or social nature. Such alternatives are not properly considered in the Habitat Regulation Assessment or the various appropriate assessments.

1.3 The various environmental issues highlighted by the Core Strategy, such as nitrogen deposition and wastewater treatment, are presented as absolute constraints, which cannot be resolved. If the carrying capacity of the local environment prevents the delivery of an additional 1,400 houses in the medium term, the logical conclusion is that it will be impossible to deliver housing in Wealden beyond 2030. This is clearly unrealistic and unjustifiable.

1.4 Although the various documents in the evidence base state that the impacts of the Core Strategy can be mitigated, this assessment is based on a lower level of housing delivery. The Core Strategy states that the identified levels of housing provision cannot be delivered due to environmental constraints. It is submitted that there is no clear evidence of this.

B) Has the proposed 400m 'exclusion zone' around the Ashdown Forest Special Protection Areas (SPA) been justified by the evidence base?

1.5 No. The justification of the 400m exclusion zone appears to be limited to the Habitat Regulations Assessment (HRA).

1.6 The main effects of development close to the SPA, as identified in section 6.4 and 7 of the HRA are the increased use of the site, predation by domestic cats and flytipping. The basis for the 400m exclusion zone is a precedent set by Thames Basin Heaths SPA and the New Forest SPA. It is not clear that the Ashdown Forest SPA is the subject of comparable pressures given that Wealden is a largely rural area and the Thames Basin Heaths SPA and the New Forest SPA adjoin large built up areas such as Bracknell and Bournemouth. In addition, the HRA and the other documents in the evidence base do not consider alternatives to this strategy.

1.7 In summary, the 400m exclusion zone is not clearly justified in the evidence base. It is based on precedent, which may have been applied in different circumstances.

C) Has the proposed 7km zone around the Ashdown Forest SPA, within which contributions to Suitable Alternative Natural Green Spaces (SANGS) would be sought, been justified by the evidence base?

1.8 No. The justification of the 7km zone appears to be limited to the Habitat Regulations Assessment (HRA).

1.9 As above, the justification for the 7km zone is based on the precedent set by Thames Basin Heaths SPA. As noted in section 6.4 of the HRA, the number of visitors per hectare per day at Thames Basin is 3.7 and the number of visitors per hectare per day at Ashdown Forest is 2.17. It is not clear that provision of SANGS will divert potential visitors or that this policy is necessary, given that the precedent for this policy is based on a much more popular site. . In addition, the HRA and the other documents in the evidence base do not consider alternatives to this strategy.

1.10 In summary, the basis for the provision of SANGS is a precedent for a more popular site in a more developed area. The evidence base does not provide a clear justification for the application of a similar policy in this instance.

D) Is there adequate evidence that the scale of SANGS required can be identified and are deliverable?

1.11 No. There is no clear evidence that the proposed SANGS can be identified and delivered.

1.12 In response to the Inspector's concerns dated the 7th September 2011, the council notes that there is plenty of land on the fringes of the towns, as set out in the SHLAA. The sites included in the SHLAA came from various sources including brownfield land, surplus public sector land, land submitted during the issues and options consultation, existing commercial sites, etc. It is not clear which, if any, of these sites will be deliverable as SANGS.

1.13 In the case of Uckfield, the council states that 20ha of SANGS are required (response to the Inspector's concerns dated the 7th September 2011). Many of the "potentially suitable" SHLAA sites in Uckfield are relatively small. The largest SHLAA site in Uckfield has been identified as an urban extension in the Core Strategy. It is not clear if the other SHLAA sites are available for uses other than housing or are of sufficient size to provide a SANGS, which will divert visitors away from Ashdown Forest.

1.14 In summary, there is no clear evidence that the required SANGS can be delivered or will be of sufficient size to divert visitors from Ashdown Forest.

E) Has the evidence base adequately demonstrated that levels of development materially greater than those in the Core Strategy would be unacceptable in the light of the effects of nitrogen deposition on the Ashdown Forest Special Area of Conservation?

1.15 No. The evidence base does not clearly demonstrate that additional development will be unacceptable due to the impact of nitrogen deposition on Ashdown Forest.

1.16 The main assessment of the impact of nitrogen deposition is included in the HRA and the assessment of the increase of traffic relating to the submission core strategy (dated February 2011). As previously discussed, the HRA focuses on the proposed Core Strategy and does not consider alternatives.

1.17 As stated in the HRA (pg 24), the Core Strategy does not trigger the requirement for further assessment due to the limited annual average daily traffic (AADT) that it will create. It is submitted that the higher rate of housing provision cannot be assumed to result in unacceptable levels of nitrogen deposition unless it is properly assessed.

1.18 Pelham Holdings commissioned Southdowns Environmental Consultants Ltd to review the evidence base in relation to nitrogen deposition (Appendix 1 of this Matter). The report considered the impact of delivering the trend based housing requirements for the district. The results of the assessment show that the critical level for NO_x would not be exceeded. The report states that the predicted exceedance at Ashdown Forest will occur whether the current Core Strategy is implemented or the trend based requirements are provided. It is also noted that the method used for establishing nitrogen deposition is rather blunt and is likely to be an overestimate. The deposition of nitrogen in a 'worst case scenario' is unlikely to be significant. In any event, the 'worst case scenario' is unlikely to occur, as most nitrogen emitted in the area is likely to be deposited outside of the UK. The report also notes that the distribution of housing in the southern area of Wealden could help reduce any impacts on Ashdown Forest.

1.19 The evidence base does not include any evidence to suggest that increased development levels will result in increased nitrogen deposition levels on the Ashdown Forest SAC. A review of the likely outcome of increased development shows that the level of nitrogen deposition on the Ashdown Forest SAC is likely to be an overestimate and that the provision of additional housing is unlikely to cause the critical level of NO_x to be exceeded.

F) Is the limit on the quantity of residential development that might connect to the mains sewers relating to Halisham North and South Waste Water Treatment Works (WWTWs), aimed at protecting water quality in the Pevensey Levels candidate Special Area of Conservation (cSAC), justified by the evidence base? Have water metering and water efficiency measures been fully taken into account?

1.20 No. The limit on the quantity of residential development connecting to Halisham North and South WWTWs is not clearly justified.

1.21 The SEP had fully considered the infrastructure and environmental constraints within the District and impact of the policy SCT5 in terms of its allocation of 7,000 additional dwellings over the plan period at a rate of 350 dwellings per annum in the Sussex Coast Sub Region. This is evidenced in Footnote 3 to the Policy which acknowledges the potential constraint of development on the Hailsham Waste Water Treatment Works and requirement, therefore, to consider appropriate phasing of development.

1.22 The proposed limits are based on the current capacity of the WWTWs. As set out in paragraph 4.16 the Infrastructure Delivery Plan (February 2011), there are prospects of increasing capacity by 2018. In addition, section 8 of the Waste Water Position Statement (August 2011) indicates that various solutions to wastewater are being considered and investigated by Southern Water. The position statement indicates that the outcome of this process cannot be predicted due to a broad range of unknown factors. This approach is excessively cautious given that work is already underway to assess various options. The proposed plan and the supporting evidence does not give sufficient weight to the provision of additional wastewater treatment capacity. It is submitted that it is likely that there will be further opportunities to address any infrastructural deficits over the 24 year period of the plan.

1.23 As set out in the report by Cannon Consulting Engineers in Appendix 1 of the submission made on behalf of Pelham Holdings on the 18th April 2011, the Infrastructure Delivery Plan underestimates the headroom at the WWTWs by failing to consider water efficiency measures that are already taking effect through amendments to the building regulations. Paragraph 1.10 of Cannon Consulting Engineers report notes that there is an inconsistency within the Infrastructure Delivery Plan which calculates headroom on the basis of 500l per household per day, but refers to the Code 3 water efficiency levels of all new dwellings of 105l per head per day. Furthermore, paragraph 6.15 of the Appropriate Assessment: Hydrology Local to the Pevensey Levels (September 2010) refers to the Environment Agency requirement for all new dwellings built before 2016 to reach Code 3 in relation to water efficiency at a minimum. Paragraph 6.1 and the subsequent paragraphs of the Waste Water Position Statement (August 2011) refers to the use of the 500l of water per household per day. It is considered that 500l per household per day is far in excess of that required by an average household in a dwelling that complies with the building regulations in relation to water efficiency and is in excess of Code 3.

1.24 The 500l litre figure used to estimate headroom also appears to overestimate the volume of water reaching the sewers. Paragraph 7.1 of the Waste Water Position Statement (August 2011) states that the figure of 500l is based on consumption of water per household. Paragraph 7.4 states large volumes of water consumed by a household do not enter the sewer, for example water used in the garden or to wash cars. Given that the relevant factor

in relation to the headroom of the WWTWs is the volume of water to be treated rather than the volume consumed, it is considered that the large volume of water which is consumed but does not reach the sewer should be considered in calculating the headroom of the WWTWs.

1.25 Note 2 of Appendix A of the Infrastructure Delivery Plan (August 2011) states that although water efficiency measures are now required in accordance with the building regulations, there is nothing to prevent homeowners from replacing water efficient appliances with standard appliances. This is cited as one of the reasons for assuming a daily household water consumption of 500l. It is also true that there is nothing to prevent a homeowner making a house less energy efficient, for instance, by replacing double glazed windows with single glazed windows. This does not mean, however, that many householders regularly reduce the energy efficiency of their homes. Given the potential for compulsory water metering to be introduced and that households will be charged for water consumption by quantity, there is a strong economic incentive to prevent the removal of water efficiency measures.

1.26 In summary, the Core Strategy and the supporting evidence does not account for:

- the potential to provide additional WWTWs capacity in the future;
- the introduction of regulations to reduce the use of water; and
- that the volume of water consumed does not necessarily relate to the volume of water to be treated;

the figure of 500l of water per household per day appears to be excessively cautious and is does not account for future water efficiency requirements.

G) If the headroom level at the two WWTWs has been justified, has it been demonstrated that all alternative options that would permit growth beyond this are being explored? Has it been shown that these options could not be delivered and that the headroom limit could not be removed during the plan period?

1.27 No. As outlined above in Matter 14F above, the headroom level is not justified. Furthermore, alternative options to permit growth have not been properly considered.

1.28 Paragraph 9.22 of the South East Plan states that if a local authority does not provide the required housing numbers, it must demonstrate that this is the only way to avoid impacting on a European site. The council must show that it has attempted to avoid adverse impacts through testing various distribution options and by showing that the mitigation of impacts would be similarly ineffective. It is submitted that the council has not demonstrated that alternative options are not appropriate or that mitigation would not be effective. There does not appear to be a systematic analysis of alternatives or mitigation measures. The Core Strategy treats various environmental issues as absolute constraints rather than problems that can be solved.

1.29 As outlined under Matter 14F above section 8 of the Waste Water Position Statement (August 2011) indicates that various solutions to wastewater are being considered and investigated by Southern Water. The position statement indicates that the outcome of this process cannot be predicted due to a broad range of unknown factors. It would appear that the various alternative solutions and the potential for additional capacity in the future have not been adequately considered. It is considered that, in the absence of any evidence

that additional headroom cannot be provided in the future and considering that the headroom is underestimated, the proposed housing levels are not justified.

1.30 In summary, the council has not provided any evidence to show that alternative options to deliver capacity at the WWTWs and to permit growth were fully explored. Southern Water has started to consider such options, but this is not reflected in the Core Strategy.

H) Should the Core Strategy give more guidance on the approach to water efficiency in the new development?

1.31 Yes. Although it could be considered sufficient to apply the building regulations, the particular relevance of water efficiency is in relation to the calculation of the future capacity of the WWTWs. It may be beneficial, therefore, to provide guidance regarding the required code levels for specific developments, where this is necessary in order to meet the constraints of wastewater treatment works. This could then be followed through in the Strategic Sites Development Plan Document.

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Appendix 1: Memorandum: Air Pollution and Nitrogen Deposition at European sites relevant to the housing in the Wealden Core Strategy

APPENDIX 1: MEMORANDUM: AIR POLLUTION AND NITROGEN DEPOSITION AT EUROPEAN SITES RELEVANT TO THE HOUSING IN THE WEALDEN CORE STRATEGY

MEMORANDUM

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Date: 18th October 2011 **From:** Adam Glass CEnv CSci MIAQM (Southdowns)

To: Jenny Owen (Jennifer Owen & Associates)
Cc: Philip Evans (Southdowns)
Doc. Ref No: 1697e-SEC-00003-02 Air pollution and nitrogen deposition at European sites relevant to the housing allocations in the Wealden Core Strategy

Air Pollution and Nitrogen Deposition at European Sites Relevant to the Housing Allocations in the Wealden Core Strategy

1. Introduction

Southdowns has been instructed by Jennifer Owen & Associates Limited to:
i. Review the 2 reports (Habitat Regulations Assessment for the Wealden Core Strategy - 2011 & Appropriate Assessment and Air Quality Local to the Pevensey Levels Ramsar Site - 2009), the letter from the Inspector and Jennifer Owen's response.
ii. Consider the assessment methods provided in the reports and the conclusions with regard to capacity on the network and associated AQ effects to:
a. Confirm or otherwise that the approach/assessment methods are valid/appropriate; and
b. Confirm there is significant highway capacity in terms of AADT headroom based upon current/future AQ effects.

The main pollutant effects of interest are related to the critical level of NO_x and the critical load of nitrogen (N) deposition. The critical level for NO_x is the concentration of atmospheric NO_x at which direct adverse effects on vegetation can be observed. The critical load is a quantitative estimate of the deposition of N, below which significant adverse effects to vegetation do not occur.

Natural England's policy is to apply a 30 μmg^{-3} limit for NO_x[1] at internationally designated conservation sites on a precautionary basis. Although the limit value is for NO_x, it is NO_2, which forms part of the NO_x concentrations along with NO and other oxides, which is of concern as it is taken up by plants through the stomata and can cause deleterious effects such as cell breakdown. The residence time of oxidised nitrogen in the atmosphere is approximately 30 hours; the mean travel distance for oxidised nitrogen before it is deposited is around 1,000 km. 70% of oxidised nitrogen emitted from UK sources is a transboundary pollutant exported from the UK. NO_2 is involved in N deposition, the components of nitrogen deposition are summarised by the equation:

[1] COUNCIL DIRECTIVE 1999/30/EC of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air. OJEN, L 163/41.

$$N\ deposition = NO_2dry + NO_2wet + NH_3dry + NH_3wet$$

The amount of N deposited before significant adverse effects occur varies with habitat and is measured in $kgNha^{-1}yr^{-1}$.

2. Review of Previous Studies and Consideration of Methodology

The following documents have been reviewed and commented on:

The Appropriate Assessment and Air Quality Local to the Pevensey Levels Ramsar Site (June 2009)

The assessment that the DMRB Annex F assessment method for modelling N deposition is appropriate for an EIA or project level Appropriate Assessment (AA) but not for a strategic level AA. Therefore, a revised approach has been used based on the UK Air Pollution Information System (APIS)[2] and estimation of relative increases in traffic. The percentage increase in traffic has been used to indicate the percentage increase in NO_x relative to the critical level and N deposition relative to the critical load. The report concludes that neither the critical load nor the critical level will be exceeded at the Pevensey Ramsar site.

The methodology and findings of the AA following the precautionary approach is agreed for a strategic level AA. Nevertheless, the AA makes the worst case assumption that all the NO_x emitted from the adjacent A259 will be deposited within the Ramsar site, whereas, in reality, most NO_x emitted from a road will disperse and be deposited distant to the road. Since the 2009 AA was produced, updates in APIS predict a reduction in N deposition levels, and updates to the Defra local air quality management support pages[3] predict declining background levels of NO_x and NO_2. This means that the potential headroom in terms of N deposition, and thus AADT, will have increased beyond those calculated in the assessment.

Habitat Regulations Assessment for the Wealden Core Strategy (February 2011)

The HRA screening identified increasing atmospheric pollution through traffic growth and that the sites most sensitive to atmospheric pollution were:

- Ashdown Forest SAC: European dry heaths and Northern Atlantic wet heaths; and
- Lewes Downs SAC: semi-natural dry grasslands and scrubland facies on calcareous substrates.

The HRA used the DMRB HA207/07 section 3.12[4] screening criteria of:

Road alignment will change by 5 metres or more; or

- Daily traffic flows will change by 1,000 AADT or more; or
- Heavy Duty Vehicle (HDV) flows will change by 200 AADT or more; or
- Daily average speed will change by 10 km/hr or more; or
- Peak hour speed will change by 20 km/hr or more.

The guidance states that, if none of the roads in the network meet the traffic/alignment criteria, thus are not affected roads, or there are no relevant designated sites near the affected roads, then the impact of the scheme can be considered neutral in terms of local air quality and no further work is needed. The assessment details a traffic flow calculation process that concluded that none of the

[2] http://www.apis.ac.uk/
[3] http://laqm.defra.gov.uk/
[4] http://www.dft.gov.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf

roads meet the screening criteria and there would be no effects on the ecological integrity of the Ashdown Forest SAC or the Lewes Downs SAC as a result of the Core Strategy[5] (CS).

Southdowns agrees with the methodology and findings of the assessment. Nevertheless, with the housing allocation for the 'Trend Based Requirement' (TBR), the assessment criteria of 1,000 AADT is exceeded which would trigger the criteria for further assessment and, at project level\EIA, would trigger a DMRB HA207/07 Annex F assessment. Further assessment, at a strategic level, is provided in this memorandum.

Examination in the Wealden District Core Strategy: Exploratory Meeting Summary of Inspector's Concerns

The main concerns regarding air pollution from traffic relate to the impact on European sites in the form of N deposition affecting the SACs. Policy NRM5 of the CS, at para 9.22, indicates that, where the development plan makes a lower provision than the Regional Strategic Strategy[6] (RSS), it will need to be demonstrated that this is the only means of avoiding or mitigating adverse impacts on European sites. Different distribution options for the housing allocations and the traffic generated by them will need to have been considered to avoid adverse effects or mitigation and be shown to be ineffective before the reduced allocations can be considered. Though the HRA concludes that the CS will have no adverse ecological effects on the European sites as a result of atmospheric pollution, the Inspector points out that the assessment did not consider the higher level of traffic growth that might be associated with the RSS figures and that it is therefore not clear whether N deposition would be a factor of concern in the achievement of the RSS housing figures.

Southdowns agrees that the precautionary approach should be applied and that further consideration is required on the impacts of air pollution and nitrogen deposition on the ecological integrity of the SACs. Further assessment against the traffic associated with the TBR housing figures is reported later in this memorandum.

Jennifer Owen's Response Letter to the Inspector's Findings

The response highlights that the Sustainability Appraisal for the CS indicates that air pollution will be worse under the CS as the distribution of housing is car based. Para 1.2.3. states that the Council has sought to argue that there are environmental and infrastructure restraints which prevent the delivery of any greater number of dwellings than 9,600 during the period 2006 – 2030. The principal constraints which have been identified by the Council are impact on the Ashdown Forest and Pevensey Levels, the latter principally due to waste water discharge, transport infrastructure and higher education provision more particularly for Uckfield.

Southdowns agrees that the impact of the housing allocations on the ecological integrity of the SACs and SPA is dependent on the location of the housing allocations and that mitigation can be applied in the form different geographic locations to avoid potential adverse effects on the European sites.

3. Highway Capacity

Though none of the roads met the screening criteria with the housing allocations in the CS, if the housing allocations for Wealden from the TBR are multiplied by the ratio of the TBR\CS, the 1000

[5]http://www.wealden.gov.uk/Wealden/Planning_and_Building_Control/Planning_Policy/Local_Development_Framework/CoreStrategy/Planning_Submission_Core_Strategy.aspx

[6]http://webarchive.nationalarchives.gov.uk/20100528142817/http://www.gos.gov.uk/497648/docs/171301/815607/815696/Pages_from_RSS-3_Section_B.pdf

AADT criteria for further DMRB assessment at project level is met, i.e. further assessment work is required to determine the significance of effects. This memorandum provides a further assessment at strategic level. The increases in AADT used in this assessment are shown below in Table 1. For the purposes of this strategic assessment, an AADT of 30,000 has been used for the AADT with CS in 2021 for the A26 and A259, which passes through the SACs and Ramsar sites respectively. This figure was used as a reasonable worst case proxy and was based on traffic figures reported in the HRA, Wealden Updating and Screening Assessment 2010 and various reports used in the production of the East Sussex Local Transport Plan, projected to 2020. The AADT capacity for the critical level and critical load has been calculated using the DMRB air quality spreadsheet tool[7]. The calculated AADT capacity for the relevant roads in the European sites in 2020 is given for the critical level (Table 2) and the critical load (Table 3).

Link	Additional AADT CS	Additional AADT TBR
Ashdown Forest SAC		
A26 Maresfield - Duddleswell Road	773	1353
A26 Duddleswell Road - Crowborough	950	1663
Lewes Downs SAC		
A26 north of Lewes	771	1349

TABLE 1 - ADDITIONAL AADT AS A RESULT OF CS AND TBR ON ROADS IN THE VICINITY OF THE SAC AND SPA

[1] Additional AADT for the TBR has been calculated by a ratio of 16 800/9 600 to reflect the ratio of the housing allocations between the TBR and the CS for the period 2006 - 2030.

Site	Grid Reference	Year	Background NO_x μgm^{-3}	Calculated Road NO_x from existing traffic and TBR housing allocations μgm^{-3} @ 20 m from road[1] for 30,000 AADT	Calculated total NOx @ 20 m from road	Critical Level	Headroom in AADT above TBR housing allocations
Ashdown Forest SAC	546171, 128150	2020	7.7	11.5	19.2	30	120,000
Lewes Downs SAC	543831, 109682	2020	9.4	11.5	20.9	30 (but exempt)	100,000
Pevensey Levels Ramsar	565770, 105770	2020	9.1	11.5	20.5	30	105,000

TABLE 2 - CALCULATED NO_X LEVELS AND AADT HEADROOM FOR THE CRITICAL LEVEL

[1] 20 m from the centre of the road.
[2] 2020 is used for the assessment year but includes the entire plan (until 2030) allocations.

Year	Habitat	Critical Load for N deposition $kgNha^{-1}yr^{-1}$	Calculated Nitrogen deposition (APIS) projected for 10 years @ 2% reduction per year	Deposition of N as % of minimum CL	Calculated increases in NO_2 μgm^{-3} as a result of difference between CS and TBR AADT	Calculated increases N deposition $kgNha^{-1}yr^{-1}$ as a result of difference between CS and TBR AADT	Headroom AADT above TBR housing allocations for Critical Load for N deposition
Pevensey Levels Ramsar							
2021	Grazing Marshland	20	11.9	60	0.1	0.01	250,000
Lewes Downs SAC							
2021	Semi natural dry grasslands	15 - 25	14.7	98	0.2	0.02	14,000 at lower CL
Ashdown Forest SAC							

[7] http://www.dft.gov.uk/ha/standards/guidance/air-quality.htm

2021	Atlantic Heath	10 - 20	12	120	0.1	0.01	0 at lower CL 250,000 at higher end

TABLE 3 - IMPACTS OF THE INCREASES IN AADT AND DEPOSITION OF N FOR CRITICAL LOAD TO BE EXCEEDED AFTER 2021

[1] 2021 is used for the assessment year but includes all the plan (until 2030) allocations.

[2] The worst case assumption of all NO_2 emitted from the road being deposited in the SAC or Ramsar has been made, which is unlikely to occur.

[3] Based on a deposition velocity for NO_2 of 0.001m/s (taken from EMEP Eulerian photochemistry module). 1 μgm^{-3} of NO_2 = 0.1 $kgNha^{-1}yr^{-1}$

4. Discussion

At no locations was it indicated the critical level for NO_x would be exceeded (Table 2). There is substantial headroom on the roads in the SAC and Ramsar sites with the level of traffic associated with the TBR housing allocations against the critical level. It should also be noted that the 30 μgm^{-3} critical level for NO_x only applies at distances greater than 5 km from built up areas[8], industrial installations or motorways. This effectively removes the Lewes Downs SAC from the requirement for the critical level not to be exceeded and also areas of the Ashdown Forest SAC near Crowborough and areas of the Pevensey Levels near Eastbourne. The Department for Transport has defined 2 μgm^{-3} as representing an increase in NO_x concentration, as a result of traffic, that would give cause for concern[9]. The increases in NO_x, as a result of the higher AADTs in the TBR relative to the CS, are well below 2 μgm^{-3} and therefore are not a cause for concern.

The ecological specialist stated:

APIS was used as the basis for establishing existing ambient levels of NOx deposition at the various SAC sites. APIS is an extremely blunt instrument, and in my experience essentially rural roadside locations that are not downwind of major concentrations of NOx generating industry will often yield much lower levels than predicted by APIS if site specific studies are carried out.

This statement is agreed by Southdowns.

Only at the Ashdown Forest SAC is it indicated that the minimum critical load estimate for nitrogen deposition will be exceeded. This predicted exceedance will occur with or without the CS or TBR housing allocations and, as considered by the ecologist, the APIS derived N deposition rate, is likely to be a considerable over-estimate. The mean critical load estimate and maximum critical load estimate are not at risk of being exceeded. Nevertheless, the change in N deposition at the Ashdown Forest SAC that would result from the traffic associated with the TBR is 0.01 $kgNha^{-1yr}$ and not considered to be significant. This is with worst case assumptions and, in reality; most of the NO_x emitted is likely to be deposited around 1,000 km away.

For project level AA or EIA, the assessment would follow DMRB HA207/07 Annex F methodology. For model verification, the levels of atmospheric nitrogen oxides could be measured through a 6 month NO_2 diffusion tube survey transect within 200 m of the roads detailed above. This would be within the European sites detailed in this report to establish compliance with the critical level for NO_x as NO_2 and deposition rates for the critical load of N. Traffic monitoring around the SACs and Ramsar could also be used to confirm traffic levels on the relevant roads. A site specific study of N deposition in the Ashdown Forest SAC could be conducted at the project level to give a more robust N deposition rate to compare to the N critical load. Distribution of the housing allocation in the southern area of Wealden could help reduce any potential impact on the Ashdown Forest SAC.

[8] http://www.dft.gov.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf footnote 36

[9] http://www.highways.gov.uk/aboutus/documents/CRS_536611_IAN_61_05.pdf DMRB Stage 2-A) NO_x concentrations 4

5. Conclusions

Although there will be a likely increase in traffic on roads in the vicinity of the European Sites, previous studies have concluded that it is unlikely that there will be an adverse effect on the integrity of European sites. Southdowns agrees with these findings. Atmospheric NO_x concentrations and N deposition from NO_2 is predicted to decline through improvements in exhaust emissions throughout the period of the CS.

At a strategic level, there is no predicted adverse effect on the integrity of European sites relating to the NO_X critical level and N critical load from the housing allocations levels proposed for the Wealden area from the CS or those from the TBR. The housing allocations from the TBR can be used for the CS without significant additional adverse impacts from air pollution. No measures to avoid or mitigate effects will be required. Further assessment will occur at project level at the appropriate time to ensure that the ecological integrity of the European sites is not adversely affected. Therefore, from the above we can conclude that there are no constraints from the critical level of NOx and the critical load of N deposition at European sites on the proposed development at Polegate (Honey Farm), relative to other current or future housing allocations in the area. Allocation of housing at Polegate rather than near the Ashdown Forest SAC will help to reduce any potential impact on this European site.