

Report to Friends of the Earth

Review of the Further Proposed Changes to the East of England Plan

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1. Introduction

The Secretary of State's Further Proposed Changes to the Draft Revisions to the Regional Spatial Strategy for the East of England (EoE RSS) that:

"The Secretary of State's Proposed Changes were assessed against the requirements of the European Habitats Directive... In response to representations on that original assessment by the Regional Assembly, Natural England and others, the assessment was revisited... and a number of additional changes made to ensure that the Regional Spatial Strategy is fully compliant with the requirements of the Directive. Hence the policies of this Plan do not give rise to any adverse effects on the integrity of sites of European or international importance for nature conservation" (para. 1.10)¹.

This report discusses whether, as it claims, the EoE RSS fulfils the requirements of the Habitats Directive. It

- summarises the requirements for 'appropriate assessment' of plans in the UK;
- summarises the main reasons for why the original assessment was revisited;
- considers the adequacy of the current assessment
- discusses whether the Secretary of State's further proposed changes adequately respond to the issues arising from the second assessment
- concludes with recommended next steps

2. Habitats Regulations requirements

This report assumes that the reader is familiar with the European Habitats Directive's² and UK Habitats Regulations³ requirements for 'appropriate assessment' of plans. Box 1 provides key excerpts from the regulations. In brief, they impose a sequential assessment process of up to four stages: 1. screening, 2. appropriate assessment, 3. assessment of alternative solutions, and 4. assessment of compensatory measures.

The regulations, which implement the Habitats Directive's requirements for appropriate assessment of plans in England and Wales, came into force between the publication of first and second EoE assessments. Consequently the two appropriate assessments for the EoE RSS conveniently have different names: 'Habitats Directive Assessment' (HDA) and 'Habitats Regulations Assessment' (HRA).

The October 2007 HRA for the EoE RSS is a stage 2 appropriate assessment. Essentially the Government Office for the East of England is claiming, in paragraph 1.10, that the HRA can stop at stage 2 and does not need to proceed to stage 3.

¹ Government Office for the East of England (October 2007) Schedule of Further Proposed Changes and Reasons, http://www.gos.gov.uk/goee/docs/193657/193668/Regional_Spatial_Strategy/schedule1.

² European Community Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, <http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1992/L/01992L0043-20070101-en.pdf>.

³ The Conservation (Natural Habitats, &c) (Amendment) Regulations 2007, S.I. 2007 No. 1843, Part IVA 'Appropriate assessments for land use plans for England and Wales', <http://www.opsi.gov.uk/si/si2007/20071843.htm>.

Box 1. Appropriate assessment for land use plans for England and Wales: Requirements of the Habitats Regulations: excerpts

85B. —(1) Where a land use plan—

(a) is likely to have a significant effect on a European site in Great Britain or a European offshore marine site (either alone or in combination with other plans or projects), and
(b) is not directly connected with or necessary to the management of the site,
the plan-making authority for that plan shall, before the plan is given effect, make an appropriate assessment of the implications for the site in view of that site's conservation objectives.

(2) The plan-making authority shall for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority specifies.

(3) They shall also, if they consider it appropriate, take the opinion of the general public, and if they do so, they shall take such steps for that purpose as they consider appropriate.

(4) In the light of the conclusions of the assessment, and subject to regulation 85C (considerations of overriding public interest), the plan-making authority or, in the case of a regional spatial strategy, the Secretary of State shall give effect to the land use plan only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be)...

85C. —(1) If the plan-making authority is satisfied that, there being no alternative solutions, the land use plan must be given effect for imperative reasons of overriding public interest (which, subject to paragraph (3), may be of a social or economic nature), they may give effect to the land use plan notwithstanding a negative assessment of the implications for the European site or the European offshore marine site (as the case may be).

(2) In relation to a regional spatial strategy under Part 1 (regional functions) of the 2004 Planning Act, paragraph (1) applies to the Secretary of State as it applies to a plan-making authority in the case of any other land use.

(3) Where the site concerned hosts a priority natural habitat type or a priority species, the reasons referred to in paragraph (1) must be either—

(a) reasons relating to human health, public safety or beneficial consequences of primary importance to the environment, or

(b) any other imperative reasons of overriding public interest, provided that the competent authority has had due regard to the opinion of the European Commission in satisfying themselves that there are such reasons....

A key principle of appropriate assessment is the precautionary principle. The main European Commission guidance on appropriate assessment notes that:

“Implicit in the habitats directive is the application of the precautionary principle, which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty... This means that the emphasis for assessment should be on objectively demonstrating, with supporting evidence, that

- *there will be no significant effects on a Natura 2000 site (Stage One: Screening);*
or
- *there will be no adverse effects on the integrity of a Natura 2000 site (Stage Two: Appropriate Assessment); or*
- *there is an absence of alternatives to the project or plan that is likely to have adverse effects on the integrity of a Natura 2000 site (Stage Three: Assessment of alternative solutions); or*

- *there are compensation measures which maintain or enhance the overall coherence of Natura 2000 (Stage Four: Assessment of compensatory measures).⁴*

3. The Habitats Directive Assessment for the EoE RSS

The original Habitats Directive Assessment for the EoE RSS was prepared by ERM in December 2006. It preceded the publication of the amendments to the Habitats Regulations. The HDA concluded that the RSS was unlikely to have a significant effect on European sites⁵, and that stage 2 appropriate assessment was thus not needed. This conclusion was based on a policy-by-policy analysis of the RSS, sifting out those policies unlikely to affect European sites; and various statements in the RSS, notably policy ENV3, which stating that development should avoid affecting the integrity of European sites.

The HDA was withdrawn in Spring 2007. No official reason was given for why this was done. However limitations of the HDA included:

- A focus on plan policies rather than European sites;
- Lack of consideration of ‘in combination’ impacts with other plans and projects, and indirect effects of the RSS, for instance increased water abstraction;
- Over-reliance on Policy ENV3 when concluding that the RSS would have no significant impacts, although the presence of such a policy does not necessarily mean that it will be fully implemented;
- Over-reliance on the ‘caveat approach’: on adding caveats to RSS policies to the effect that development will be promoted “unless it is likely to have a significant impact on the integrity of European sites”. This devolves the problem down to local-level plans, which contradicts the whole point of carrying out HDA for the RSS.
- Inconsistency between the HDA conclusions, and other parts of the HDA which suggested that some developments promoted in the RSS could significantly affect the integrity of European sites;
- Inconsistency of the HDA findings with the findings of previous similar assessments for other RSSs (e.g. South East, Yorkshire and Humber); and
- A general lack of precautionary approach

These limitations were so great that the HDA was arguably not Directive compliant. Rumours of judicial review proceedings against the RSS and HDA may well have contributed to the decision.

⁴ European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites, http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf.

⁵ joint term for Special Protection Areas, Special Areas of Conservation and Ramsar sites

4. The October 2007 Habitats Regulations Assessment for the EoE RSS

The HRA is composed of three separate reports: on air pollution⁶, recreation⁷, and water (combining water quality, water resources and flooding)⁸.

The reports on recreation and water introduce the topics, provide background data, and then analyse in considerable depth, site by site, the RSS's likely impacts on the European site. Each site analysis, in turn, discusses the site's vulnerability, RSS policies which could affect the site, potential 'in combination' impacts, likely impacts using a source – pathway – target model, mitigation measures using the same model, and whether the RSS is likely to have significant impacts on the site's integrity.

The air pollution report describes, for each European site that is sensitive to air quality, current baseline air quality conditions at the site, and then predicts likely NO_x levels in 2021 using an adjustment factor provided by the National Air Quality Archive. It applies a Department for Transport model to the road projects proposed in the Regional Transport Strategy to identify likely future NO_x concentrations due to these roads. This is then added to the 2021 baseline and tested against 1. the National Air Quality Standard for NO_x and 2. the critical load range for nitrogen deposition for that site.

4.1 Strengths and weaknesses of the HRA

Overall the quality of the HRA is significantly better than that of the HDA, and is comparable with that of other HRAs for RSSs. *Strengths of the HRA* include:

- Focus on European sites not RSS policies; detailed analysis of existing condition and likely future impacts on each site
- Focus on five key impacts of the RSS (air, water quality, water resources, flooding, recreation)
- Consideration of some key 'in combination' impacts: other regions' RSSs for the water report, and an impressively wide range of more local plans and projects for the recreation report*
- Source-pathway-target approach to identifying significant impacts*
- No over-reliance on the 'caveat approach'
- Much greater consistency with other RSS HRAs than the previous HDA

* Done to a higher standard than other HRAs of RSSs

The key *weakness of the HRA* is its combination of lack of consideration of some issues/impacts and lack of explanation for why they have not been considered. It neither directly assesses nor clearly screens out the impacts of airports, offshore wind turbines, ports and urbanisation, all of which have been screened in by other HRAs of RSSs. It is probably right to screen some of them out (though this could be better documented), but the RSS's port proposals and its targets for provision of renewable energy by offshore wind farms should arguably be formally assessed (see Appendix A). The 'in combination' effect of different types of impact on European sites (e.g. air pollution and

⁶ http://www.gos.gov.uk/goee/docs/193657/193668/Regional_Spatial_Strategy/air1

⁷ http://www.gos.gov.uk/goee/docs/193657/193668/Regional_Spatial_Strategy/recreation1

⁸ http://www.gos.gov.uk/goee/docs/193657/193668/Regional_Spatial_Strategy/water1

recreational impact) is not addressed. We also have concerns about the air quality report, which are discussed at Appendix B.

4.2 Findings of the water report

The report concludes that the integrity of three European sites could be significantly affected by flooding and water quality impacts due to the RSS:

“We have not been able to conclude that some of the policies of the draft East of England RSS would not have an impact on the integrity of the European sites... [because of] the requirement to expand and upgrade the STWs [sewage treatment works] in the region to meet the growth identified in the draft RSS... the expansion and upgrading of some of these STWs are constrained and may have an impact on the integrity of European sites.... Table 21.1 lists the European Sites for which we could not conclude that there would not be an adverse impact on the integrity of the site due to policies and growth identified in the draft RSS East of England.”

Table 21.1

Name	Constraints on expansion of STW	Impact
Lee Valley SPA/Ramsar	<i>If there is a requirement to expand the STW site beyond existing boundaries, there are a number of environmental constraints. The expansion of the STW is constrained by its designation as a SNCI and as a SSSI. Proposals to extend into a section of SSSI would require assent [from] Natural England and would require an EIA.</i>	<i>Potential loss of habitat within the SPA/Ramsar site Potential increase in the effluent discharge of STW. This may cause flooding of the Lee Valley SPA/Ramsar Site and will decrease the water quality that is available to the target species/habitats.</i>
Ouse Washes SAC/SPA/Ramsar	<i>Expansion and growth will result in increased flood risk in the receiving watercourse of the STW.</i>	<i>Potential increase in the effluent discharge of STW. This may cause flooding of the Ouse Washes SAC/SPA/Ramsar Site and will decrease the water quality that is available to the target species/habitats.</i>
Portholme SAC	<i>Expansion and growth will result in increased flood risk in the receiving watercourse of the STW.</i>	<i>Potential increase in the effluent discharge of STW. This may cause flooding of the Portholme SAC and will decrease the water quality that is available to the target species/habitats</i>

The RSS also noted, for Rutland Water, that

“the East of England Plan policy for increased housing numbers in the reservoir supply zone can be implemented without adverse effects on Rutland Water. This is conditional on the implementation of the mitigation measures that have been identified in the Appropriate Assessment [for the reservoir]. It is also conditional upon there being no significant increase in housing numbers in the supply zone of Rutland Water through increases in house building targets in the later states of the approval of the three relevant Regional Plans.”

4.3 Findings of the recreation report

The report concludes:

“There were 4 sites for which the conclusion was that recreation, access and leisure use would have an adverse impact on a European or Ramsar site due to the policies and growth identified in the draft East of England RSS acting alone or in-combination with another policy, plan or programme of a statutory body. These sites are Breckland SAC, Breckland SPA, Great Yarmouth North Denes SPA, Stour and Orwell Estuaries SPA and Ramsar site (bird and non-bird interests)” (para. 2.1).

Likely impacts on *Breckland SAC* are due to a growth in the population of Thetford very close to the SAC. The report recommends that “Consideration should be given to the policy being conditioned with a delay on implementation or phasing of development while detailed capacity and risk reduction studies are under way.” (para. 2.6)

Likely impacts on *Breckland SPA* are due to recreational disturbance to the stone curlews, woodlark and nightjar which are interest features for the site. The study notes that

“there is an ecological basis for a different approach to be taken for stone curlew – the location of development is critical – compared to Nightjar and Woodlark – where greenspace provision and access management have a valuable role to play in avoiding impacts” (para. 2.8).

It recommends that policy TH1 should be conditioned with a delay on implementation or phasing of development while detailed capacity and risk reduction studies are underway.

Likely impacts on *Great Yarmouth North Denes SPA* are from recreational disturbance to the little terns which are interest features for the site. The report notes that volunteers currently help to avoid these impacts, but that this system could be less effective with increasing access pressure. It recommends that wording of the supporting text to policy GYL1 should be amended to ensure that this is recognised.

Likely ‘in combination’ impacts on the *Stour and Orwell Estuaries SPA and Ramsar* would come from the major housing growth proposed by the RSS with the expansion of the ports of Felixstowe and Harwich. The former would increase recreational disturbance; the latter could affect bird populations, invertebrate populations and nationally scarce plants which are interest features for the site. The report recommends that policy HG2 should explain what is meant by ‘appropriate expansion of the ports’ and that studies should be undertaken into how port expansion can be achieved without significant impacts on the European site.

4.4 Findings of the air quality report

The air quality report concludes that:

“policies in the draft East of England Plan are not likely to affect the integrity of designated sites within the East of England either alone or in combination with the transport proposals to be brought forward through the RTS.” (para. 7.5)

More important here is the report's summary of its modelling findings:

“The results of the appropriate assessment suggest that the limit value for annual mean NOx concentrations is likely to be exceeded at locations within Portholme SAC, Epping Forest SAC, Breckland SAC and Breckland SPA in [2021]... the higher critical loads for N deposition are likely to continue to be exceeded at locations within Epping Forest SAC and the Norfolk Valley Fens SAC in [2021]...”
(para. 7.2-7.3).

We have concerns about this report which are discussed in Appendix B, and which suggest that more European sites might be affected by air pollution from the RSS and/or that other types of air pollutants might also affect the sites listed above.

4.5 Summary: significant impacts identified in the HRA

Table 1 summarises the significant impacts of the RSS on the integrity of European sites identified by the HRA. Appendix C shows the locations of these sites.

Table 1. HRA issues

	Site affected	Reason
Identified by the HRA as likely significant 'in combination' impacts of the RSS		
1	Breckland SAC/SPA	recreational disturbance on stone curlew, nightjar, woodlark and general habitat
2	Great Yarmouth North Denes SPA	recreational disturbance on little terns
3	Lee Valley SPA/Ramsar	water quality, flooding, possible habitat loss, with impacts on bitterns and overwintering wildfowl
4	Ouse Washes SAC/SPA/Ramsar	water quality, flooding
5	Portholme SAC	water quality, flooding
6	Stour and Orwell Estuaries SPA Ramsar	impacts of port expansion 'in combination' with recreation
Potential additional issues identified by this report		
7	Breckland SAC/SPA	N deposition and NOx levels from road,
8	Epping Forest SAC	N deposition and NOx levels from road
9	Norfolk Valley Fens SAC	N deposition from road
10	Portholme SAC	NOx levels from road
11	possibly other sites	air pollution
12	sites near London Gateway, Haven Gateway and King's Lynn ports	SOx, disturbance, water pollution from port development
13	sites affected by offshore wind power generation	disturbance to migrating birds
14	at least Breckland SAC/SPA and Portholme SAC	'in combination' impacts of different types of impacts: air pollution, water quality etc.

5. The Secretary of State further proposed changes

The Secretary of State published a schedule of further proposed changes to the RSS⁹ in October 2007, alongside the HRA. The proposed changes are clearly a concerted effort to address the issues raised in the HRA, within the remit of an RSS and without changing the proposed housing or employment allocations. They include strong wording that relates directly to the issues identified in the HRA (e.g. “The continuation of management measures to protect the little tern colony at Great Yarmouth North Denes will be essential”) rather than relying on one overarching ‘caveat’ policy to protect the European sites. Several of the proposed policy changes are self-reinforcing: for instance changes to the policy on provision of wastewater infrastructure are supported by parallel changes in sub-regional policies on key development priorities.

The EoE RSS, like all other RSSs, has the unenviable task of trying to implement national government policies that are difficult or impossible to reconcile within its limited remit: providing many more homes but also reducing flood risk, being consistent with the Air Transport White Paper but also helping to meet carbon reduction targets, trying to reduce road traffic although most of the powers to do this lie with national government and individuals etc. In this case, the RSS is trying to both meet the requirements of the Habitats Directive and achieve government and regional targets for house building and employment generation: truly a rock and a hard place.

In the end, despite the Secretary of State’s further changes, we conclude that the EoE RSS including further proposed changes could still lead to significant impacts on the integrity of European sites, and that this should trigger a stage 3 assessment of alternative solutions. This section explains why.

5.1 Tests of Habitats Directive mitigation and RSS soundness

A range of guidance exists on what is adequate mitigation for Habitats Directive purposes, how to deal with uncertainty in decision-making, and what is a ‘sound’ RSS. These all relate to whether the EoE RSS with the further proposed changes will not give rise to significant adverse impacts on the integrity of European sites.

The European Commission guidance on appropriate assessment¹⁰ is oriented primarily towards projects, and proposes an approach to mitigation which arguably expects levels of certainty and detail that are not possible at the RSS level. However it does give an indication of the kind of issues that need to be considered when determining whether mitigation measures will reduce impacts to an insignificant level, namely:

“Mitigation measures need to be assessed against the adverse effects of the project or plan is likely to cause... To assess mitigation measures, the following tasks must be completed:

- *list each of the measures to be introduced (e.g. noise bunds, tree planting)*
- *explain how the measures will avoid the adverse impacts on the site;*
- *explain how the measures will reduce the adverse impacts on the site.*

⁹ ibid. note 1

¹⁰ ibid. note 4

Then, for each of the listed mitigation measures:

- provide evidence of how they will be secured and implemented and by whom;
- provide evidence of the degree of confidence in their likely success;
- provide a timescale, relative to the project or plan, when they will be implemented;
- provide evidence of how the measures will be monitored and, should mitigation failure be identified, how that failure will be rectified” (Sec. 3.2.5).

The DCLG draft guidance on appropriate assessment echoes the European Commission’s messages:

“The primary aim of the mitigation of an option should be to cancel out any adverse effects fully. Where it is not possible to eradicate negative effects completely, there should be a sufficient reduction so that an adverse impact on the integrity of the European site can be nullified... Mitigation measures need to be viable, timely and possible to implement”¹¹.

Tyldesley¹² suggests that HRA practice raises four types of uncertainty:

- scientific uncertainty, where there is inadequate ecological know-how or evidence, or prediction of effects;
- regulatory uncertainty: when is it appropriate to rely on regulatory controls of other sector plans and at a project stage?
- planning hierarchy uncertainty: when is it appropriate to rely on the HRA of lower tier plans?
- implementation uncertainty: what to do when it depends how a plan is implemented.

The European Commission guidance states that, in cases of uncertainty, the precautionary principle should be invoked, and the conservation objectives of Natura 2000 should prevail where there is uncertainty¹³. The Waddenzee ruling on cockle fishing¹⁴ confirmed that, in HRA, “no reasonable scientific doubt [should remain] as to the absence of such effects”. The inspector who considered the Thames Basin Heaths SPA as part of the EiP for the South East Plan also invoked the precautionary principle¹⁵, and referred to a European Commission communication on the subject. The communication¹⁶ seems to be oriented primarily at human health risks from pharmaceuticals etc., and so may not fully apply to the Habitats Directive. However it suggests five principles for implementing the precautionary principle, shown in Box 2. The key principles relevant to the Habitats Directive are likely to be those on proportionality and non-discrimination.

¹¹ DCLG (2006) Planning for the Protection of European Sites: Appropriate Assessment, Guidance for Regional Spatial Strategies and Local Development Documents, Consultation document, <http://www.communities.gov.uk/archived/publications/planningandbuilding/planning2>, para. 5.17-5.19.

¹² Tyldesley, D. (4 December 2007) ‘Habitats Regulations Assessments of Local Development Documents: Natural England’s Approach’, talk given to North West planning authorities, Burton Manor, Cheshire.

¹³ *ibid.* note 4.

¹⁴ Landelijke Vereniging tot Behoud van de Waddenzee v. Secretary of State for Agriculture, Nature Conservation and Fisheries (Case C127/02), ECJ 7/9/04.

¹⁵ Burley, P. (February 2007) Report to the Panel for the Draft South Easts Plan Examination in Public on the Thames Basin Heaths Special Protection Area and Natural England’s Draft Delivery Plan, <http://www.eipsoutheast.co.uk/news/story.aspx?id=49>.

¹⁶ Commission of the European Communities (2000) Communication from the Commission on the precautionary principle, http://eur-lex.europa.eu/LexUriServ/site/en/com/2000/com2000_0001en01.pdf.

Box 2. Principles for implementing the precautionary approach

Proportionality: “[Mitigation measures] must not be disproportionate to the desired level of protection and must not aim at zero risk... It is in situations in which the adverse effects do not emerge until long after exposure that the cause-effect relationships are more difficult to prove scientifically and that – for this reason – the precautionary principle often has to be invoked. In this case the potential for long-term effects must be taken into account in evaluating the proportionality of measures... This applies in particular to effects on the eco-system. Risks that are carried forward into the future cannot be eliminated or reduced except at the time of exposure, that is to say immediately”.

Non-discrimination: “Measures should not be discriminatory in their application... comparable situations should not be treated differently and different situations should not be treated in the same way...”

Consistency: “Measures should be consistent with the measures already adopted in similar circumstances or using similar approaches”. n.b. arguably no measures have been ‘adopted’ yet for HRA of plans, although Natural England’s draft implementation plan for the Thames Basin Heaths and the subsequent Inspector’s report go some way towards ‘adoption’.

Examination of the benefits and costs of action and lack of action: “The measures adopted presuppose examination of the benefits and costs of action and lack of action.” n.b. Given the Habitat Directive’s clear emphasis on maintaining European site integrity, some of the additional information in the communication may not be appropriate here.

Examination of scientific developments: “The measures... shall be maintained as long as the scientific data remain incomplete, imprecise or inconclusive and as long as the risk is considered too high to be imposed on society.”

Finally, the tests of RSS ‘soundness’ will help to determine whether the EoE RSS plus further proposed changes will be adopted. Relevant tests of soundness in this case are:

- (iii) whether the RSS is consistent with national planning policy and if not whether the case has been adequately made for departing from national policy
- (v) whether the RSS policies in it are consistent with one another
- (vi) whether the RSS is founded on a robust and credible evidence base
- (viii) whether the RSS is realistic, including about the availability of resources, and is able to be implemented without compromising its objectives

We have brought together these criteria into seven RSS/HRA tests:

- A. The RSS is *supported by a robust evidence base*. This tests whether the HRA and other information allow the RSS to be finalised and deemed to not have a significant impact on European sites. “Effective mitigation of adverse effects on Natura 2000 sites can only take place once those effects have been fully recognised, assessed and reported”¹⁷.

¹⁷ *ibid.* note 4, Sec. 2.6

- B. The RSS tries first to *avoid impacts* on European sites altogether and *then reduce/mitigate them*: for instance it includes policies for reducing the use of water as well as for providing water in a way that will not affect the integrity of European sites;
- C. The avoidance/mitigation measures are *proportional to the desired level of protection* (i.e. strong, given the Habitat Directive' precautionary approach). This tests:
 - whether the proposed measures relate to the conservation objectives for the qualifying features for the European site rather than just provide a generic protective caveat; and
 - the strength of wording of the mitigation measure.
- D. There is evidence that the *avoidance/mitigation measures will succeed*. This tests whether
 - the RSS's implementation could be counteracted by national government policy (e.g. on housing or ports), individuals' behaviour etc.;
 - if the avoidance/mitigation measures rely on other organisations' plans (e.g. Environment Agency Catchment Management Plans), those plans are likely to be fully implemented and provide the level of protection needed; and
 - if the RSS's avoidance/mitigation measures were implemented in full, the RSS would fully protect the integrity of the European site in question;
- E. If the mitigation fails, *measures are in place to rectify this*. This assumes that impacts on European sites would be identified as part of the RSS monitoring process, and focuses instead on whether it would be possible to retrofit some kind of other solution if the proposed one fails. For instance, if a port is built, it won't be removed and the disturbance impacts of shipping would be unavoidable; but if there is too much effluent from a sewage treatment work and it is possible to pump that effluent elsewhere, then a solution can be retrofitted;
- F. The *RSS policies are consistent with one another*. This tests whether any other RSS policies would contradict, or be contradicted by the RSS policies that mitigate impacts on European sites;
- G. The *RSS is realistic*. This tests whether the proposed avoidance/mitigation measures are 1. economically/ technically viable, and 2. in the remit of the RSS.

It is quite possible that a RSS could fail several of these tests and still not have a significant impact on the integrity of European sites. However tests C, D and E seem central to ensuring site integrity; and test A seems like a necessary precursor to the other tests.

5.2 HRA issues, RSS response, and remaining gaps and impacts

Table 2, which summarises the findings of Appendix D, shows the main issues raised by the HRA, and how the RSS and its further proposed changes deal with these issues. It also identifies remaining gaps in HRA information and RSS impacts. No remaining gaps or impacts remain for the Great Yarmouth North Denes SPA, but concerns remain about all the other HRA issues.

Table 2. HRA issues, RSS response, remaining gaps

	Site affected	Main HRA issue	RSS response	Remaining gaps / impacts
1	Breckland SAC/SPA: recreation	The RSS proposes 6000 (plus more after 2021) dwellings for Thetford, many on greenfield land near the SAC/SPA. These could lead to increased disturbance to the site's stone curlew and possibly nightjar and woodlark; and could lead to land take of farmland used by stone curlew for feeding. The HRA considers adverse impact on stone curlew 'currently.... unlikely to be amenable to mitigation through interception using greenspace or on site management'.	Policy TH1 aims to "maximise sensitive development [of 6000 plus dwellings] ... through sustainable urban extensions which avoid harm to the [SPA/SAC]". Its supporting text notes "Key issues will be the location of new development, the provision of green infrastructure, and management measures to protect sensitive breeding bird populations from disturbance."	It is unclear whether locations near Thetford other than those identified in its masterplan (which would affect stone curlew) are available, and so whether the policy can be implemented without harm to the European site and is internally consistent.
2	Great Yarmouth North Denes SPA: recreation	Colonies of little tern are located on the Great Yarmouth beach which has unimpeded access. Wardens protect the colonies during the breeding season. The HRA raises concerns about wardening being less effective with increased recreational pressure.	Supporting text to GYL1 (on development at Great Yarmouth) notes "The continuation of management measures to protect the little tern colony at Great Yarmouth North Denes will be essential"	(none)
3	Lee Valley SPA/ Ramsar: water	The RSS proposes 47,100 new households in the catchment area of the Rye Meads Sewage Treatment Works (STW), which can currently only accommodate another 11,000. It seems unclear whether the capacity of the STW can be increased without increasing the area of the works. If not, then either construction of the works is likely to encroach on the SPA/Ramsar; not expanding the works could lead to low water quality in the SPA/Ramsar.	The RSS clearly flags up – both in WAT2 and in sub-regional policies - the importance of planning for sewage treatment capacity. For the Rye Meads catchment area supporting text to WAT2 notes that this "may bear on the rate of delivery" of development.	It is unclear whether the STW's capacity can be increased without increasing its area. To achieve internal consistency of the RSS, the proposed rate of housing growth as well of rate of delivery may need to be left flexible, or the RSS may be internally inconsistent.
4	Ouse Washes SAC/SPA/ Ramsar:	Growth in the Bedford and Luton areas proposed by the RSS would increase effluent discharge of the	Supporting text to WAT2 notes that "Further work on river capacity in is also	It is unclear how much additional effluent discharge the River Ouse can cope

	Site affected	Main HRA issue	RSS response	Remaining gaps / impacts
5	water	Dunstable and Chalton STWs to the River Ouse. This could increase flood risk to the European sites, but further study is needed to confirm this. If it is a problem, then mitigation would involve pumping effluent to a different river, which itself would have environmental impacts.	needed in... Basildon, Chelmsford and Luton, Dunstable and Houghton Regis. These studies should identify strategic water / waste water infrastructure requirements [and] inform the preparation of LDDs..."	with and (if it can't cope with proposed housing growth) whether infrastructure to deal with this can be provided at reasonable financial and economic cost.
	Portholme SAC: water			
6	Stour and Orwell Estuaries SPA/ Ramsar: shipping	The SPA/Ramsar is adjacent Harwich port and near Felixstowe port, and is also subject to recreational pressure. A container port was approved for Harwich in March 2006. Housing growth proposed by the RSS alone would not have a significant impact on the birds in the SPA/Ramsar, but 'in combination' with port expansion it could. The HRA focuses on the port's impacts.	Supporting text to T11 notes that 'development associated with the region's ports' should avoid adverse impact on European sites, and SS9 aims to protect the tranquillity of the coast.	This issue may be moot since approval of the container port. It is unclear whether, together, the RSS policies would prevent 'in combination' impacts of port development plus recreation.
7-11	Breckland SAC/SPA; Epping Forest, Norfolk Valley Fens and Portholme SACs; possibly other sites (see App. B): air pollution	Traffic on roads through/ near these sites is expected to rise significantly to 2021, in part in response to road proposals in the RTS. Air pollution levels at the sites should fall overall to 2021 due to improved vehicle technology etc., but NOx levels and/or N depositions will still be above the critical loads in 2021, sometimes significantly so.	No direct response. HRA refers to other RSS policies "that have been developed to avoid adverse air quality at designated sites", but the road proposals are still in the RTS.	The direct significant air pollution impacts due to the RTS appear to be unmitigated. The RSS's indirect impacts on air quality haven't been identified in the HRA, much less mitigated in the RSS.
12	sites near London Gateway, Haven Gateway and King's Lynn ports: impacts of port development	This issue is not discussed in the HRA. The RSS proposes new/ expanded ports at London Gateway and King's Lynn, which could affect the Benfleet and Southend Marshes SPA/ Ramsar, Thames Estuary and Marshes SPA/ Ramsar, The Washes SAC/ SPA/Ramsar, and possibly other sites. Impacts could include SO ₂ pollution, water pollution from dredging, land take, and disturbance	Supporting text to T11 notes that: "all development associated with the region's ports should avoid any adverse impact on sites of European or international importance for wildlife" and SS9 aims to protect the tranquillity of the coast.	It is unclear whether, together, the RSS policies would prevent 'in combination' impacts of port development plus recreation.

	Site affected	Main HRA issue	RSS response	Remaining gaps / impacts
		from shipping.		
13	estuarine sites off East of England coast: offshore wind power generation	This is not discussed in the HRA. The RSS suggests that about 2600MW of offshore wind power will be produced by 2020, equivalent to roughly 90 wind turbines. Much of the region's coast is designated for migrating/overwintering birds. Wind farms can disturb birds, affect their migration patterns, and cause bird strike.	ENG 2 notes that renewable energy targets are subject to meeting obligations to protect wildlife, including migratory birds.	It is unclear whether ENG 2's targets can be achieved with no significant effect on migrating birds. If they can't, then ENG 2 basically imposes a cap on wind farm development; without a regional steer on where this should go, sub-optimal (in terms of energy production) sites could be used. This could be inefficient.
14	sites affected by 'in combination' effect of different types of impacts	This is not discussed in the HRA. European sites may be affected by multiple different impacts, each of which is insignificant, but which together could be significant. Breckland is affected by recreational disturbance and air pollution and Portholme by water issues and air pollution. Other sites may similarly be affected by multiple impacts.	The RSS responds to individual issues as discussed above.	Uncertainty about what sites are affected by such 'in combination' effects, and whether the 'in combination' effects can be mitigated on an impact-by-impact basis or need additional measures.

5.3 Testing the RSS/HRA: are significant impacts on European site integrity avoided?

Table 3 analyses the remaining HRA issues of Table 2 using the RSS/HRA tests identified above, to try to identify particular problem areas.

A. The HRA does *not provide sufficient evidence to ensure that the RSS does not have a significant impact on European sites:*

- For Breckland SAC/SPA, it is unclear from the HRA whether Thetford can accommodate 6000-plus new homes without harming the SAC/SPA. At least one of the two greenfield sites identified in the current masterplan for Thetford would harm the SAC/SPA, but neither the HRA nor the RSS states whether other housing sites can be found that will not harm the SAC/SPA.
- For the Lee Valley SPA/Ramsar, it is not possible to say whether capacity at the Rye Meads sewage treatment work (STW) can be increased without increasing the footprint of the STW. In the absence of this information, it is not possible to say whether just being flexible about the rate of housing delivery (as is proposed in the RSS) would be enough to protect the European site, or whether the amount of housing needs to be reconsidered too.

- For the Ouse Washes SAC/SPA/Ramsar and Portholme SAC, it is unclear how much more effluent the River Ouse can accommodate, and what the financial and environmental feasibility of diverting effluent away from the River Ouse would be, i.e. whether the proposed mitigation measure is feasible.
- We believe that the HRA does not adequately identify the RSS's likely impacts on air quality, and that the RSS does not include adequate measures to avoid/mitigate these impacts.
- The HRA also does not discuss wind turbines or (other than the 'in combination' disturbance of ports and recreation on the Stour and Orwell Estuaries SPA/ Ramsar) the 'in combination' impacts of multiple different impacts on European sites.

This lack of information makes it difficult to come to a full conclusion on some of the other tests.

B. In most cases the *RSS has made an effort to first avoid and then reduce its impacts*. For instance the RSS includes policies on reducing water consumption (so reducing the need for wastewater treatment), and on behavioural change and pricing incentives to reduce car use (so avoiding some air pollution). It promotes green infrastructure as a way of avoiding/reducing recreational impacts on European sites. However it makes no attempt to reduce shipping activity, and indeed promotes port development as a key economic driver for the region.

Table 3. HRA issues v. HRA/RSS tests

	A. supported by robust evidence	B. first avoid then reduce impacts	C. measures are proportional	D. mitigation is secured	E. can rectify if mitigation fails	F. consistent RSS policies	G. RSS is realistic
1. Breckland SAC/SPA: recreation	x	?	?	?	x	x	✓
3. Lee Valley SPA/ Ramsar: water	x	✓	✓	?	x	?	?
4-5. Ouse Washes SAC/SPA/ Ramsar, Portholme SAC: water	x	✓	?	?	?	?	?
6. Stour and Orwell Estuaries SPA/Ramsar: shipping	?	x	?	x	x	x	✓
7-11. Breckland SAC/SPA; Epping Forest, Norfolk Valley Fens and Portholme SACs; possibly other sites: air pollution	x	✓	x	x	x	?	✓
12. sites near ports: impacts of port development	?	x	?	x	x	x	✓
13. estuarine sites off East of England coast: offshore wind power generation	x	✓	✓	?	x	?	?
14. sites affected by 'in combination' effect of different types of impacts	x	?	?	?	?	?	?

✓ fully passes the test, ? partly passes, x does not pass. It is quite possible that a RSS could fail several tests and still not have a significant impact on the integrity of European sites. However tests C, D and E seem central to ensuring European site integrity

C. The *mitigation measures in the RSS are generally proportional*: they relate to the factors causing the impacts on the European sites not just general caveats, and are clearly and powerfully phrased. The main exception is air quality. The RSS includes strong policies on reducing the need to travel and on less polluting modes of transport, but its limited remit does not allow it to ensure that traffic levels really do decrease.

D. National government policies (or lack of policies) and individuals' actions are likely to make it *difficult for most of the RSS's mitigation measures to be fully secured*.

- At Breckland SAC/SPA, a combination of the Countryside and Rights of Way Act, other government policies on increasing access to open space, and the sheer expense and physical difficulty of keeping people out of the site even if that could legally be done would make it almost impossible to prevent recreational impacts on the European site.
- At the Lee Valley and Ouse Washes, OFWAT policies, the timing of water companies' plans, and the difficulty of getting people to use less water mean that reducing the amount of wastewater needing treatment and providing appropriate infrastructure in time is very difficult.
- Most decisions about large ports are made at the national government level, and this will be intensified under proposals for National Infrastructure Policies. As such, the RSS's laudable policies on permitting only port developments that do not affect European sites could well be overtaken by national government decisions.
- Although the RSS tries hard to reduce the rate of road traffic growth, the long list of road projects in the RTS, and the traffic figures given in Appendix D of the HRA, suggest just how much additional growth is expected. National government decisions on road construction, petrol pricing, congestion charging etc. contribute to this, as do individuals' travel decisions.

E. *Most of the RSS's impacts could not be rectified if they occurred*. If houses get built, the new residents will use nearby open space unless the fencing is very sturdy and very high. The residents of those houses won't miraculously hold it in, even if the fish in the River Lee start dying. If ports or wind farms are built, they won't be shut down just because the nearby bird populations decline. Air pollution impacts would be slow and insidious, and plant populations can take decades to recover, and maybe never, even if traffic levels are somehow brought down. The only impact that could really be rectified would be that of water pollution in the Ouse Washes and Portholme, *if* effluent could be pumped away from the River Ouse.

F. In the absence of firmer evidence from the HRA, there is the potential for a several policies to be *internally inconsistent or inconsistent with each other*, leading to an unsound plan:

- Policy TH1: it may not be possible to add 6000 dwellings to Thetford and still avoid harm to the Breckland SPA and/or Breckland SAC. This is an example of the problems caused by just adding protective caveats to an otherwise harmful policy;
- Policy HG2 on providing 50,000 additional jobs in Haven Gateway and port expansion may conflict with E2 which states that employment sites should be at locations which avoid any adverse impact on European sites;

- The supporting text to policy T11 may well be internally inconsistent: “all development associated with the region’s ports should avoid any adverse impact on sites of European or international importance”.

In contrast, policy ENG2 sets out a clear hierarchy of importance which eliminates this conflict: “The above targets are subject to meeting European and international obligations to protect wildlife, including migratory birds...”

G. *The RSS is realistic.* It stays within its remit and does not seem to recommend an infeasible level of resource use. That said, many of the RSS’s aspirations are unlikely to happen because of the points raised at D. Furthermore, the RSS may not be promoting the most effective / efficient use of resources. Neither the RSS nor the HRA suggest that any analysis has been done of whether the proposed offshore wind energy production capacity can be accommodated off the East of England coast without affecting the migrating birds for which many of the estuarine European sites have been designated. The RSS is quite clear that its renewable energy targets are subject to protection of the birds, so the constraint would be on the wind farms. In the absence of regional level research and policy steer on where the best wind farm sites are, it is possible that less optimal (in terms of energy production) sites are used first, leaving the better ones sterilised to prevent cumulative impacts on birds.

5.4 Conclusion

Without more information, it is difficult to know whether the RSS plus further proposed changes will have a significant impact on any European sites. However the air report alone suggests that it still will, as does the large number of crosses in Table 3. The fact that many of the RSS’s impacts could not be rectified if they do occur stresses the need to get the RSS right now; it won’t be possible to turn things the right way around again.

6. Next steps

Because of the points raised in Section 5, we believe that:

1. further HRA information should be collected and taken into account in finalising the RSS, or
2. as required by the Habitats Regulations 85C(1), alternative solutions to the RSS must be considered.

With respect to alternatives, the European guidance on appropriate assessment¹⁸ notes that:

“Crucial to the assessment of alternative solutions is the inclusion in the assessment of the ‘do nothing’ alternative. Possible alternative solutions may include variants of:

- *locations or routes;*
- *scale or size;*
- *means of meeting objectives (e.g. demand management);...*
- *scheduling and timescales...*”

¹⁸ *ibid.* note 4, sec. 3.2.5.

This suggests that the RSS could be reconsidered in terms of the location of proposed housing, employment sites, ports etc. (for instance port expansions or major growth areas only where they would not affect European sites); the number of proposed houses (e.g. fewer new homes in areas where they would otherwise overwhelm sewage treatment infrastructure); and phasing of development (for instance not building or widening roads unless and until background air pollution levels are low enough so that the additional traffic caused by the roads would not make air pollution at European sites exceed the sites' critical loads).

We are well aware of the social, economic and political arguments that have been advanced for the scale and type of growth provided for in the RSS, and the objections that would be raised to constraining it in such ways. However we doubt whether these arguments would be enough to sustain a claim that the growth is justified by 'imperative reasons of overriding public interest', especially given that there has never been any explicit comparison of the current suite of RSSs, which accommodate and encourage growth concentrated in the south and east of England, with possible alternatives proactively spreading growth more evenly across the English regions and indeed the devolved administrations.

However there is a further kind of 'alternative solution' that could potentially enable the proposed region wide scale of growth (though probably not all the specific locations set out in RSS) to avoid the problems outlined in section 5. This is for new development to be required to reach much higher environmental standards than current building regulations: notably no *net* increase in mains water consumption, sewerage or motorised traffic generation. ('Net' means that developers can use off-site actions, such as subsidising water-efficient retrofit in existing housing, or pedestrian / public transport improvements in neighbouring areas, to offset the residual extra impacts of new development after all practicable reduction measures have been taken. This can in principle enable development to go ahead without adding to the total pressures on European sites.)

The recommendations we made on these lines in the original SA/SEA were rejected by the Panel on the basis that they were impracticable and could not be enforced through the planning system. The Government's current proposals for planning reform will make this worse. However the Government has also announced that building regulations will require new housing to be carbon neutral from 2016 (2011 in Wales), which was previously regarded as just as utopian and impracticable. Making water neutrality and traffic reduction preconditions for housing growth in the East of England would not only solve many of the problems identified in this round of RSS and HRA, but also in future rounds. It would do the same for London, the South East and the South West, all of which are likely to face similar conflicts between growth targets and legal obligations to protect European wildlife sites.

If the RSS is adopted without 1. or 2. above, then the points raised in Section 5.3 may give grounds to mount a judicial review against that decision.

Appendix A. Concerns about screening out issues

The EoE RSS HRA focuses on what are arguably the five key impacts of the RSS likely to affect the integrity of European sites: air quality, recreation, water resources, water quality and flooding. However it does not – directly at least - discuss other impacts that are arguably also significant, notably impacts of ports, roads (lights, noise, road kill), airport, offshore wind turbines, and impacts of urbanisation that go beyond recreational disturbance (e.g. arson, fly-tipping).

Much of this is perfectly understandable, and is related to the question of just how responsible the RSS is for assessing 1. the indirect impacts of developments which it promotes but whose implementation is also/mainly determined by other plans; and 2. developments which it supports but does not directly promote.

A reasonable approach to the first question might be informed by

- The European Commission guidance¹⁹ which suggests that ‘in combination’ impacts must be considered from the very beginning of an HRA: the first screening assessment of whether the plan is unlikely to have significant effects on a European site “*must address effects from other plans/projects (existing or planned) which may act in combination with the plan/project currently under consideration and generate cumulative effects*”.
- the Panel Report for the North West RSS which notes that “*In assessing the environmental impact of the development plan, it is reasonable to assume that its development proposals will come to fruition*” (para. 5.8).

That said, there must be an element of proportionality in HRA: the level of detail of an HRA, and the avoidance/mitigation measures it proposes cannot be expected to cover all possible impacts of a plan, no matter how indirect or limited.

The EoE RSS only promotes access to airports and airport-related employment development, not airport expansion itself. Indeed, it seems to actively distance itself from the Air Transport White Paper, and the further proposed changes to policy E8 on airports note that “[Airport] development proposals... should avoid any adverse impact on sites of European or international importance for wildlife”. So it is probably right for the HRA not to include a separate ‘airports’ assessment, although the air pollution, disturbance etc. from the airport expansions proposed in the Air Transport White Paper should be considered as ‘in combination’ impacts to those of the RSS. In fact, the air pollution report notes that “LAQM.TG03 suggests that air quality effects only need to be considered within 1km of an airport boundary and 1km of the main areas of ship manoeuvring and berths”, so effectively screening out that issue. The recreational report does not discuss impacts from airports, but arguably these are minor anyway (Stansted, for instance, is located quite far from any European site).

The recreation report seems to use quite a broad definition of ‘recreation’, and discusses at least some urbanisation-related issues. For instance it highlights problems of arson at Breckland SAC and Sandlings SAC, and Breckland SAC’s use by travellers. That said, it is not clear from the HRA whether this covers the full range of impacts that could be

¹⁹ *ibid.* note 4, screening matrix p. 16

due to urbanisation, e.g. 'nibbling' of land at the boundaries, invasive species, fly-tipping etc.

On the other hand, the RSS does directly support port development through policies

- ETG5 (new container port facility at London Gateway);
- HG2 (maintenance and expansion of Haven Gateway ports);
- GL1 (port and related activities at Great Yarmouth and Lowestoft); and
- supporting text to KL1 which promotes growth of King's Lynn's commercial port;

and indirectly through policy T11 on improving access to ports. Great Yarmouth and Lowestoft are not near estuarine European sites, but the others are. Ports/shipping are key emitters of SO₂, often require dredging which affects water quality, and disturb wildlife. Much of the East of England coast is covered by European designations, whose interest features could potentially be affected by these impacts. The recreational report does mention disturbance from ports as leading to 'in combination' effects on the Stour and Orwell Estuaries SAC/SPA/Ramsar site, but it is unclear whether it has systematically considered port impacts; and neither the air quality nor the water reports mention ports.

Similarly, RSS Policy ENG2 on renewable energy targets implies that 4% of the East of England's energy consumption should be met by offshore wind power by 2010 (roughly 340MW) and 27% by 2020 (roughly 2600MW), "subject to meeting European and international obligations to protect wildlife, including migratory birds". This implies a really major growth in offshore windfarms: 2600MW is equivalent to roughly 90 turbines (assuming an average of 3MW per turbine), or more than 6 times as much power as all of the offshore windfarms currently operational in the UK²⁰. The HRAs of other RSSs (e.g. North East, South West) suggest that large arrays of offshore wind turbines can have significant impacts on migrating birds, particularly in combination with shipping impacts.

Appendix B. Concerns about the air quality report

The air quality report goes rather further than the HRAs for other RSSs in attempting to quantify future air pollution impacts through a modelling exercise (the other HRAs only identify them as being potentially problematic). There is nothing to suggest that the models that it uses or the assumptions that it is based on are in any way incorrect. That said, the report does lack transparency at key points, leading to queries about its overall 'no significant impact' conclusion.

First, the report includes *no prediction of SO₂, acid deposition and (ground level) ozone levels*. Although the report's baseline analysis (its Table 2, based on Appendices A-C) identifies significant existing problems of ozone and acid deposition, its impact predictions only relate to NO_x and nitrogen deposition. There is no explanation for the

²⁰ statistics from the British Wind Energy Association, <http://www.bwea.com/ukwed/google.asp>. The following proposed wind farms off the coast of the East of England already have either planning consent or a planning application submitted: Gunfleet Sands II, Thanet, London Array, Greater Gabbard, Hemsby, Sheringham Shoal. This is in addition to operational offshore wind farms Kentish Flats, and Scroby Sands, Ness Point, Somerton on the Norfolk coast.

lack of other predictions beyond the statement that “on a local scale, the pollutant of most concern for sensitive vegetation near to roads is NO_x” (para. 3.9).

SO₂ emissions are not currently a problem, and are generally expected to reduce significantly to 2020. However SO₂ emissions from shipping are expected to increase by about 2.5% per year²¹, so there may be some significant impacts on European sites located near ports in the East of England. Ozone generation and acid deposition are both related to NO_x and SO₂ emissions, which are expected to decrease in the future. However critical loads for acid deposition can be exceeded even where neither NO_x nor SO₂ levels exceed their individual critical loads; and ozone levels have not been falling in line with the drop in the level of precursor emissions (NO_x, volatile organic compounds etc.)²².

Second, the report only directly considers the air pollution impacts of the road schemes in Regional Transport Strategy. *It does not – directly at least – assess the more diffuse impacts of additional housing, employment, shipping etc. resulting from the RSS; nor ‘in combination’ impacts with other regions.* Many of the impacts of the additional housing will, of course, be transport-related and would thus be covered by the air quality report’s modelling. However the air quality report gives no reference for, or explanation of, the UK Air Quality Archive’s adjustment factors, so it is unclear to what extent they cover the other impacts. The report also does not state whether the adjustment factors are for the East of England (or site-specific) rather than just national averages; and whether they take into account the latest housing numbers proposed for the East of England RSS.

A range of studies suggest that background/diffuse air pollution in 2020-21 (which may or may not be caused by the RSS) could have significant effects on European sites in the East of England, and should be considered ‘in combination’ with impacts from the RTS’s road projects. Grice et al.²³ (who may be the source of the adjustment factors) predict that, although NO₂ concentrations will drop significantly between now and 2020, levels in the London area will still typically exceed 20µg/m³, and levels in the southern part of the East of England will still typically exceed 10µg/m³.

Hall et al.²⁴ suggest that, in 2020, acid and nitrogen deposition critical loads for European sites will still be exceeded in much of the East of England, particularly along the coast. They note that, although the area of European sites where critical loads are

²¹ Hall, J., A. Dore, E. Heywood, R. Broughton, J. Stedman, R. Smith and S. O’Hanlon (2006) Assessment of the environmental impacts associated with the UK Air Quality Strategy.

²² From the Royal Society (<http://www.royalsoc.ac.uk/page.asp?changes=0&latest=1&id=5836>): “Although air quality in the UK has improved dramatically during recent decades due to large reductions in major pollutant emissions in the UK and the rest of Europe, ground-level ozone remains a significant air quality issue primarily because of the trans-boundary nature of the problem... Peak concentrations of ozone have been reduced in the UK by about 30 parts per billion (ppb) over the last decade (NEG TAP 2001)... However, background concentrations have continued to increase raising concerns that government targets set to safeguard the environment and human health will be exceeded. Several factors may be important for this increase. For example; growth in anthropogenic precursor emissions (such as methane, carbon monoxide, and nitrogen oxides) in other parts of the world; reduction in the ground removal fluxes due to land-use changes (e.g. deforestation) and drought; intensification of the “natural cycle” of ozone through enhanced biogenic volatile organic compound emissions; changes in physical parameters important for the boundary layer ozone formation and concentration (for example: temperature and residence time of air in the atmospheric boundary layer (determined for example by the frequency and vigour of convective events)).”

²³ Grice, S., T. Bush, J. Stedman, K. Vincent, A. Kent, J. Targa and M. Hobson (2006) Baseline Projections of Air Quality in the UK for the 2006 Review of the Air Quality Strategy,

²⁴ see footnote 12.

exceeded will decrease by 15% for acidity and 11% for nutrient nitrogen between 2001-3 and 2020, the least improvement for nutrient nitrogen will be for bogs, managed broadleaved woodland and unmanaged woodland, which are the types of habitat already most significantly affected in the East of England (based on Table 2 of the air quality report). Hall et al. don't show maps for NOx exceedance, but suggest that, UK-wide, 2049 hectares of SACs, 1278ha of SPAs and 2154ha of Ramsar sites will have annual NOx levels above 30µg/m³: one can assume that those in the southern part of the East of England region will be disproportionately represented. Again, it is not clear to what extent these studies have been considered in the air pollution report.

The report also *does not discuss local, road-related air pollution impacts that are not linked to a project listed in the RTS*. For instance, Epping Forest SAC is crisscrossed by roads which carry a significant amount of traffic, including the A121 which links to junction 26 of the M25 within 1km of the SAC, and the B1393/A104 which links Harlow (a growth area in the RSS) with London and runs most of the way through the centre of the forest. Similarly, Sandlings SAC is crossed by the A1075, A134 and B1107 as well as the A11. Traffic on all of these roads is likely to rise significantly as a direct result of development proposed in the RSS, but the air pollution impacts of this traffic growth are not discussed in the HRA.

The report *does not confirm whether any planning decisions and other activities that have occurred since the development of the adjustment factors could affect its modelling results*. For instance, within the last 12 months:

- The Panel Report for the South East RSS has proposed housing levels 10% higher than those in the draft South East Plan²⁵;
- the Panel Report for the Yorkshire and Humber RSS has proposed housing levels approximately 15% higher than those in the draft RSS²⁶;
- Government is supporting New Growth Points in the East and West Midlands (also in the South East, but these have been included in the Panel Report proposed changes)²⁷;
- The Environment Agency has granted Pollution Prevention and Control Permits to Aberthaw, Eggborough, Drax, Ferrybridge, Fiddler's Ferry, Cottam, West Burton, Ratcliffe and Rugeley power stations, despite concerns by Natural England and the Countryside Council for Wales on the likely impact of these permissions on European sites²⁸. These power stations are responsible for a high proportion of air pollution at all the European sites in the East of England²⁹.

Since the air quality report was published, Government has also unveiled proposals for a third runway at Heathrow, which would also increase air pollution in the wider London area. It is unclear from the air quality report whether these factors have been taken into account in its modelling or not.

²⁵ <http://www.gos.gov.uk/gose/planning/regionalPlanning/southEastPlan/?a=42496>

²⁶ <http://www.yhassembly.gov.uk/The%20Library/Regional%20Planning%20Library/Spatial%20Strategy%20Development/Panel%20Report%20from%20the%20Examination%20in%20Public/>.

²⁷ <http://www.communities.gov.uk/housing/housingsupply/growthareas/newgrowthpoints/>

²⁸ http://www.environment-agency.gov.uk/commondata/acrobat/esi_ea_response_1902376.pdf

²⁹ The APIS model allows identification of key sources of sulphur deposition for European sites. For instance S deposition at the Barnack Hills & Holes SAC is: Cottam 9%, Ratcliffe 4%, Rugeley 7%, West Burton 7%, Draw 3%, Eggborough 3%, Ferrybridge 3%, Fiddlers Ferry 2%: from just the power stations for which PPC consent was recently given. See http://www.apis.ac.uk/cgi_bin/query_sitebased.pl.

The report adds the predicted air pollution from the RTS projects to the 2021 baseline, but not (visibly anyway) to the baseline in previous years. Many of the RTS projects are likely to become operational before 2021, when baseline air pollution levels are higher³⁰: certainly Policy H2 calls for “coordination of development with necessary transport and other infrastructure provision” and this development will presumably not all become operational in 2021. As such, *although critical loads at a given European site may not be breached in 2021, they may be breached in previous years without being identified in the report*. The report does not suggest any avoidance measures such as “road X should not become operational before year Y”.

Finally, the *conclusions of the report do not seem to reflect the modelling results*. Even with all the constraints identified above, the report’s site-by-site results identify six European sites, each with at least one predicted exceedance of the site’s critical load for air pollution:

- Devil’s Dyke SAC: “The predicted N deposition rate is slightly above the lower critical load range of 15-25 Kg.N.ha⁻¹.yr⁻¹ for calcareous grassland” (para. 5.18);
- Portholme SAC: “the predicted annual mean NOx concentrations are above the limit value of 30 µg.m⁻³ at up to approximately 80m from the centre of the A14” [n.b. currently 166, predicted 71 in 2021 at 20m from A14] (para. 5.26);
- Epping Forest SAC: “the predicted annual mean NOx concentrations are above the limit value of 30 µg.m⁻³ at more than 70m from the centre of the M25... The predicted N deposition rates in 2003 and 2021 with the RTS are well above the critical load range of 10-15 Kg.N.ha⁻¹.yr⁻¹ for Beech Woodland” [n.b. more than 30] (para. 5.38-5.39);
- Norfolk Valley Fens SAC: “The predicted N deposition rate is above the critical load range of 10-20 Kg.N.ha⁻¹.yr⁻¹ for forests and heathlands at this location” [n.b. more than 46 at all sites modelled] (para. 5.61);
- Breckland SAC: “the predicted annual mean NOx concentrations will be approximately 6% above the limit value of 30 µg.m⁻³ at the edge of the site... the predicted N deposition rate is above the lower critical load but below the upper critical load of 10-20 Kg.N.ha⁻¹.yr⁻¹ for heath and grassland at this location.” (para. 5.69-5.70);
- Breckland SPA: similar to Breckland SAC (para. 5.78-5.79).

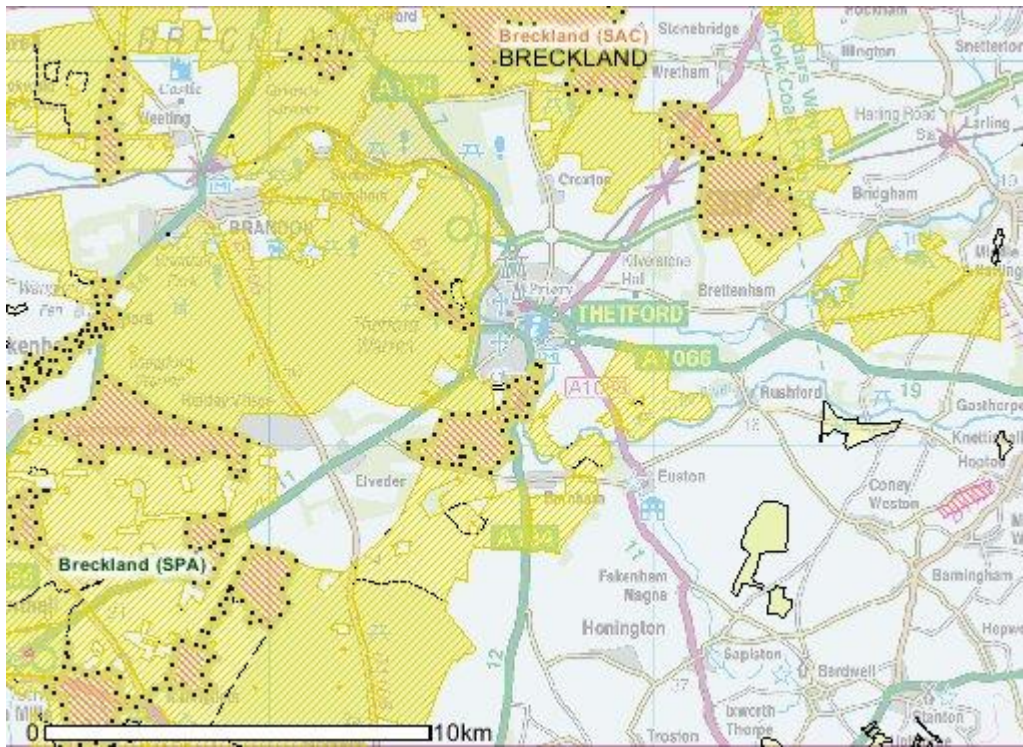
These points are duly summarised in the report’s final chapter. The report then concludes, rather startlingly and with no additional information:

“A number of policies within the RSS have been developed to avoid adverse air quality at designated sites. These include policy E2, C2, T1 to T5, T7 to T14, ENV7, SS1, ENG1 and ENG2. It is concluded that policies in the draft East of England Plan are not likely to affect the integrity of designated sites...” (para. 7.4-7.5).

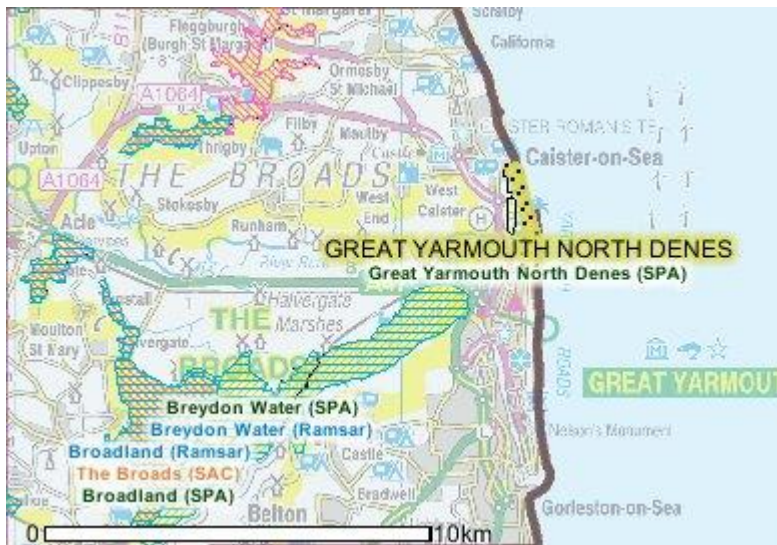
The RTS promotes the road projects used in the HRA modelling *despite* these avoidance measures, and the HRA does not suggest that its modelling results are a worst case scenario. As such, it is difficult to see how these policies would mitigate the RTS roads’ impacts to the level that they would no longer cause a significant impact on the integrity of the European sites.

³⁰ The conversion factors that we have seen show a gradual decrease in air pollutants between 2003 and 2020.

Appendix C. Maps of relevant European sites



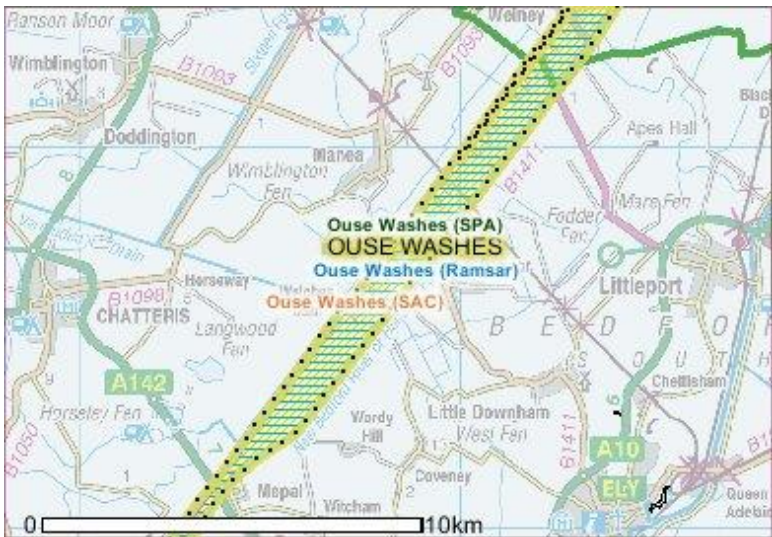
1/7. Breckland SPA/SAC



2. Great Yarmouth North Denes



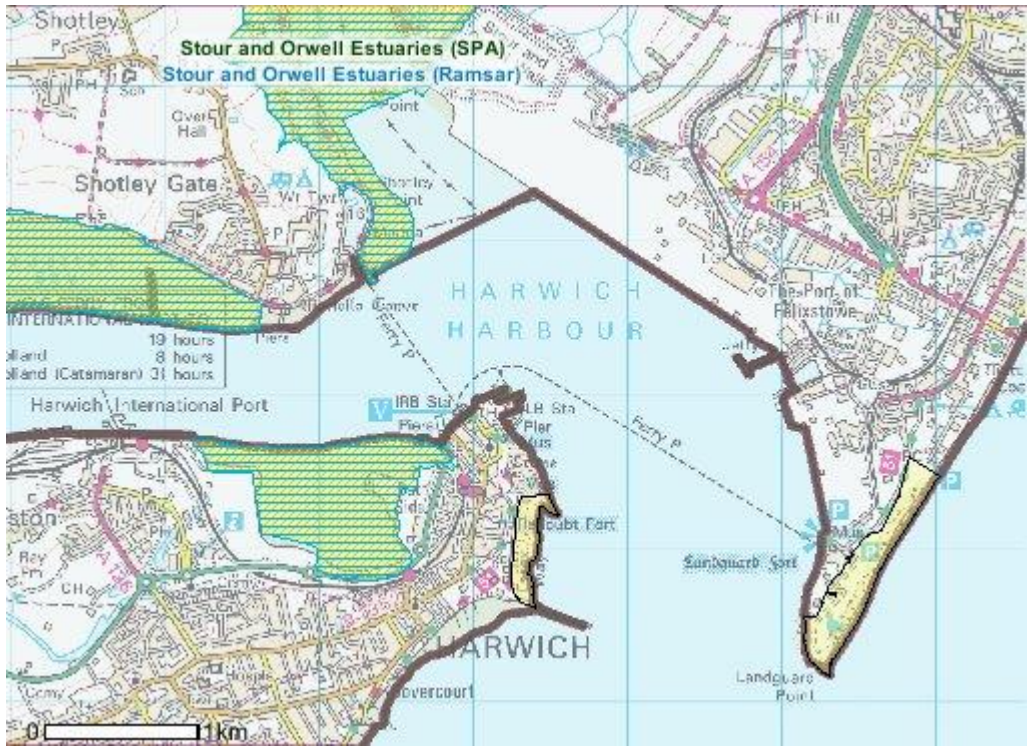
3. Lee Valley SPA/Ramsar



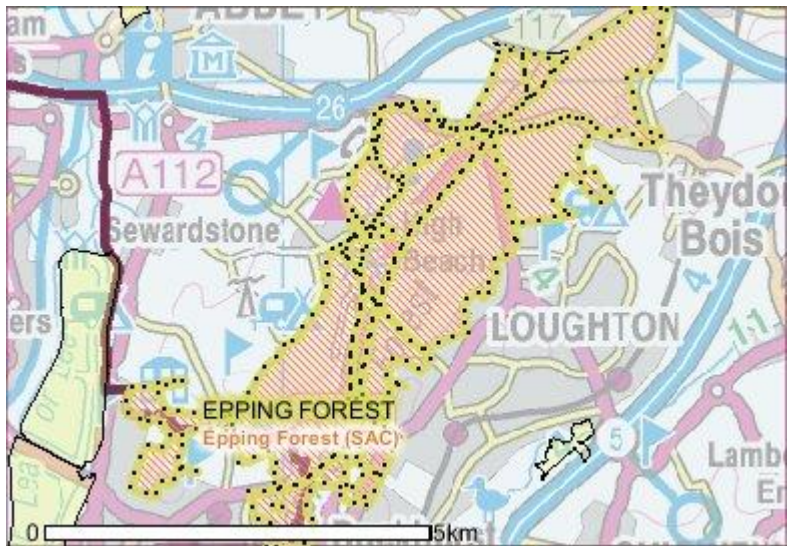
4. Ouse Washes SAC/SPA/Ramsar



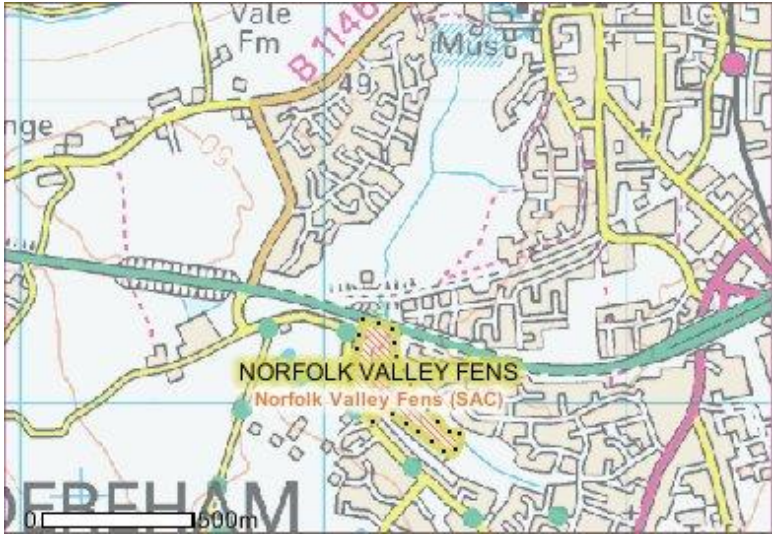
5/10. Portholme SAC



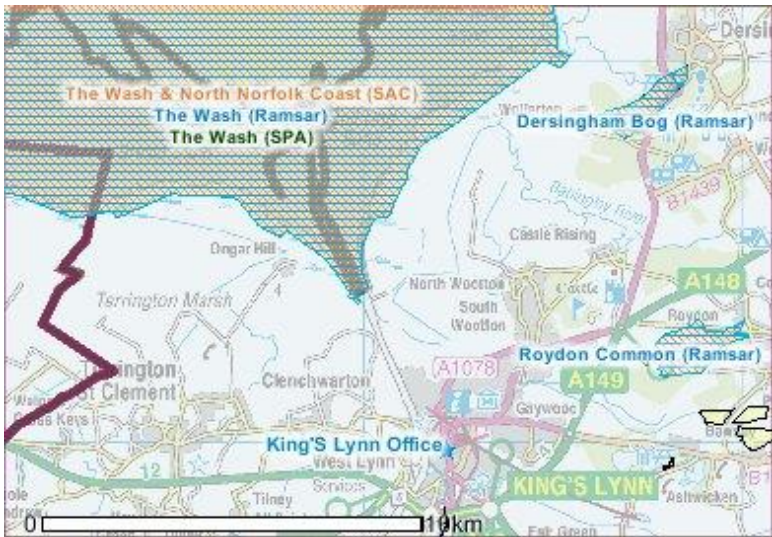
6. Stour and Orwell Estuaries SPA/Ramsar (shows Harwich and Felixstowe ports)



8. Epping Forest SAC



9. Norfolk Valley Fens SAC



12. The Wash etc. SAC/SPA/Ramsar



12. European sites near London Gateway port

Appendix D. HRA-related impacts v. Further Proposed Changes

	Site affected and reason	HRA information on the issue	Secretary of State’s Further Proposed Changes	Remaining gaps
1	<p>Breckland SAC/SPA: recreational disturbance on stone curlew, nightjar, woodlark and general habitat</p>	<p>“Following an analysis of where houses could be built within the existing urban area, [a recently published masterplan for growth in and around Thetford] concludes that there needs to be in the period to 2021 the construction of 4,300 new homes through an urban extension on greenfield land... it identifies the need for development of two greenfield areas [one of which is] to the east of Thetford of ca 85ha, bounded by a buffer to the Breckland SPA.</p> <p>In this process the sensitivity to disturbance of the Stone Curlew of the Breckland SPA is recognised but no detailed analysis is given on potential impacts on the SAC. There is a parallel study to the masterplan – a Green Infrastructure Study – that may yet address the risk of recreational damage to the SAC...</p> <p>There are areas of the SPA within an accessible distance from Thetford and the urban expansion proposed... People are able to and will access these areas on foot, with or without dogs... Direct ‘footprint’ damage is possible if the urban extension took place over farmland outside of the SPA but on which Stone Curlew fed at night...</p> <p>Some parts of the SAC are so close to Thetford as to be impossible to mitigate for damage through... routes of access. Common land status makes exclusion fencing very controversial... There appears little scope for the creation of greenspace (specifically managed as a dog walking area) placed between the proposed eastern extension of Thetford and the Breckland Farmland SSSI component of the SOA to provide effective mitigation... There</p>	<p>TH1 Thetford Key Centre for Development and Change: “... The principal aims to be furthered through the preparation of LDDs to support the role of Thetford as a New Growth point should be: to increase the number of dwellings in and on the edge of the town by 6,000 between 2001 and 2021 through maximising sensitive development within the urban area which respects its historic settings and features and through sustainable urban extensions which avoid harm to the Breckland SPA and/or Breckland SAC.”</p> <p>Supporting text to TH1 to read: “The objective is to provide an additional 6000 dwellings by 2021 with the potential for further growth after 2021 but the location and scale of development will need to take full account of the town’s proximity to vulnerable protected species and habitats, and the development strategy must avoid harm to designated European sites and their qualifying features. Key issues will be the location of new development, the provision of green infrastructure, and management measures to protect sensitive breeding bird populations from disturbance.”</p> <p>SS8 Land in the Urban Fringe: “...Local development documents should ensure that new development in or near the</p>	<p>The HRA suggests that TH1 is internally inconsistent: that it is unlikely that both 6000 extra dwellings (plus potential for further growth after 2021) can be provided and the SAC/SPA protected.</p> <p>The supporting text does identify management tools for doing this, but does it need separate policy a la Thames Basin Heaths? Some kind of buffer?</p> <p>This is particularly significant given that the HRA shows that the site is likely to suffer significant air pollution impacts from the RSS; and that local groundwater abstraction is already having a deleterious impact on the site’s eutrophic lakes.</p>

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
		<p>appears to be more scope for such greenspace provision adjacent to the proposed northern extension of Thetford to provide mitigation...</p> <p>The adverse impact on Stone Curlew is currently considered unlikely to be amenable to mitigation through interception using greenspace or on site management. Mitigation of potential impacts on Nightjar and Woodlark are possible”.</p>	<p>urban fringe contributes to enhancing its character and appearance and its recreational and/or biodiversity value and avoids harm to sites of European and international importance for wildlife in particular.” (though there is no direct reference to SS8 in TH1).</p>	

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
2	<p>Great Yarmouth North Denes SPA: recreational disturbance on little terms</p>	<p>“The Little Tern colony at the Great Yarmouth beach lies adjacent to the town with both residences and holiday accommodation next to the seafront. There is immediate and unimpeded access to the seafront by foot and the distances involved mean that there is a considerable catchment that can access the site... the site is used by both holidaymakers and local residents who use the beach to walk their dog(s) on a daily basis. The Little Tern colony at the Winterton Dunes beach is accessible from villages with both residences and holiday accommodation. There is unimpeded access from these villages to the seafront by foot. Access from the new residents of Great Yarmouth generated by the RSS policy would be by car... The breeding colonies are fenced off at both sites with active wardening by a combination of paid staff and volunteers... Access is currently well managed [but] this voluntary system could be at risk of being less effective with increasing access pressure.”</p>	<p>Supporting text to GYL1 Great Yarmouth and Lowestoft Key Centres for Development and Change to read: “Development of existing industries and diversification into new and emerging sectors which make the most of the towns’ environmental and locational assets... will contribute towards economic, social and physical regeneration. The focus will be on brownfield redevelopment to achieve regeneration and urban renaissance, whilst protecting and enhancing the natural and historic environment, and avoiding any adverse impact on the Winterton-Horsey Dunes and Broads SACs, and the Great Yarmouth North Denes and Broadland SPAs in particular. The continuation of management measures to protect the little term colony at Great Yarmouth North Denes will be essential.”</p>	<p>Given the significance of this issue, the mitigation should really be in main policy not supporting text; but otherwise arguably OK.</p>

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
3	Lee Valley SPA/Ramsar: water quality, flooding, possible habitat loss, with impacts on bitterns and overwintering wildfowl	The RSS proposes 47,100 new households in the catchment area of the Rye Meads Sewage Treatment Works, which can currently only accommodate another 11,000. The HRA does not specify whether it is possible to expand sewage treatment capacity at Rye Meads sewage treatment works (STW) without expanding the area of the STW. The HRA notes that "expansion of the STW could result in loss of wildlife habitat, including direct loss of the European site, or other land which may support species for which the site is designated... If the STW cannot be expanded then there is a risk that water quality and flood risk in the River Lee may be adversely affected."	<p>WAT 2 Water Resource and Waste Water Infrastructure Development: "The Environment Agency and water companies should work with OFWAT, EERA and the neighbouring regional assemblies, local authorities, delivery agencies and others to ensure timely provision of the appropriate additional infrastructure for both water supply and waste water treatment to cater for the levels of development provided through this plan, whilst meeting agreed surface and ground water standards..."</p> <p>Supporting text to WAT 2 to read: "10.8... Work on options for expanding sewage treatment capacity to serve the Rye Meads catchment area, which includes Stevenage, Harlow and Welwyn is a priority. Restrictions in capacity at Rye Meads, which discharges into the Lea Valley SPA, will need to be overcome without harm to the European site or its qualifying features. A strategic review of the options is required, looking beyond incremental expansion to new facilities or other possible works. Depending on the necessary lead in times, this may bear on the rate of delivery..."</p> <p>"10.9 In parts of the region, existing waste water treatment infrastructure (sewage treatment works and the associated pipe network) operate at the limits of their current discharge consents. Where capacity limits have been identified and additional infrastructure is required, new development may need to be phased to ensure it does not exceed the capacity/environmental limits of the infrastructure. Additional capacity for waste water treatment included in Water Company investment plans... will be delivered within the regulatory framework provided by OFWAT and the Environment Agency. The scale of the investment required suggests this will be a critical delivery issue for the region..."</p> <p>H2 Approach to Supply of Housing Land at the Local Level: "... Decisions on the sequence of development should take account of the following guiding principles... co-ordination of development with</p>	<p>The RSS assumes that it will be physically feasible to provide adequate wastewater treatment, but this may not be the case. In such a case, revising the rate of delivery may not be enough: it may be necessary to reconsider housing numbers altogether.</p> <p>No mention of impacts to the Lee Valley Ramsar site at 10.8 (which is referred to in several other policies). The Ramsar site has been designated for some reasons additional to those of the SPA (water milfoil <i>Myriophyllum verticillatum</i> and water boatman <i>Micronecta minutissima</i>).</p>

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
			<p>necessary transport and other infrastructure provision, including provision for water supply and waste water treatment". The supporting text refers directly to Policy WAT 2</p> <p>LA3 Welwyn Garden City and Hatfield Key Centre for Development and Change: "... The strategy for these towns involves the following main elements: ... Additional waste water treatment capacity, planned and delivered working with the industry and its regulators."</p> <p>HA1 Harlow Key Centre for Development and Change: "... LDDs should provide for a total of 16,000 additional dwellings... Additional waste water treatment capacity will be required, and this should be planned and delivered working with the industry and its regulators."</p> <p>SV1 Stevenage Key Centre for Development and Change: "... The main elements of this strategy are... additional waste water treatment capacity, planned and delivered working with the industry and its regulators."</p> <p>Supporting text to LA3 (13.51), HA1 (13.72) and SV1 (13.89): "Any necessary waste water infrastructure requirements will need to be programmed into the water companies' business plans, informed by the relevant studies, see paragraph 10.8, which addresses the constraints at Rye Meads sewage treatment works."</p>	<p>Specify at the end of 10.8 "bear on the rate of delivery of housing and employment development"</p>

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
4	Ouse Washes SAC/SPA/Ramsar: water quality, flooding	<p>“A flood risk is flagged in the [East of England Capacity Delivery Strategy Study (Halcrow, 2006) as likely to cause an increase in the flood risk on the receiving watercourses. A flood risk... is flagged in the study for any development with more than 3,500 additional homes draining to a treatment works. No discharge capacity of the receiving watercourse has been undertaken...</p> <p>The growth identified in the draft RSS for the Bedford and Luton subregion may increase the effluent discharge of the Dunstable and Chalton STWs to the River Ouse. This may cause an increase in the flood risk of the Great Ouse which may affect the integrity of the Ouse Washes [and Portholme SAC]. Further study should be undertaken on the discharge capacity of the receiving watercourse due to the flood risk caused by the increase in effluent discharge of the Dunstable and Charlton STWs...</p>	<p>See WAT 2 and supporting text 10.9, and H2 under 3.</p> <p>Supporting text to WAT 2 also to read: “10.8... Further work on river capacity in is also needed in a number of other locations, including Basildon, Chelmsford and Luton, Dunstable and Houghton Regis. These studies should identify strategic water / waste water infrastructure requirements for inclusion in business plans, and should be completed in time to inform the preparation of LDDs...”</p>	<p>The Halcrow report flags up problems that might be found through ‘further work on river capacity’ and that might affect the rate of growth proposed in the East of England plan and/or a limitation of the total numbers of additional connected properties. This uncertainty – and measures to deal with it - is not reflected in the RSS.</p>
5	Portholme SAC: water quality, flooding	<p>The plant community for which the [Portholme] SAC is designated... would be sensitive to changes in the flooding regime and/or nutrient enrichment” (para. 9.16, 9.29, 9.30, 18.25, 18.32)</p> <p>The 2006 Halcrow ‘Phase 1’ study identified STWs where “the estimated flow to full treatment in 2021 [will be] 20 percent or more of the 20 year river catchment flow”. It subsequently notes that “Some of the watercourses [identified using this method] may be proven by additional study not to represent a problem. For other treatment works, the constrictions in watercourses may present restrictions to expansion... Removal or reduction in volume of the additional discharge to the restricted watercourse by means of pumping effluent to a larger watercourse could be considered: however the environmental impact of pumping effluent across country can be considerable and needs to be taken into account when considering the overall sustainability of this option [and] can involve a protracted planning and delivery phase... for these areas, there could be an impact upon the rate of growth proposed in the East of England plan and/or a limitation of the total numbers of additional connected properties.”</p>		

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
6	Stour and Orwell Estuaries SPA/ Ramsar: recreational disturbance from housing; impacts of port expansion	<p>"Of the five Suffolk estuaries, the Stour and Orwell are subject to the most human pressure... The Orwell is one of the most popular sailing centres outside the south coast, with around 3,000 boats based here [and] substantial growth in berths at the five marinas over the last 10 years... The Stour and Orwell Path runs around the estuaries from Felixstowe to Manningtree... The Essex Way runs along the south side of the Stour... There is concern that [bait digging] causes disturbance to winter-feeding birds, damages mudflat communities... the estuary is home to Britain's largest container port at Felixstowe, the expanding Harwich International Port and one of the UK's major roll-on/roll-off facilities at Ipswich. The Haven Ports form one of the busiest areas for commercial shipping in the UK...</p> <p>Mitigation of recreational use is provided only to a limited extent by the distance between the potential sites for housing development in and around Ipswich and the intertidal areas of the European site... Mitigation of the effects of port expansion has been delivered through compensatory habitat provision within the estuary and the use of dredgings to build up intertidal flats that are eroding...</p> <p>Housing growth alone... is not considered to have an effect on the populations of the wintering and passage wildfowl and waders and breeding Avocet that are the European site and Ramsar site international interest. The increase in recreational access is not predicted to be at an intensity of coincide with the locations that adverse effects will</p>	<p>HG2 Employment Generating Development: "LDDs will provide an enabling context for not less than 50,000 additional jobs in Haven Gateway... through supporting the maintenance and appropriate expansion of the ports, maritime and related activities, recognising.... recently approved proposals for new container handling capacity at Bathside Bay [Harwich] and Felixstowe South".</p> <p>E2 Provision of Land for Employment: "... [employment sites] should be at locations which... avoid any adverse impact on sites of European or international importance for wildlife."</p> <p>T11 Access to Ports: "Access to the region's ports should... enable them to contribute to national and regional objectives in relation to economic growth and regeneration, consistent with the provisions of Policy E2..."</p> <p>Supporting text to T11 to read: "all development associated with the region's ports should avoid any adverse impact on sites of European or international importance for wildlife."</p> <p>SS9 The Coast: "... local authorities and other agencies should seek, through their plans and management strategies, to achieve... the conservation of the coastal environment and coastal waters... particularly in those areas of coastline and estuary designated as sites of European or international importance for</p>	<p>Again, is this not an internally inconsistent policy? Is it possible for both port activities to increase and 'avoid any impacts' on the SPA/ Ramsar? May be a moot point given approval of port development at Harwich.</p> <p>"Development associated with the region's ports" 1. could suggest not ports themselves but just associated development, and 2. does not seem to cover the most significant impact, i.e. that of shipping, not the ports themselves.</p> <p>RSS should clarify that the</p>

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
		<p>occur. Port expansion does have the potential to have an effect... there is the potential for the port development to have a footprint over the location of some of the plants and the habitats of the invertebrates that are the interest feature of the Ramsar site. There is also the potential for the port development to alter water and sediment movement..."</p>	<p>wildlife...</p> <p>Local development documents should:... protect important coastal environmental assets, if practicable and sustainable without causing adverse impacts elsewhere, including on sites of European importance for wildlife. If it is not practicable to protect sites or habitats in situ, including sites of European or international importance for wildlife, shoreline management plans and development plans should include proposals for their long-term replacement..."</p> <p>The supporting text to SS9 suggests that the latter clause applies to rising sea levels and coastal squeeze.</p>	<p>SS9 statement starting "If it is not practicable..." only applies to coastal squeeze.</p>

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
7	Breckland SAC/SPA: N deposition and NOx levels from road	Traffic on the A11, which passes through the site, is expected to grow by 60% between 2003 and 2021 but vehicle technology is improving and pollution levels are expected to drop overall. Still, NOx levels in 2021 are predicted to be 6-10% over the limit value, and N deposition rates above the lower critical load (though below the higher).	The HRA refers to the following (pre further proposed changes) RSS policies, noting that they mitigate the impacts of the road proposals of T6. No additional action is proposed in the further proposed changes. <ul style="list-style-type: none"> E2 Provision of Land for Employment: sites should be at locations which minimise commuting and maximise potential use of public transport C2 Provision and Location of Strategic Leisure, Sport, Recreation, Arts or Tourism Facilities – proposals should maximise opportunities to use means of transport other than the car and use transport networks that have adequate capacity to accommodate passenger and rail freight requirements 	The road schemes listed at Appendix D of the HRA, and which provide the basis for the HRA's modelling exercise, are being proposed <i>despite</i> the RSS's other policies which aim to change travel behaviour. The DMRB model's assumptions about future traffic growth on roads presumably includes some adjustment for the behavioural change brought about by policies such as those listed on the left. As such, the policies on the left don't mitigate the impacts of the RTS schemes; there may simply
8	Epping Forest SAC: N deposition and NOx levels from road	The site is within 200m of the M25, and improvements to the M11 might cause vehicles to divert along roads close to the site during the construction period. Despite a 58% increase in traffic on the M25 to 2021, air pollution levels at Epping Forest are expected to decrease. Still, NOx levels are expected to be above the limit value at more than 80m from the centre of the M25, and N deposition rates will be more than twice the higher critical load range (three times the lower). The analysis does not cover the smaller roads running through the site.	<ul style="list-style-type: none"> T1 Regional Transport Strategy Objectives and Outcomes: aim to give a clear priority to increase travel by more sustainable modes, including management of travel behaviour T2 Changing Travel Behaviour – aims to bring about a significant change in travel behaviour through education, travel plans etc. T3 Managing Traffic Demand – supports road pricing and other demand management measures T4 Urban Transport – promotes walking, cycling and public transport in urban areas T5 Inter Urban Public Transport – promotes improvements to public transport between urban areas T7 Transport in Rural Areas – promotes 'sustainable access' from villages and other rural settlements to market towns and key service centres T8 Management of Local Roads – focuses on tackling congestion and providing efficient vehicular access where it is needed T9 Walking, Cycling and other Non-Motorised Transport – aims to improve networks for such modes, and provide access 	
9	Norfolk Valley Fens SAC: N deposition from road	Traffic on the A47, which passes through part of the site, is expected to grow by 35% to 2021. N deposition rates in		

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
		2021 are predicted be lower than in 2003, but still more than twice the higher critical load range (four times the lower)	<p>to the countryside and urban greenspace</p> <ul style="list-style-type: none"> • T10 Strategic Freight Movement – aims to improve freight movement by rail and water • T11 Access to Ports promotes the use of modes other than road for freight transport to/from ports • T12 Access to Airports – aims to reinforce the shift to more sustainable travel to/from airports • T13 Public Transport Accessibility – aims to increase accessibility to public transport • T14 Parking – promotes the use of parking controls as a way of influencing travel change • ENV7 Quality in the Built Environment – new development should maximise opportunities for access by a choice of travel modes 	<p>have been even <i>more</i> road schemes if the other policies had not been in place. In other words, the air pollution impacts on the European sites have not been mitigated.</p>
10	Portholme SAC: NOx levels from road	Traffic levels on the A14, which runs adjacent the north east corner of the site, are expected to rise by 20% to 2021. Air pollution in 2021 is predicted to be lower than in 2003, but mean NOx concentrations will still be above the limit value at up to 80m from the centre of the A14.		
11	possibly other sites (see Appendix B): air pollution from roads, ports etc.		<ul style="list-style-type: none"> • SS1 Achieving Sustainable Development – promotes sustainable development principles, including on access, carbon emissions and environmental limits • ENG1 Carbon Dioxide Emissions and Energy Performance – aims to meet targets for CO2 emissions reductions • ENG2 Renewable Energy Targets – sets targets for renewable energy production in the region 	

	Site affected and reason	HRA information on the issue	Secretary of State's Further Proposed Changes	Remaining gaps
12	other European sites near ports: SOx, disturbance, water pollution from port development	<p>No information in the HRA. Impacts could be caused by:</p> <ul style="list-style-type: none"> • ETG5 which supports a new container port facility at London Gateway (effect on Benfleet and Southend Marshes SPA/ Ramsar and Thames Estuary and Marshes SPA/ Ramsar) • supporting text to KL1 which promotes growth of King's Lynn's commercial port (effects on The Washes SAC/SPA/Ramsar) <p>GL1 (port and related activities at Great Yarmouth and Lowestoft) is unlikely to have an effect as there are no estuarine sites nearby.</p>	<p>E2 Provision of Land for Employment: "... Sites of sufficient range, quantity and quality to cater for all relevant employment sectors should be provided at appropriate scales... These should be at locations which... avoid any adverse impact on sites of European or international importance for wildlife."</p> <p>T11 Access to Ports: "Access to the region's ports should... enable them to contribute to national and regional objectives in relation to economic growth and regeneration, consistent with the provisions of Policy E2..."</p> <p>Supporting text to T11 to read: "Port developers should contribute to the delivery of these improvements, and all development associated with the region's ports should avoid any adverse impact on sites of European or international importance for wildlife."</p>	The proposed changes should avoid impacts of construction and operation of ports, but are unlikely to deal with impacts of shipping.
13	offshore wind power generation: disturbance to migrating birds	<p>No information in the HRA. Much of the region's coast is designated, mostly for its overwintering birds: Benfleet and Southend Marshes SPA, Crouch and Roach Estuaries SPA, Blackwater Estuary SPA, Colne Estuary SPA, Hamford Water SPA, etc. The RSS promotes the development of roughly 2600MW of offshore energy production to 2020, equivalent to about 90 turbines at an average 3MW per turbine. Other HRAs of RSSs suggest that wind farms can disturb birds, affect their migration patterns, cause bird strike, and affect birds' food sources.</p>	<p>ENG2 Renewable Energy Targets notes: "By 2010 At least 1192 Megawatts of installed capacity for renewable energy; by 2020 At least 4250 Megawatts of installed capacity. These targets are equivalent to 14% of total electricity consumption in the East of England (or 10% excluding offshore wind) by 2010, and 44% (17% excluding offshore wind) by 2020. The above targets are subject to meeting European and international obligations to protect wildlife, including migratory birds..."</p>	This leaves a query over whether the proposed level of offshore wind power generation is possible without affecting European sites and, if not, where the best locations would be. Could lead to less ideal sites being developed, and then better ones being sterilised because of cumulative impacts.