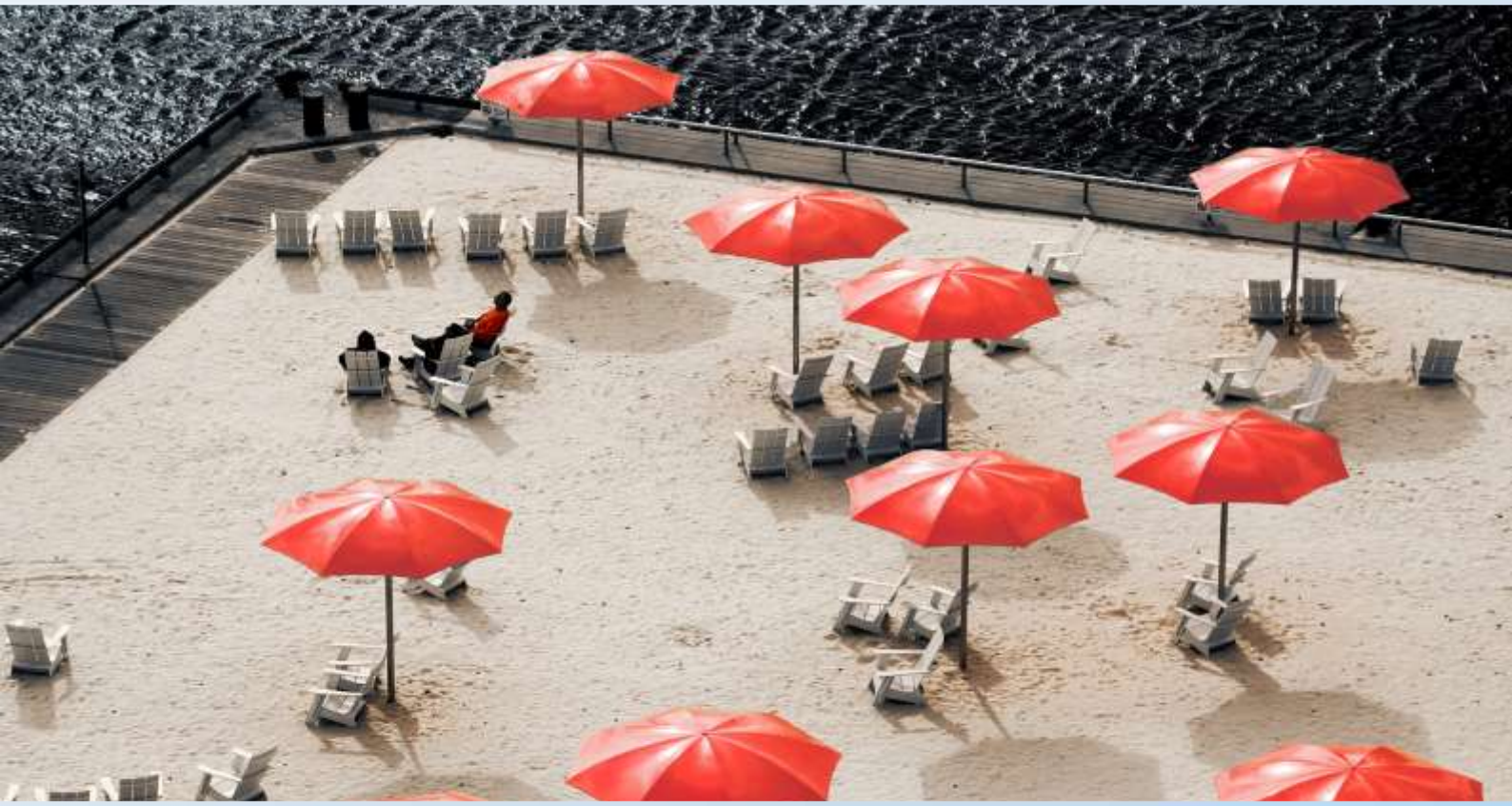
England's Economic Heartland

INFORMATION TO INFORM HABITATS REGULATIONS SCREENING

Appendix G to the ISA



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PUBLIC

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Appendix G to the ISA

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CONTENTS

TABLES

APPENDICES

APPENDIX A

RELEVANT DESIGNATED SITE INFORMATION

APPENDIX B

IMPACT IDENTIFICATION FOR RELEVANT NATURA 2000 AND RAMSAR SITES

EXECUTIVE SUMMARY

Under the requirements of the European Council Directive 92/43/EEC 'The Habitats Directive' and the Council Directive 79/409/EEC 'The Wild Birds Directive' it is necessary to consider whether the EEH Transport Strategy may have significant impacts upon areas of nature conservation importance designated/classified under the Directives.

This HRA screening assessment has been produced as part of an Integrated Sustainability Appraisal (ISA) for the EEH Transport Strategy.

The vision of England's Economic Heartland (EEH) is to realise sustainable growth opportunities, improve the quality of life and wellbeing for Heartland residents and businesses, by harnessing the Heartland's globally renowned centres of innovation to unlock a world class, de-carbonised transport system. The EEH strategic priorities include the following:

- Achieving net-zero carbon emissions from transport no later than 2050
- Improving quality of life and wellbeing through an inclusive and accessible transport system which emphasises sustainable and active travel
- Supporting the regional economy by connecting people and businesses to markets and opportunities
- Ensuring the Heartland works for the UK by ensuring the efficient movement of people and goods through the region and to/from international gateways.

Details and potential locations of projects (transport interventions) for implementing the EEH Transport Strategy have not been developed and will follow as part of the implementation of the Transport Strategy. Rather, the Transport Strategy sets out the policies to be considered in the future development and decision-making of projects. Therefore, this screening assessment is provided at a high level. Potential development requirements are provided and considered assumptions are made regarding potential locations in relation to European Sites. These assumptions will require refinement during the implementation of the Transport Strategy , particularly at scheme level as part of the HRA(s) to be provided during delivery of the Strategy by EEH Partners and other scheme deliverers.

A total of 52 international designated sites have been identified as being present within the initial Zone of Influence (ZoI) set for the EEH Transport Strategy including: 39 Special Areas of Conservation (SACs); seven Ramsar sites; and six Special Protection Areas (SPAs).

Through screening for potential impacts, it has not been possible to categorically demonstrate that the EEH Transport Strategy will not have any impacts upon European sites.

Given the possibility of significant effects associated with the EEH Transport Strategy, further detailed assessment through Appropriate Assessment is considered necessary to satisfy the requirements of the Habitats Regulations. Each individual plan and / or project will need to be subject to an Appropriate Assessment prior to consent and there will be the required level of scrutiny

at this stage to protect the European sites. The EEH Transport Strategy is to be published at a strategy level and will not give detail on potential projects or proposals for its implementation. As a result, it is not possible to enable a more in-depth analysis to the degree required for Appropriate Assessment. It will only be possible to undertake this level of assessment once specific plans and/or projects are proposed and/or once sufficient detail is available at the plan level to enable a thorough and robust analysis to be carried out.

Full recommendations for mitigation will be made within each project/plan-level screening assessment and Appropriate Assessment. These will suggest measures to reduce the potential for any development to result in impacts upon the European Sites.

Recommendations for adoption in the EEH Transport Strategy include the following:

- development will not be located within any European site so that no direct habitat loss will occur.
- wherever possible works will be avoided where there is a direct transmission pathway to European sites (such as a European site downstream of a new road).
- buffer zones will be provided between construction/improvement works and European sites (the size and extent of which should be dependent upon the nature of impact and the sensitivity of receptors).
- there would be a general presumption against the permitting of construction/improvement works which generate adverse effects in proximity to European sites, which are sensitive to those effects e.g. where adverse impacts on the water environment are identified, and that improved access to European sites will be closely monitored and managed to ensure the integrity of the sites is not compromised.
- HRA will be necessary in accordance with part 6 of the Habitat Regulations at each tier of the strategy's development (from strategy through to scheme level) as part of the delivery of the HRA.

1. INTRODUCTION

1.1. INTRODUCTION AND BACKGROUND

1.1.1. The vision of England's Economic Heartland (EEH) is to realise sustainable growth opportunities, improve the quality of life and wellbeing for Heartland residents and businesses, by harnessing the Heartland's globally renowned centres of innovation to unlock a world class, de-carbonised transport system.

1.1.2. Under the requirements of the European Council Directive 92/43/EEC 'The Habitats Directive and the Council Directive 79/409/EEC 'The Wild Birds Directive' it is necessary to consider whether the EEH Transport Strategy may have significant effects upon areas of nature conservation importance designated/classified under the Directives. This requirement is transposed into UK law through the Conservation of Habitats and Species Regulations 2017 (as amended) ('The Habitat Regulations'). The Habitat Regulations place a duty upon 'Competent Authorities' to consider the potential for effects upon sites of European importance prior to granting consent for projects or plans. Should likely significant effects be identified by the initial screening process it is necessary to further consider the effects by way of an 'Appropriate Assessment'. Overall this process of assessment is known as Habitats Regulations Assessment (HRA) and further details of the applicable legislative context are summarised within Section 1.2 below.

1.1.3. In addition, the UK is a signatory to the Convention on Wetlands of International Importance especially Waterfowl Habitat (the Ramsar Convention)[1]. The Convention has three main 'pillars' of activity: the designation of wetlands of international importance as Ramsar sites, the promotion of the wise use of all wetlands in the territory of each country and international co-operation with other countries.

1.1.4. The UK has generally chosen to underpin the designation of its Ramsar sites through prior notification of these areas as Sites of Special Scientific Interest (SSSIs) in England. Accordingly, these receive statutory protection under the Wildlife and Countryside Act (1981) as amended. Government has also issued policy statements relating to the special status of Ramsar sites. This extends the same protection at a policy level to listed Ramsar sites in respect of new development as that afforded to sites which have been designated under the EC Birds and Habitats Directives as part of the EU Natura 2000 network.

1.1.5. This document provides information to enable the screening of the EEH Transport Strategy, covering the following four elements:

- determining whether the plan (strategy) is directly connected with or necessary for the management of applicable sites;

1 Guidance provided by UK Government on the assessment of planning applications in relation to designated sites is given at https://www.gov.uk/guidance/protected-sites-and-areas-how-to-review-planning-applications, which clearly includes Ramsar sites within the highest level of protection.

- describing the project/plan (strategy) that may have the potential for significant effects upon applicable sites;
- undertaking an initial scoping for potential direct and indirect impacts upon applicable sites; and
- assessing the likely significance of any potential effects identified as resulting from these impacts, both alone and in-combination with other plans and projects.

1.1.6. A description of the Transport Strategy and the designated sites identified are provided within Sections 2 and 3 respectively. Consideration of potential effects of the Transport Strategy upon the designated sites and whether these are likely to be significant is provided within Section 4.

1.2. HABITAT REGULATIONS ASSESSMENT CONTEXT

LEGISLATIVE CONTEXT

1.2.1. Article 6 (3) of the European Union Habitats Directive (1992, as amended, 'the Habitats Directive') sets out the need for 'Appropriate Assessment' of plans or projects which have potential to affect the integrity of a Natura 2000 site (including Special Protection Area (SPA),Special Area of Conservation (SAC) and candidate SAC (cSAC) sites) as follows:

- 'Any plan or project likely to have a significant effect on a Natura 2000, either individually or in combination with other plans or projects, shall undergo an Appropriate Assessment to determine its implications for the site. The competent authorities can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site concerned' (Article 6.3).

1.2.2. As the purpose of the Natura 2000 network is the preservation of examples of species and habitats across Europe, rather than preservation of individual sites, Article 6 (4) allows for exceptional circumstances where negative effects may be permitted. This reads:

- 'In exceptional circumstances, a plan or project may still be allowed to go ahead, in spite of a negative assessment, provided there are no alternative solutions and the plan or project is considered to be of overriding public interest[2]. In such cases the Member State must take appropriate compensatory measures to ensure that the overall coherence of the N2000 Network is protected.' (Article 6.4)

1.2.3. The Habitats Directive is transposed into UK law through the Conservation of Habitats and Species Regulations 2017 ('Habitat Regulations'); Regulation 63 (1) states that:

- 'A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—

[2] An exact definition of 'imperative reasons of overriding public interest' is not provided, but EC guidance states *'It is reasonable to consider that the "imperative reasons of overriding public interest, including those of social and economic nature" refer to situations where plans or projects envisaged prove to be indispensable:*
- within the framework of actions or policies aiming to protect fundamental values for the citizens' life (health, safety, environment);
- within the framework of fundamental policies for the State and the Society;
- within the framework of carrying out activities of economic or social nature, fulfilling specific obligations of public service.'

- (a) is likely to have a significant effect on a European site 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 that site,

- —must make an Appropriate Assessment of the implications for that site in view of that site's conservation objective.'

1.2.4. Like the Habitats Directive, the Habitat Regulations also make allowance for projects or plans to be completed if they satisfy 'imperative reasons of overriding public interest (IROPI)'[3]. Regulations 64 and 68 relate to such situations.

POLICY CONTEXT

1.2.5. It is a matter of Government policy (NPPF paragraph 176) that sites designated under the 1971 Ramsar Convention for their internationally important wetlands (commonly known as Ramsar sites), potential SACs (pSACs) and potential SPAs (pSPA) (where consultation has been initiated) are also considered in the same way as SACs, SPAs and cSACs.

1.2.6. For the purposes of this report all relevant sites as described above are collectively termed 'European sites'.

1.3. STAGES OF HABITATS REGULATIONS ASSESSMENT

1.3.1. Guidance on the Habitats Directive (European Commission, 2000) sets out the step wise approach which should be followed to enable Competent Authorities to discharge their duties under the Habitats Directive and provides further clarity on the interpretation of Articles 6 (3) and 6 (4). The process used is usually summarised in four distinct stages of assessment (regardless of whether it is a plan (strategy) or project).

- Stage 1: Screening: the process which identifies whether effects upon a Natura 2000 site of a plan or project are possible, either alone or in combination with other plans or projects and considers whether these effects are likely to be significant.
- Stage 2: Appropriate Assessment: the detailed consideration of the effect on the integrity of the Natura 2000 site of the plan or project, either alone or in combination with other plans or projects, with respect to the site's conservation objectives and its structure and function.
- Stage 3: Assessment of alternative solutions: the process which examines alternative ways of achieving the objectives of the plan or project that avoid adverse effects on the integrity of the Natura 2000 site.
- Stage 4: Assessment where no alternative solutions exist and where adverse effects remain: an assessment of whether the development is necessary for IROPI and, if so, of the compensatory measures needed to maintain the overall coherence of the Natura 2000 network.

1.3.2. This report presents information to enable the screening assessment required as part of Stage 1 of the HRA process, to establish if the EEH Transport Strategy could have a likely significant effect

[3] '*(a) reasons relating to human health, public safety or beneficial consequences of primary importance to the environment; or . (b) any other reasons which the competent authority, having due regard to the opinion of the European Commission, consider to be imperative reasons of overriding public interest.'*

upon European sites. The assessment has been based solely upon the preliminary information available in relation to the locations of corridors[4], rather than specific plans and/or projects.

1.3.3. The information presented within this assessment is therefore high-level and does not contain the level of detail typically presented for HRA screening exercises. For example, there are uncertainties regarding the nature, scale and footprint of any development associated with the corridors. These uncertainties limit the capacity of the HRA to reasonably predict the effects on relevant European sites.

1.3.4. In the Opinion of Advocate General Kokott in Case C-6/04 Commission v UK [2005] ECR I-9017 at paragraph 49 she noted that an assessment of plans cannot by definition take into account all effects because "Many details are regularly not settled until the time of the final permission" and "[i]t would also hardly be proper to require a greater level of detail in preceding plans or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated on one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure".

1.3.5. In accordance, any projects brought forward under the Transport Strategy will require (in accordance with Habitats Regulation 6) their own HRA assessment and this document does not preclude the need for further assessment during the design and delivery of schemes as part of the implementation of the Transport Strategy. However, the findings of this strategic level HRA can be incorporated into and explored at the appropriate level of detail at the next tier.

1.3.6. The precautionary principle is applied at all stages of the HRA process. In relation to screening this means that projects and plans where effects are considered likely and those where uncertainty exists as to whether effects are likely to be significant must be subject to the second stage of the HRA process, Appropriate Assessment.

1.3.7. It should be noted that this HRA screening assessment has been produced as part of an Integrated Sustainability Appraisal (ISA) for the EEH Transport Strategy to ensure that all HRA-related considerations are fully integrated into EEH Transport Strategy as it is developed.

Consultation on This Screening Report

1.3.8. Consultation forms an essential part of an HRA screening exercise. Natural England will be formally consulted on the findings of this screening exercise and due regard will be given to their representations.

[4] 19 corridors have been identified for further assessment, in order to develop a future programme of connectivity studies.

2. DESCRIPTION OF TRANSPORT STRATEGY ('PLAN')

2.1.1. The England's Economic Heartland (EEH) Transport Strategy aims to realise sustainable growth opportunities, improve the quality of life and wellbeing for Heartland residents and businesses, by harnessing the Heartland's globally renowned centres of innovation to unlock a world class, de-carbonised transport system. The development of the Transport Strategy will be the key mechanism for the EEH to document its vision and principles at a regional level. These are to include the following:

- Achieving net-zero carbon emissions from transport no later than 2050
- Improving quality of life and wellbeing through an inclusive and accessible transport system which emphasises sustainable and active travel
- Supporting the regional economy by connecting people and businesses to markets and opportunities
- Ensuring the Heartland works for the UK by ensuring the efficient movement of people and goods through the region and to/from international gateways.

2.1.2. As part of the development of a strategic programme of connectivity studies a high number of corridors, which were identified through engagement activities, were subject to a high level sifting exercise against the principles of the Transport Strategy. Following a high level sift 19 corridors[5] were identified for further assessment in order to develop a future programme of connectivity studies. In addition to these, guidance set out by Department for Transport requires developing a regional evidence base for transport interventions.

2.1.3. EEH has developed a Transport Strategy to help realise economic potential, whilst ensuring the principles of sustainable development are followed to maximise social and environmental benefits. Each corridor has diverse features, sensitivities and opportunities. The Transport Strategy does not seek to prescribe a solution to the need for connectivity within each corridor, nor does it set out new proposals for schemes in specific locations. Instead a series of policies are set out to guide decision making on the transport interventions that might be appropriate for addressing the challenges and exploiting opportunities for journeys in the region.

2.1.4. The preparation of the Transport Strategy alongside the ISA has allowed an iterative process of assessment and refinement in the narrative and policies within the Strategy. Therefore, some of the recommendations set out in this report may already have been addressed in the Transport Strategy. Similarly, the spatial corridors are also undergoing progressive and iterative assessment as part of the preparation of the Transport Strategy.

[5] The geographies, naming and scoping of the corridors are likely to change over time. The assessments of corridors for the ISA were undertaken during the process of development of the programme of connectivity studies and therefore represent assessment at a specific point in time. At this stage the study areas within each corridor are indicative and have no fixed defined boundaries; instead they follow general transport patterns within the England's Economic Heartland (EEH) Region.

3. RELEVANT DESIGNATED SITES

3.1.1. The Zone of Influence (ZoI) is defined by the potential effects arising from the project or plan and the available pathways for those effects to reach and affect interest features of European sites.

3.1.2. In order to identify all corridors where potential direct, indirect and in-combination impacts to European sites could reasonably be considered possible, an initial buffer of 2km around each corridor was established. This buffer was extended accordingly where a corridor was located up/downstream of a European site and up to 30km where bats are qualifying features of a SAC, cSAC or pSAC.

3.1.3. This approach follows Highways England Design Manual for Roads and Bridges (DMRB) guidance and provides a contextual framework for the consideration of impacts[6].

3.1.4. Relevant designated sites include all those that fall within the potential ZoI for the Transport Strategy. 52 European sites lie within the potential ZoI for the Transport Strategy, including 6 SPAs, 7 Ramsar and 39 SAC's (two designated for bat interest) located within the 30km search area.

3.1.5. The reasons for designation of these sites and the known vulnerabilities of these sites are summarised Appendix A, which has been collated from the Natura 2000 standard data forms (JNCC, 2016) and Site Improvement Plans (Natural England (NE) (NE, 2014).

3.1.6. With regard for the qualifying features and information on vulnerability of the sites detailed in Appendix A, the broad conservation objectives for SACs and SPAs are to:

- Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:
  - The extent and distribution of qualifying natural habitats and habitats of qualifying species
  - The structure and function (including typical species) of qualifying natural habitats
  - The structure and function of the habitats of qualifying species
  - The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
  - The populations of qualifying species; and
  - The distribution of qualifying species within the site.

3.1.7. The Habitats Directive provides further interpretation of the meaning of 'favourable conservation status' within Article 1 parts a, e and i as below:

[6] This approach is considered appropriate for this level of assessment; however, buffers may need to be revised to be specific to the individual plans and proposals produced to implement the Transport Strategy as and when they become available.

- ‘(a) conservation means a series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favourable status as defined in (e) and (i);…..
- (e) conservation status of a natural habitat means the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species within the territory referred to in Article 2. The conservative status of a natural habitat will be taken as "favourable" when:
  - its natural range and areas it covers within that range are stable or increasing, and
  - the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
  - the conservation status of its typical species is favourable as defined in (i);
- (i) conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2; The conservation status will be taken as "favourable" when:
  - population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
  - the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
  - there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis’.

3.1.8. Specific conservation objectives for Ramsar sites are not available.

4. SCREENING ASSESSMENT

4.1. STEP 1: THE STRATEGY AND MANAGEMENT OF INTERNATIONAL SITES

4.1.1. This stage considers whether the Transport Strategy is directly connected with or necessary to the management of European sites. Within this context 'directly' means that the plan is solely conceived for the conservation management of a site or group of sites and 'management' refers to the management measures required in order to maintain in favourable condition the features for which the European site has been designated.

4.1.2. The Transport Strategy is not directly connected with or necessary for the management of any of the European sites listed in Section 3. It has not been conceived solely to further the conservation of the site(s) and nor is it essential to the management of the site(s). Therefore, in accordance with the HRA process (refer to Section 1.3) further consideration of future schemes proposed as part of the implementation of the Transport Strategy within the HRA process is required, as and when such schemes are proposed.

4.2. STEP 2: DESCRIPTION OF THE TRANSPORT STRATEGY

4.2.1. A description of the Transport Strategy is provided in Section 2. However, details and potential locations of projects and/or specific plans for implementing the Transport Strategy are not proposed. Therefore, at this stage it is has only been possible to describe potential development requirements and the location of the connectivity studies in relation to European sites.

4.3. STEP 3: INITIAL SCOPING FOR IMPACTS AND EFFECTS ON EUROPEAN SITES

CONSIDERATION OF IMPACTS AND EFFECTS IN ISOLATION

4.3.1. Table 4-1 below provides an assessment of the potential development activities and associated impacts, which may arise as a result of the implementation of the Transport Strategy.

4.3.2. Appendix B utilises the information included within Sections 2 and 3 (description of the Transport Strategy and relevant designated sites), to identify whether potential impact/effect pathways between the corridors and relevant designated sites are likely, and whether these could result in likely significant effects (LSE) upon the designated sites.

4.3.3. It should be noted that for recreational pressures an initial ZoI of ≤500m has been assumed, and as many designated sites are on private land only those sites identified as being potentially vulnerable to public access/disturbance have been screened in, where required. The ZoI for hydrological threats has been assumed to be ≤2km where no surface water connectivity (i.e. between corridors and designated sites) is present. These ZoIs may need to be revised once more specific details in relation to Transport Strategy projects/plans become available.

Table 4-1 - Construction and Operation impacts of EEH Transport Strategy

Transport Strategy Principle (refer to Section 2 for details)	Possible Impacts
Achieving net-zero carbon emissions from transport no later than 2050	Decarbonising transport networks (i.e. rail/road fleet) may have the potential to positively impact upon European sites identified.
Improving quality of life and wellbeing through an inclusive transport system accessible to all which emphasises sustainable and active travel	Construction/improvement of transport links (to improve quality of life and wellbeing through an inclusive transport system accessible to all) in or adjacent to European sites has the potential for short-term and long-term impacts during construction and operation, including: ▪ Construction/adaptation/improvement of transport links: this has the potential for short and long-term (construction and operational phase) impacts through: habitat loss/damage/fragmentation; changes in air quality; changes in hydrology; disturbance to associated species through noise, visual and vibration emissions. ▪ Construction of cycle paths and walkways: such development in or adjacent to European sites may result in construction phase impacts: habitat loss/damage/fragmentation; changes air quality; changes in hydrology; disturbance to associated species through noise, visual and vibration emissions. In addition, increased human presence in proximity to designated sites may result in long-term (operational phase) impacts of visitor pressure to sites and disturbance to species. Habitat degradation (marine access: water sports, trampling of vegetation, soil compaction, erosion, fly tipping, air pollution through increased vehicle emissions) and disturbance (noise, light, visual) may result. ▪ Improving connectivity: adapting the existing transport network may have the potential to positively impact upon the European sites by removing barriers to dispersal by providing/enhancing habitat corridors, which are resilient to the added impacts of climate change.
Supporting the regional economy by connecting people and businesses to markets and opportunities	Construction/improvement of transport links (to support economic connectivity) in or adjacent to European sites has the potential for the following short-term and long-term impacts during construction and operation, including: ▪ Habitat loss/habitat damage and/or fragmentation: this may potentially compromise site integrity, wildlife corridors and migratory routes. ▪ Air quality: proposals leading to traffic generated emissions within 200m of a European site may result in significant effects (Natural England, 2018). Habitat degradation may result through the release of atmospheric pollutants and deposition of dust. ▪ Hydrology: changes to localised drainage and water balance as a result of drainage, run-off etc. has the potential to lead to significant effects. Changes to water quality and/or quantity may affect composition of species within designated habitats. Bridges/viaducts can constrict water flows and increase siltation. Rivers and streams are susceptible to the introduction of invasive plant and animal species, which can be spread through construction activities. ▪ Disturbance: noise/vibration/visual impacts to species may result in significant effects, for example construction in proximity to SPAs may result in mortality of qualifying bird species due to reduced feeding/breeding ability.

Transport Strategy Principle (refer to Section 2 for details)	Possible Impacts
	▪ Improving connectivity: this has the potential to positively impact upon the European sites by removing barriers to dispersal by providing/enhancing habitat corridors, which are resilient to the added impacts of climate change.
Ensuring the Heartland works for the UK by enabling the efficient movement of people and goods through the region and to/from international gateways	As per the above, the construction/improvement of transport links (to enabling the efficient movement of people) in or adjacent to European sites has the potential for both the short-term and long-term impacts.

4.4. POTENTIAL IN-COMBINATION IMPACTS AND EFFECTS

4.4.1. Given the strategic nature of this screening assessment and the uncertainties surrounding the timing and effects of other county/regional level plans and projects, it is not practicable at this stage to identify all the possible plans and projects that may act 'in-combination' or to consider the specific nature of likely effects arising.

4.4.2. However, it is possible to outline at a strategic level the broad types of effects that may arise from the implementation of other plans and projects which should inform the overall implementation of the Transport Strategy. Some of the effects (identified in Table 4-2 below) may occur as a result of the Transport Strategy alone (and as specified in Appendix B), but may also occur or be magnified as a result of a wider range of development actions and activities arising from the implementation of other plans and projects.

Table 4-2 - Potential strategic in-combination effects

Effects	Development actions and activities
Water resources and quality	Sewage and industrial effluent discharges from new developments Abstraction to secure water supplies for planned growth (housing, industry) Flood and coastal risk management development (for example, implementation of new flood defences)
Soil and geology	Changes in land use, in particular agricultural production
Air quality	Increase in atmospheric pollutants (for example, road, rail, airports expansion) Changes in atmospheric pollutants from power generation, in particular change in fossil fuel use to 'cleaner' technologies in industrial and domestic use

Effects	Development actions and activities
Disturbance	Construction and operation of new developments (transportation, residential, commercial, industrial) Recreational pressures including trampling from settlements expansion, Improved access (for example, national coastal footpaths) Infrastructure at height (chimney stacks, wind turbines)
Habitat (and species) loss and fragmentation	Direct land take (for example, road, rail, settlements, industrial) Barriers to migration (for example, tidal power, bridge construction)

4.4.3. Further assessment of the cumulative impacts of different plans and projects will not be specifically undertaken for this screening assessment. The cumulative and in-combination effects of plans and projects with the Transport Strategy have been considered as part of the ISA. Any subsequent next-tier screening assessments and Appropriate Assessment(s) will require consideration of the potential impacts of in-combination effects in greater detail as further information become available.

4.5. STEP 4: ASSESSMENT OF THE SIGNIFICANCE OF EFFECTS ON NATURA 2000 AND RAMSAR SITES

4.5.1. Table 4-3 below summarises the likelihood of occurrence of significant effects as a result of the the Transport Strategy.

Table 4-3 - Likelihood and occurrence of significant effects as a result of the Transport Strategy

EEH Transport Strategy Principles (refer to Section 2 for details)	Possible Impacts
Achieving net-zero carbon emissions from transport no later than 2050	Significant positive effects on the European Sites identified may be realised through decarbonisation.
Improving quality of life and wellbeing through an inclusive transport system accessible to all which emphasises sustainable and active travel	▪ This principle may require construction or improvement works. This may potentially lead to LSE on designated sites. Significant effects are likely through habitat loss/damage/fragmentation; changes in air quality; changes in hydrology; disturbance to associated species through noise, visual and vibration emissions. ▪ The construction of cycle paths and walkway may also increase human presence in proximity to designated sites, which may result in in long-term (operational phase) impacts of visitor pressure to sites and disturbance to species. ▪ Significant positive effects may be realised through improved habitat connectivity.
Supporting the regional economy by connecting people and businesses to markets and opportunities	▪ This principle may require construction or improvement works, which could potentially lead to LSE on designated sites. Significant effects are likely through habitat loss/damage/fragmentation; changes in air quality; changes in hydrology; disturbance to associated species through noise,

EEH Transport Strategy Principles (refer to Section 2 for details)	Possible Impacts
	visual and vibration emissions. ▪ Significant positive effects may also be realised through improved connectivity.
Ensuring the Heartland works for the UK by enabling the efficient movement of people and goods through the region and to/from international gateways	▪ This principle may require construction or improvement works, which could potentially lead to LSE on designated sites. Significant effects are likely through habitat loss/damage/fragmentation; changes in air quality; changes in hydrology; disturbance to associated species through noise, visual and vibration emissions. ▪ Significant positive effects may also be realised through improved connectivity.

4.5.2. Notwithstanding the requirement for further assessment, it is highly likely that within the regulation and permitting of the development of projects to implement the Transport Strategy, a range of environmental control measures will be required to ensure adverse impacts upon the environment are avoided or minimised. For example, the control of water abstraction and discharge of water is required via the Water Framework Directive, the consideration of impacts on designated sites is covered under the Habitats Regulations, Wildlife and Countryside Act 1981 (as amended), and national and location planning policy. These control measures will ensure that impacts associated with projects to implement the Transport Strategy are minimised. This will be determined at the next tier of assessment, screening or Appropriate Assessment stage, and it is likely that with the control measures in place, development that may result in significant adverse impacts on Natura 2000 or Ramsar sites would only be permitted in exceptional circumstances.

4.5.3. At this stage, is not possible to categorically demonstrate that the Transport Strategy will not have any impacts upon the Natura 2000 network or Ramsar sites.

5. CONCLUSION AND RECOMMENDATIONS

5.1.1. The Transport Strategy is to be published at a strategy level and will not give detail on potential projects or proposals for its implementation. As a result, each individual plan will be subject to an Appropriate Assessment and there will be the required level of scrutiny at this stage to protect the European sites. It will only be possible to undertake this level of assessment once specific projects are proposed and/or once enough detail is available at the plan level to enable a thorough and robust analysis to be carried out.

5.1.2. Therefore, given the regional nature of the Transport Strategy, it has not been possible to rule out likely significant effects. It will only be possible to undertake this level of assessment once specific projects are proposed to enable a thorough and robust analysis to be carried out. It is recommended that consultation with Natural England is undertaken on the results of this HRA and during the implementation of the Transport Strategy as and when specific projects are considered and developed.

5.1.3. An assessment of any likely significant in-combination effects will be made and full recommendations for mitigation will be provided within each project-level Appropriate Assessment. These will suggest measures to reduce the potential for any development to result in impacts upon the European sites.

5.1.4. Additionally, where possible over-arching mitigating measures should be incorporated within the Transport Strategy, for example:

- development will not be located within any European site so that no direct habitat loss will occur;
- wherever possible works will be avoided where there is a direct transmission pathway to European sites (such as a European site downstream of a new road);
- that buffer zones will be provided between construction/improvement works and European sites (the size and extent of which should be dependent upon the nature of impact and the sensitivity of receptors);
- there would be a general presumption against the permitting of construction/improvement works which generate particular adverse effects in proximity to European sites, which are sensitive to those effects – e.g. where particular adverse impacts on the water environment are identified;
- HRA will be necessary in accordance with part 6 of the Habitat Regulations at each tier of the strategy's development (from strategy through to scheme level) as part of the delivery of the HRA; and
- improved access to European sites will be closely monitored and managed to ensure the integrity of the sites is not compromised.

6. REFERENCES

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Appendix A

RELEVANT DESIGNATED SITE INFORMATION

Site Name	Corridors	Hydrological connectivity (via watercourses) between strategic corridor/s and sites (Y/N)	Site Size (Ha)	Citation at time of designation[1]
				• Anas Strepera 206 indiivduals representing 3.6% of the population in Great Britain (Count as at 1990) • Limosa limosa limosa 16 pairs representing 55.2% of the population in Great Britain (Count as at 1992) Over-winter: • Anas acuta 1435 individuals representing 5.2% of the population in Great Britain (5 year peak mean 1991/92 – 1995/96). • Anas clypeaa 318 individuals representing 3.2% of the population in Great Britain (5 year peak mean 1991/92 – 1995/96) • Anas crecca 2179 individuals representing 1.6% of the population in Great Britain (5 year peak mean 1991/92 – 1995/96). • Anas Penelope 8292 individuals representing 3% of the population in Great Britain (5 year peak mean 1991/92 – 1995/96). • Anas Strepera 25 pairs represent 2.5% of the population in Great Britain (5 year peak mean 1991/92 – 1995/96),
Ouse Washes SPA	1. London – Stevenage – Cambridge – Ely	Y	2493.49	This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive: Over-winter:

Site Name	Corridors	Hydrological connectivity (via watercourses) between strategic corridor/s and sites (Y/N)	Site Size (Ha)	Citation at time of designation[1]
				• Circus cyaneus - 12 individuals representing 1.6% of the Great Britain population (6 year mean, 1982 – 1987). • Cygnus columbianus bewickii – 4639 individuals representing 64.4% of the Great Britain population (5 year peak mean 1991/92 – 1995/96). • Cygnus Cygnus – 963 individuals representing 17.2% of the Great Britain population (5 year peak mean 1991/92 – 1995/96). • Philomachus pugnax – 137 individuals representing 19.6% of the Great Britain population (5 year peak mean 1991/92 – 1995/96) This site qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting populations of the following species: During the breeding season, the area regularly supports: • Anas clypeata (North-western/Central Europe) 15.5% of the population in Great Britain (count as at late 1980s-early 1990s); • Anas platyrhynchos -850 pairs (North-western Europe) 0.9% of the population in Great Britain (count, as at late 1980s-early 1990s); • Anas querquedula (Western Siberia/Europe/Western Africa) 93.3% of the population in Great Britain (count, as at

Site Name	Corridors	Hydrological connectivity (via watercourses) between strategic corridor/s and sites (Y/N)	Site Size (Ha)	Citation at time of designation[1]
				late 1980s-early 1990s); • Anas strepera (North-western Europe) 14.4% of the population in Great Britain No count period specified; • Limosa limosa limosa (Western Europe/W Africa) 89.7% of the population in Great Britain (count, as at late 1980s-early 1990s). Over winter the area regularly supports: • Anas acuta (North-western Europe) 2.9% of the population (5 year peak mean 1991/92-1995/96) • Anas clypeata (North-western/Central Europe) 1.7% of the population (5 year peak mean 1991/92-1995/96) • Anas crecca (North-western Europe) 0.8% of the population (5 year peak mean 1991/92-1995/96) • Anas penelope (Western Siberia/North-western/North-eastern Europe) 2.4% of the population (5 year peak mean 1991/92-1995/96) • Anas strepera (North-western Europe) 4.2% of the population in Great Britain (5 year peak mean 1991/92-1995/96) • Aythya ferina (North-western/North-eastern Europe) 7.2% of the population in Great Britain (5 year peak mean 1991/92-1995/96) • Aythya fuligula (North-western Europe) 1.6% of the population in Great Britain (5 year

Site Name	Corridors	Hydrological connectivity (via watercourses) between strategic corridor/s and sites (Y/N)	Site Size (Ha)	Citation at time of designation[1]
				peak mean 1991/92-1995/96) • Cygnus olor (Britain) 2.4% of the population in Great Britain (5 year peak mean 1991/92-1995/96) • Fulica atra (North-western Europe - wintering) 1.9% of the population in Great Britain (5 year peak mean 1991/92-1995/96 • Phalacrocorax carbo (North-western Europe) 2% of the population in Great Britain (5 year peak mean 1991/92-1995/96) This area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting internationally important assemblage of birds. Over winter the area regularly supports: 64428 waterfowl (5 year peak mean 1991/92-1995/96) Including: Phalacrocorax carbo , Cygnus columbianus bewickii , Cygnus cygnus , Anas penelope , Anas strepera , Anas crecca , Anas acuta , Anas clypeata , Aythya ferina , Aythya fuligula , Fulica atra , Philomachus pugnax
South West London Waterbodies SPA	1. (London) – Buckinghamshire – MK – Northampton	N	830.3	This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following species: Over winter: • Anas clypeata 853 individuals represents 2.1% of the population (5 year peak mean 1993/94 to 197/98) • Anas Strepera 710 individuals represent 2.4% of the population (5 year peak mean

Site Name	Corridors	Hydrological connectivity (via watercourses) between strategic corridor/s and sites (Y/N)	Site Size (Ha)	Citation at time of designation[1]
				1993/94 – 1997/98).
Upper Nene Valley Gravel Pits SPA	1. Luton – Bedford - Northamptonshire 2. (London) – Buckinghamshire – MK – Northampton 3. East West connections between M40 and A1 4. Peterborough – Northampton – Oxford 5. North Northamptonshire (Northampton - Wellingborough –- Huntingdon/Alconbury) 6. A508 Northampton - Milton Keynes 7. Northampton – Corby – Wellingborough	Y	1357.7	This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive: Over winter the area regularly supports: • Botaurus stellaris 2 individuals (Europe - breeding) 2% of the GB population 5-year peak mean 1999/2000 ? 2003/04 • Pluvialis apricaria 5790 individuals [North-western Europe - breeding] 2.3% of the GB population 5-year peak mean 1999/2000 ? 2003/04 • This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following species: Over winter the area regularly supports: • Anas strepera (North-western Europe) 2% of the population 5-year peak mean 1999/2000 - 2003/04 This site qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of internationally important assemblage of birds: Over winter the area regularly supports: 23821 waterfowl (5 year peak mean 1991/92-1995/96) Including: Podiceps cristatus , Phalacrocorax carbo , Botaurus stellaris , Anas penelope , Anas strepera , Anas platyrhynchos , Anas clypeata , Aythya ferina ,

Site Name	Corridors	Hydrological connectivity (via watercourses) between strategic corridor/s and sites (Y/N)	Site Size (Ha)	Citation at time of designation[1]
				Aythya fuligula , Fulica atra , Pluvialis apricaria [North-western Europe - breeding], Vanellus vanellus

Appendix B

IMPACT IDENTIFICATION FOR RELEVANT NATURA 2000 AND RAMSAR SITES

Site Name: River Lambourn SAC

Distance from Potential Transport Development: No corridors are located within the 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
None identified			

Site Name: Rodborough Common SAC

Distance from Potential Transport Development: No corridor is located within the 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
None identified			

Site Name: Roydon Common and Dersingham Bog SAC

Distance from Potential Transport Development: No corridor is located within the 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
None identified			

Site Name: Salisbury Plain SAC

Distance from Potential Transport Development: No corridors were located within the 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
None identified			

Site Name: The Wash & North Norfolk Coast SAC

Distance from Potential Transport Development: No corridor is located within the 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Hydrological Change (water quality or quantity)	Corridors have hydrological connectivity to SAC. The SAC is at threat from human induced changes to hydraulic conditions and pollution to ground water. Change to water quality and/or flow as a result of development and / or improvements of transport infrastructure may alter dynamics of habitat/species composition. The SAC is noted to be at threat from inappropriate water levels. Changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may alter dynamics of habitat/species composition.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the SAC.	It is not possible to conclude that there will be no likely significant effects on the integrity of The Wash & North Norfolk Coast SAC as a result of EEH Transport Strategy.

Site Name: Thursley, Ash, Piribright & Chobham SAC

Distance from Potential Transport Development: No corridor is located within the 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
None identified			

Site Name: Wimbledon Common SAC

Distance from Potential Transport Development: No corridor is located within the 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	**Description of Impact / Potential Effect**	**Matters for Consideration in EEH Transport Strategy**	**Likelihood of Significant Effects**
None identified			

Site Name: Windsor Forest & Great Park SAC

Distance from Potential Transport Development: No corridors were located within the 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	**Description of Impact / Potential Effect**	**Matters for Consideration in EEH Transport Strategy**	**Likelihood of Significant Effects**
None identified			

Site Name: Wormley – Hoddesdonpark Woods SAC
Distance from Potential Transport Development: 2 corridors were located within the SAC, and a further 1 corridor is located within 2km ZoI, closest point 300m distant (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Recreational pressure and Human disturbance	The SAC is currently identified as being vulnerable to disturbance impacts. Increased visitor pressure through improved access has the potential to intensify this and potentially cause significant effects.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the SAC.	It is not possible to conclude that there will be no likely significant effects on the integrity of Wormley – Hoddesdonpark Woods SAC as a result of EEH Transport Strategy.
Air pollution	The North – South connections (A1 region), London – Stevenage – Cambridge – Ely is located within the SAC and Hemel Hempstead – Hatfield – Harlow there may be impacts through acidification and deposition as a result of increased road traffic and/or development of transport infrastructure. Air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.		
Habitat Loss / Damage / Fragmentation.	Due to the North – South connections (A1 region) and London – Stevenage – Cambidge - Ely corridor being located within the SAC there may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		

Site Name: Lee Valley RAMSAR
Distance from Potential Transport Development: 2 corridors were located within the RAMSAR (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Loss / disturbance / fragmentation of key species	The London – Stevenage – Cambridge -Ely corridor and Hemel Hempstead – Hatfield – Harlow is located within the Ramsar. There may direct impacts / disturbance of key species (birds, wetland plants / invertebrates) and therefore the function/integrity of Ramsar could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the RAMSAR.	It is not possible to conclude that there will be no likely significant effects on the integrity of Lee Valley RAMSAR as a result of EEH Transport Strategy.
Air pollution	The London – Stevenage – Cambridge - Ely and Hemel Hempstead – Hatfield – Harlow is located within the Ramsar and there may be impacts through acidification and deposition as a result of increased road traffic and/or development of transport infrastructure. Ramsar components (wetland habitats) may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.		
Habitat Loss / Damage / Fragmentation.	There may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		
Hydrological Change (water quality or quantity)	The corridors have hydrological connectivity to Lee Valley Ramsar. Habitats are also at threat from human induced changes in hydraulic conditions. Therefore, changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may potentially alter dynamics of habitat/species composition.		

Site Name: Nene Washes RAMSAR

Distance from Potential Transport Development: 2 corridors were located within the RAMSAR (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Loss / disturbance / fragmentation of key species	The North – South connections (A1 region) and London – Stevenage – Cambridge _Ely corridor is located within the Ramsar. There may direct impacts / disturbance of key species (birds) and therefore the function/integrity of Ramsar could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the RAMSAR.	It is not possible to conclude that there will be no likely significant effects on the integrity of Nene Washes RAMSAR as a result of EEH Transport Strategy.
Air pollution	The North – South connections (A1 region) and London – Stevenage – Cambridge - Ely corridor is located within the Ramsar and there may be impacts through acidification and deposition as a result of increased road traffic and/or development of transport infrastructure. Ramsar components (wetland habitats) may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.		
Habitat Loss / Damage / Fragmentation.	There may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		
Hydrological Change (water quality or quantity)	The corridors have hydrological connectivity to Nene Washes Ramsar. Habitats are also at threat from human induced changes in hydraulic conditions. Therefore, changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may potentially alter dynamics of habitat/species composition.		

Site Name: Ouse Washes RAMSAR
Distance from Potential Transport Development: 1 corridor is located within the RAMSAR (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Hydrological Change (water quality or quantity)	The London – Stevenage – Cambridge - Ely corridor has hydrological connectivity to the RAMSAR. Therefore, changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may potentially alter dynamics of habitat/species composition.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the RAMSAR.	It is not possible to conclude that there will be no likely significant effects on the integrity of Ouse Washes RAMSAR as a result of EEH Transport Strategy.
Loss / disturbance / fragmentation of key species	The London – Stevenage – Cambridge - Ely corridor is located within the Ramsar. There may direct impacts / disturbance of key species (birds/plants/invertebrate) and therefore the function/integrity of Ramsar could be compromised.		
Air pollution	The London – Stevenage – Cambridge - Ely corridor is located within the Ramsar and there may be impacts through acidification and deposition as a result of increased road traffic and/or development of transport infrastructure. Ramsar components (wetland habitats) may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.		
Habitat Loss / Damage / Fragmentation.	There may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		

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Site Name: The South West London Waterbodies RAMSAR

Distance from Potential Transport Development: 1 corridor is located within 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Loss / disturbance / fragmentation of key species	The (London) – Buckinghamshire - MK – Northampton is located within the ZoI of the RAMSAR. There may direct impacts / disturbance of key species (Northern shoveler and Winter Gadwall) and therefore the function/integrity of RAMSAR could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the RAMSAR.	It is not possible to conclude that there will be no likely significant effects on the integrity of The South West Waterbodies RAMSAR as a result of EEH Transport Strategy.

Site Name: Upper Nene Valley Gravel Pits RAMSAR
Distance from Potential Transport Development: 7 corridors were located within the Ramsar (see Table 3.1, Appendix A).
The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Loss / disturbance / fragmentation of key species	The Luton – Bedford _ Northamptonshire, (London) – Buckinghamshire – MK – Northampton=, East West connections between M40 and A1), Peterborough - Northampton- Oxford, Northampton – Wellingborough – Huntindon/Alconbury , M11 - Luton, Northampton – Corby – Wellingborough is located within the Ramsar. There may direct impacts / disturbance of key species (birds, wetland plants / invertebrates) and therefore the function/integrity of Ramsar could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the Ramsar.	It is not possible to conclude that there will be no likely significant effects on the integrity of Upper Nene Valley Gravel Pits Ramsar as a result of EEH Transport Strategy.
Air pollution	The corridors were all located within the Ramsar and		

Site Name: Upper Nene Valley Gravel Pits RAMSAR Distance from Potential Transport Development: 7 corridors were located within the Ramsar (see Table 3.1, Appendix A). The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.			
Possible Impact	**Description of Impact / Potential Effect**	**Matters for Consideration in EEH Transport Strategy**	**Likelihood of Significant Effects**
	there may be impacts through acidification and deposition as a result of increased road traffic and/or development of transport infrastructure. Ramsar components (wetland habitats) may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.		
Habitat Loss / Damage / Fragmentation.	There may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		
Hydrological Change (water quality or quantity)	The corridors have hydrological connectivity to the Upper Nene Valley Gravel Pits Ramsar. Habitats are also at threat from human induced changes in hydraulic conditions. Therefore, changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may potentially alter dynamics of habitat/species composition.		
Recreational pressure and Human disturbance	The Ramsar is currently identified as vulnerable to disturbance. Increased visitor pressure through improved access has the potential to intensify this and cause significant effects.		

Site Name: Wicken Fen RAMSAR

Distance from Potential Transport Development: 1 corridor is located within the within the RAMSAR (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Hydrological Change (water quality or quantity)	Ramsar components include one of the most outstanding remnants of East Anglian peat fens and scare wetland plant species. Therefore, changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may potentially alter dynamics of habitat/species composition.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the Ramsar.	It is not possible to conclude that there will be no likely significant effects on the integrity of Wicken Fen Ramsar as a result of EEH Transport Strategy.
Air pollution	The corridor was located within the Ramsar and there may be impacts through acidification and deposition as a result of increased road traffic and/or development of transport infrastructure. Ramsar components (wetland habitats) may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.		
Habitat Loss / Damage / Fragmentation.	There may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		
Loss / disturbance / fragmentation of key species	The London – Stevenage – Cambridge - Ely corridor is located within the Ramsar. There may direct impacts / disturbance of key species (wetland plants) and therefore the function/integrity of Ramsar could be compromised.		

Site Name: Woodwalton Fen RAMSAR

Distance from Potential Transport Development: 1 corridor is located within RAMSAR and a further 1 corridor within 2km ZoI, closest point 1.3km distant (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Disturbance / fragmentation of key species	There may disturbance of key species (wetland plants/invertebrates) and therefore the function/integrity of Ramsar could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the Ramsar.	It is not possible to conclude that there will be no likely significant effects on the integrity of Woodwalton Fen Ramsar as a result of EEH Transport Strategy.
Air pollution	The North – South connections (A1 region) was located within the Ramsar and there may be impacts through acidification and deposition as a result of increased road traffic and/or development of transport infrastructure. Ramsar components (wetland habitats) may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.		
Loss / disturbance / fragmentation of key species	The North – South connections (A1 region) is located within the Ramsar. There may direct impacts / disturbance of key species (wetland plants/invertebrates) and therefore the function/integrity of Ramsar could be compromised.		
Hydrological Change (water quality or quantity)	Ramsar components include a fen which is one of the remaining parts of east Anglia which has not been drained and scare wetland plant/invertebrate species. Therefore, changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may potentially alter dynamics of habitat/species composition.		

Site Name: Breckland SPA

Distance from Potential Transport Development: 1 corridor is located within the 2km ZoI (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Loss / disturbance / fragmentation of key species	The London – Stevenage – Cambridge - Ely corridor is located within 2km ZoI of the SPA. There may direct impacts / disturbance of key species (birds) and therefore the function/integrity of SPA could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the SPA.	It is not possible to conclude that there will be no likely significant effects on the integrity of Breckland SPA as a result of EEH Transport Strategy.
Habitat Loss / Damage / Fragmentation.	Due to the close proximity between the A10 corridor and SPA there may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		
Recreational pressure and Human disturbance	The SPA is currently identified as vulnerable to disturbance. Increased visitor pressure through improved access has the potential to intensify this and cause significant effects.		

Site Name: Lee Valley SPA

Distance from Potential Transport Development: 2 corridors were located within the SPA (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Disturbance / fragmentation of key species	London – Stevenage – Cambridge - Ely corridor and Hemel Hempstead – Hatfield -Harlow is located within the SPA. There may disturbance of key species (birds) and therefore the function/integrity of SPA could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH	It is not possible to conclude that there will be no likely significant effects on the integrity of Lee Valley SPA as a

Site Name: Lee Valley SPA

Distance from Potential Transport Development: 2 corridors were located within the SPA (see Table 3.1, Appendix A).

The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Air pollution	There may be impacts through acidification and deposition as a result of increased road traffic and/or development / improvements of transport infrastructure. The SPA may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.	would require careful consideration of potential effects on the SPA.	result of EEH Transport Strategy.
Hydrological Change (water quality or quantity)	The corridor has hydrological connectivity to the SPA. Habitats are also at threat from human induced changes in hydraulic conditions. The SPA is noted to be at threat from pollution to groundwater and hydrological changes. Therefore, changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may potentially alter dynamics of habitat/species composition.		
Habitat Loss / Damage / Fragmentation.	Due to the close proximity between the London – Stevenage – Cambridge - Ely corridor, Hemel Hempstead – Hatfield – Harlow and SPA there may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		
Recreational pressure and Human disturbance	The SPA is currently identified as vulnerable to disturbance. Increased visitor pressure through improved access has the potential to intensify this and cause significant effects.		

Site Name: Nene Washes SPA Distance from Potential Transport Development: 2 corridors are located within the SPA (see Table 3.1, Appendix A). The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.			
Possible Impact	**Description of Impact / Potential Effect**	**Matters for Consideration in EEH Transport Strategy**	**Likelihood of Significant Effects**
Disturbance / fragmentation of key species	The North – South connections (A1 region) , Peterborough – Northampton – Oxford is located within the SPA. The dispersal of key species (birds) may be impacted and therefore the function/integrity of SPA could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the SPA.	It is not possible to conclude that there will be no likely significant effects on the integrity of Nene Washes SPA as a result of EEH Transport Strategy.
Hydrological Change (water quality or quantity)	The corridor has hydrological connectivity to the SPA. Habitats are also at threat from human induced changes in hydraulic conditions. The SPA is noted to be at threat from pollution to groundwater and hydrological changes. Therefore, changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may alter dynamics of habitat/species composition.		
Air pollution	There may be impacts through acidification and deposition as a result of increased road traffic and/or development / improvements of transport infrastructure. The SPA may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.		
Habitat Loss / Damage / Fragmentation.	Due to the close proximity between the North – South connections (A1 region) , , Peterborough – Northampton - Oxford and SPA there may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		

Site Name: Ouse Washes SPA Distance from Potential Transport Development: 1 corridor are located within the SPA (see Table 3.1, Appendix A). The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.			
Possible Impact	**Description of Impact / Potential Effect**	**Matters for Consideration in EEH Transport Strategy**	**Likelihood of Significant Effects**
Disturbance / fragmentation of key species	The London – Stevenage – Cambridge - Ely corridor is located within the SPA. The dispersal of key species (birds) may be impacted and therefore the function/integrity of SPA could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the SPA.	It is not possible to conclude that there will be no likely significant effects on the integrity of Ouse Washes SPA as a result of EEH Transport Strategy.
Hydrological Change (water quality or quantity)	The corridor has hydrological connectivity to the SPA. Habitats are also at threat from human induced changes in hydraulic conditions. The SPA is noted to be at threat from pollution to groundwater and hydrological changes. Therefore, changes to water quality and/or flow as a result of development and / or improvements of transport infrastructure may alter dynamics of habitat/species composition.		
Air pollution	There may be impacts through acidification and deposition as a result of increased road traffic and/or development / improvements of transport infrastructure. The SPA may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.		
Habitat Loss / Damage / Fragmentation.	Due to the close proximity between the London – Stevenage – Cambridge - Ely corridor and SPA there may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		

Site Name: South West London Waterbodies SPA
Distance from Potential Transport Development: 1 corridor is located within the 2km ZoI, closest point 1.2km distant (see Table 3.1, Appendix A).
The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Loss / disturbance / fragmentation of key species	The (London) – Buckinghamshire – MK – Northampton is located within the ZoI. Key species (birds) may be directly / indirectly impacted and therefore the function/integrity of Ramsar could be compromised.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the SPA.	It is not possible to conclude that there will be no likely significant effects on the integrity of South West London Waterbodies SPA as a result of EEH Transport Strategy.
Recreational pressure and Human disturbance	The SPA is currently identified as vulnerable to disturbance. Increased visitor pressure through improved access has the potential to intensify this and cause significant effects.		

Site Name: Upper Nene Valley Gravel Pits SPA
Distance from Potential Transport Development: 7corridors were located within the SAC. No other corridors are located within 2km (see Table 3.1, Appendix A).
The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.

Possible Impact	Description of Impact / Potential Effect	Matters for Consideration in EEH Transport Strategy	Likelihood of Significant Effects
Air pollution	The Luton – Bedford - Northamptonshire corridor, (London) – Buckinghamshire – MK – Northampton, East West connections between M40 and A1), Peterborough – Northampton – Oxford, Northampton – Wellingborough – Huntingdon/Alconbury, M11 - Luton, Northampton – Corby – Wellingborough is located within the SPA. There may be impacts through acidification and deposition as a result of increased road traffic and/or development / improvements of transport infrastructure. The SPA may be vulnerable to air quality impacts within 200m of roads, resulting in habitat deterioration or change in habitat dynamics and species composition.	Any project brought forward under EEH Transport Strategy, which may involve construction/improvements to infrastructure in order to meet goals and objectives of the EEH would require careful consideration of potential effects on the SPA.	It is not possible to conclude that there will be no likely significant effects on the integrity of Upper Nene Valley Gravel Pits SPA as a result of EEH Transport Strategy.

Site Name: Upper Nene Valley Gravel Pits SPA Distance from Potential Transport Development: 7corridors were located within the SAC. No other corridors are located within 2km (see Table 3.1, Appendix A). The EEH goals and objectives to support economic prosperity and improve transport safety, quality of life and access for all may require construction / adaption / improvement of transport links within the ZoI.			
Possible Impact	**Description of Impact / Potential Effect**	**Matters for Consideration in EEH Transport Strategy**	**Likelihood of Significant Effects**
Habitat Loss / Damage / Fragmentation.	Due to the corridors being located within the SPA there may be direct impacts through land take in relation to development and / or improvements of transport infrastructure.		
Disturbance / fragmentation of key species	The corridors are all located within the SPA. Key species (birds) may be directly disturbed or dispersal routes impacted and therefore the function/integrity of Ramsar could be compromised.		
Hydrological Change (water quality or quantity)	There is hydrological connectivity between the SPA and corridors. Change to water quality and/or flow as a result of development and / or improvements of transport infrastructure may alter dynamics of habitat/species composition.		
Recreational pressure and Human disturbance	The SPA is currently identified as vulnerable to disturbance. Increased visitor pressure through improved access has the potential to intensify this and cause significant effects.		

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