# SCOPING CONSULTATION RESPONSES REPORT

APPRAISAL OF SUSTAINABILITY:
DRAFT AIRPORTS NATIONAL POLICY
STATEMENT

FEBRUARY 2017





## SCOPING CONSULTATION RESPONSES REPORT

**Department for Transport** 

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### 1 AOS SCOPING CONSULTATION

### 1.1 INTRODUCTION

1.1.1 The Environmental Assessment of Plans and Programmes Regulations 2004 (SEA Regulations) state:

When deciding on the scope and level of detail of the information that must be included in the report, the responsible authority shall consult the consultation bodies (Regulation 12 (5)).

1.1.2 This Report documents the responses to Scoping for the Appraisal of Sustainability National Policy Statement under the SEA Regulations.

#### 1.2 SCOPING

- 1.2.1 The Airports National Policy Statement (NPS) sets out:
  - → The Government's policy on the need for new capacity; and
  - → The Government's preferred scheme to deliver this.
- 1.2.2 It provides planning guidance for the promoter of the airport nationally significant infrastructure project (NSIP), and the basis for the examination by the Examining Authority and decisions by the Secretary of State.
- 1.2.3 Before designating a NPS the Secretary of State must first appraise the sustainability of the policy set out in the statement. This is called an Appraisal of Sustainability (AoS). The appraisal must accord with the Strategic Environmental Assessment Regulations ("SEA Regulations"), which form part of the European Union's SEA Directive (2001/42/EC).
- 1.2.4 The first stage of the AoS process known as 'scoping' sets the context and objectives, describing the baseline and deciding on scope. A Scoping Report was produced for the Airports NPS and issued to the statutory 'consultation bodies', Natural England, Historic Environment and the Environment Agency in March 2016. The Scoping consultation was undertaken 09/03/16 18/04/16 with a workshop held on 23<sup>rd</sup> March.
- 1.2.5 The remainder of this report sets out responses to the consultation:
  - In the scoping workshop; and
  - → Written responses from the consultation bodies (copies are provided in the AoS Report, Appendix C).
- 1.2.6 For each comment made in response the report sets out how these were addressed in the AoS or reasons for not taking the response into account.

Table 1-1: Summary of comments from the Scoping Consultation Workshop 23/03/2016 setting out the implications for consideration within the AoS

STAKEHOLDER	FINAL SCOPING REPORT SECTION(S)	STAKEHOLDER COMMENTS	HOW COMMENT HAS BEEN ADDRESSED WITHIN THE AOS OR REASON FOR NOT ADDRESSING COMMENT.
Historic England	Reports wide	Asked if peoples 'happiness' has been considered in relation to cultural heritage, as some importance is giving to it within the NPPF. This is a very important link with communities. For example, someone's ability to enjoy spending time at a Heritage asset such as a church.	The interaction between individual heritage assets and people's happiness will not be assessed within the AoS. It would be difficult to establish this without further detailed assessment and surveys. This level of assessment would be more appropriate to undertake in support of the DCO Application in conjunction with the setting assessment.  A generic consideration of people's relationship with heritage has been included in the Quality of Life Assessment. Interaction have been identified within Table 11.1 of the AoS report, which states:  'Heritage assets have a cultural value. For example, many designated assets are used for leisure and recreation, such as Kew Gardens World Heritage Site. Heritage assets also contribute to a sense of place'.  The assessment of significance should include a setting assessment following Historic England guidance¹. This states that the importance of setting to the significance of the heritage assets depends on a wide range of physical elements within, as well as perceptual and associational attributes pertaining to, the heritage asset's surroundings. General considerations include cumulative change; change over time; appreciating setting; buried assets and

<sup>&</sup>lt;sup>1</sup> Historic England, 2015. *The Setting of Heritage Assets, Historic Environment GPA*:3. [online] Accessed 04/07/2016.

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			setting; designated settings; setting and urban design and economical and social viability.
Historic England	Reports wide, particularly Appendix B	Asked if Historic England's good practice advice guidance has been used? Historic England would expect this to be considered. This is national level important guidance, and if it is not included within the scoping, it may be missed and not including within the main AoS report. Historic England suggests a statement should be including stating that national level guidance is available from Historic England, and other bodies that can provide guidance.	<ul> <li>The PPP review does not include guidance. At the scoping stage the PPP review's function is to identify legislative objectives to incorporate within the appraisal framework. However, Historic England's Guidance has been referenced, where relevant, within AoS Appendix A 11 Historic Environment, Sections:</li> <li>11.3.8: 'The assessment was based on the following guidance:         <ul> <li>Department for Communities and Local Government, 2012. The National Planning Policy Framework²;</li> <li>Department for Communities and Local Government, rev 2014. The National Planning Policy Framework Guidance³</li> <li>Historic England, 2008. Conservation Principles, Policies and Guidance⁴;</li> <li>Historic England, 2011. The Setting of Heritage Assets⁵. This has been replaced with Historic England 2015, The Setting of Heritage Assets, Historic Environment GPA:3⁶; and,</li> <li>The Highways Agency, 2007. Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3 Part 2 Cultural Heritage (HA 208/07)⁻"</li> </ul> </li> </ul>

<sup>&</sup>lt;sup>2</sup> Department for Communities and Local Government, 2012. *National Planning Policy Framework*. [online] Accessed 23/12/2015.

<sup>&</sup>lt;sup>3</sup> Department for Communities and Local Government, rev 2014. The National Planning Policy Framework Guidance. [online] Accessed 26/01/2017.

<sup>&</sup>lt;sup>4</sup> Historic England, 2008. *Conservation Principles, Policies and Guidance*. [online] Accessed 23/12/2015.

<sup>&</sup>lt;sup>5</sup> Historic England, 2011. *The Setting of Heritage Assets*. [online] Accessed 26/01/2017.

<sup>&</sup>lt;sup>6</sup> Historic England 2015. *The Setting of Heritage Assets, Historic Environment GPA:3*. [online] Accessed 15/06/2016.

<sup>7</sup> Design Manual for Roads and Bridges, 2010. *Volume 11, Section 3 Part 2 Cultural Heritage (HA 208/07)*. [online] Accessed 23/12/2015.

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			11.8.1: 'In accordance with the NPPF and Historic England GPA:38 the extent of an assets setting is not fixed and may change as the asset and its surroundings evolve'
			11.10.1: 'Historic England, 2015, Managing Significance in Decision- Taking in the Historic Environment GPA:29 offers the following guidance'.
			11.10.10: 'The assessment of significance should include a setting assessment following Historic England guidance <sup>10</sup> '.
Historic England	Reports wide, particularly Appendix B	Noted that the London Local Plan is different than other Local plans. The London Plans (and Mayor's London Plan) should be looked at, particularly plans for opportunity areas such as Heathrow.	The London Plan has been included in the AoS Report, Table 6.5. (Cumulative effects), and within topic Appendixes where relevant, eg Economy, Section 3.9.33: 'Planned infrastructure includes major road and rail projects to support the National Networks National Policy Statement and the London Plan, and highways improvements which are planned by local authorities as part of their Local Development'
Environment Agency	Reports wide	Asked if a 'do nothing' or 'do minimum' option has been considered.	The AoS Report states why 'do minimum' options were not taken forward by the Airports Commission in their review. It states, 'A 'do nothing' or 'do minimum' option was not considered as this does not fit with the aim of increasing airport capacity, provided by the Airports Commission'.
			This reason for not considering a 'do nothing' or 'do minimum' option is further iterated in Appendix B, which presents the AC's option sifting process.

B Historic England 2015. The Setting of Heritage Assets, Historic Environment GPA:3. [online] Accessed 15/06/2016.
 Historic England, 2015. Managing Significance in Decision-Taking in the Historic Environment GPA:2. [online] Accessed 15/06/2016.
 Historic England, 2015. The Setting of Heritage Assets, Historic Environment GPA:3. [online] Accessed 15/06/2016.

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Environment Agency	Scoping Report, Environmental, Social and Economic Baseline and Issues Table 4.1 Key Sustainability Issues Identified for the AoS.	Identified that it only specifically states woodland as a habitat. Should wetlands and water bodies be included.	The Table 4.1, biodiversity, within the AoS Report has been updated to state:  'Effects on ancient woodland, veteran trees, hedgerows and other habitats such as watercourses and wetlands'.
Environment Agency	Reports wide	Stated that the way that Economy is presented could be seen to give it more weight. The wording for Economy is stronger than that for other chapters.	The wording surrounding Economy has been amended.
Historic England		Asked how general net gain for historic assets be ensured? For example, how would offsetting for a church under flight a path be considered? How do you consider the impact of noise to the tranquillity of a setting? The detail would need to be provided at the design stage, but the framework for this at the strategic/ NPS level.	Appendix A 11 (Section 11.10.11) and Table 7.3 of the AoS Report states that HE would seek to encourage opportunities to enhance the significance of heritage assets through the design, planning and implementation of a proposal. Individual proposals would need to be covered in the DCO stage as stated. This would include a full methodology for the setting assessment. Noise impacts should be considered in more detail at that stage.
Historic England	Reports wide	Expressed concern that enhancement might be seen as a trade-off of one asset for another, which could be seen in bad light.	The trade-off of one asset for another has not been stated within the AoS.  The AoS Report does state that 'In addition to mitigation, opportunities for environmental enhancement improvement of current environmental conditions and features should be sought' (Section 3.3.24) and states specifically in relation to historic

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			environment 'Potential to conserve and enhance the significance of heritage assetss' (Table 4.1).
			Table 4.2, Historic environment key issues have been reworded to state - Potential to conserve and enhance the significance of heritage assets.
			Table 7.3 of the AoS Report states that HE would seek to encourage opportunities to enhance the significance of heritage assets through the design, planning and implementation of a proposal. Individual proposals would need to be covered in the design stage as stated.

Table 1-2: Statutory Environmental Bodies consultation formal written response (Feedback Form) and their implications for the AoS

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Historic England		It is not clear why the NPPF has been split into topic areas. When the Framework published was promoted as national policy it was advised to be read in its totality, due to the inherent linkages between the different topic areas. So we would suggest that the whole of NPPF needs to be considered, to reflect the documents characteristics and to ensure the NPS reflects effectively the Framework's purpose of delivering sustainable development which achieves economic, social and environmental gains.	

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Historic England	Appendix A	No reference appears to have been made to the National Planning Policy Guidance (NPPG), which is a key national document that supports the interpretation of the NPPF. This should be reviewed, in particular with regards to the historic environment.	The PPP review does not include guidance. At the scoping stage the PPP review's function is to identify legislative objectives to incorporate within the appraisal framework.  NPPF Planning Practice Guidance has been identified as guidance used in the assessment in Appendix A 11, Historic Environment, Section 11.3.8. This was reiterated in Section 11.5.2, stating: 'The assessment of value was based on professional judgement informed by consideration of the heritage values identified in the NPPF and Guidance, and the criteria for the assessment of value provided in HA 208/07'.  The heritage values as set out in NPPF Guidance are as shown in the Appendix A 11, Table 11.5
Historic England	Appendix A	Historic England have also published to support the interpretation of national policy a series of Good Practice Advice Notes (GPAs), which should be reviewed as part of the AoS process. This includes Managing Significance in Decision Taking in the Historic Environment (GPA2), and Setting of Heritage Assets (GPA3). There are other PPPs that could be reviewed which are relevant to the management of the historic environment, but are more locally specific. This includes the Kew World Heritage Site Management Plan, and the other management plans related to	The PPP review does not include guidance. At the scoping stage the PPP review's function is to identify legislative objectives to incorporate within the appraisal framework. However, Historic England's Guidance has been referenced, where relevant, within AoS Appendix A 11 Historic Environment, Section:  11.3.8: 'The assessment was based on the following guidance:  Department for Communities and Local Government, 2012. The

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		affected heritage assets such as conservation	National Planning Policy Framework <sup>11</sup> ;
		areas.	→ Department for Communities and Local Government, rev 2014. The National Planning Policy Framework Guidance <sup>12</sup>
			→ Historic England, 2008. Conservation Principles, Policies and Guidance <sup>13</sup> ;
			→ Historic England, 2011, The Setting of Heritage Assets <sup>14</sup> . This has been replaced with Historic England 2015, The Setting of Heritage Assets, Historic Environment GPA:3 <sup>15</sup> ; and,
			→ Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3 Part 2 Cultural Heritage (HA 208/07) <sup>16</sup>
			11.6.6: 'Detailed studies based on guidance provided in 'The Setting of Heritage Assets' and 'Seeing History in the View' will be undertaken at the Environmental Impact Assessment (EIA) stage to understand the wider historic landscape characteristics and visual significance'.
			11.8.1: 'The 2km study area applied here will be used as guidance only for any future assessment and in particular the assessment of setting. In accordance with the NPPF and Historic England GPA:3

Department for Communities and Local Government, 2012. National Planning Policy Framework. [online] Accessed 23/12/2015.
 Department for Communities and Local Government, rev 2014. The National Planning Policy Framework Guidance. [online] Accessed 26/01/2017.
 Historic England, 2008. Conservation Principles, Policies and Guidance. [online] Accessed 23/12/2015.

Historic England, 2011, The Setting of Heritage Assets. [online] Accessed 26/01/2017.
 Historic England, 2015. The Setting of Heritage Assets, Historic Environment GPA:3. [online] Accessed 15/06/2016.
 Design Manual for Roads and Bridges, 2010. Volume 11, Section 3 Part 2 Cultural Heritage (HA 208/07). [online] Accessed 23/12/2015.

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		the extent of an asset's setting is not fixed and may change as the asset and its surroundings evolve'.  11.8.5. 'Detailed assessment of the shortlisted schemes on the significance of heritage assets should be undertaken at the EIA stage following guidance set out in 'The Setting of Heritage Assets' and 'Aviation Noise Metric'.  11.10.1: 'Historic England, 2015, Managing Significance in Decision-Taking in the Historic Environment GPA:2 <sup>17</sup> offers the following guidance'.  11.10.2: 'At EIA level assessment of the significance of the historic environment will need to be undertaken so the cultural heritage significance of the assets and the contribution of their setting can be determined prior to a mitigation strategy being applied at project level. This would include direct effects from construction, traffic, noise and visual intrusion in addition to the application of these effects from surface access and flightpaths remote from the scheme. This should follow guidance set out in 'The Setting of Heritage Assets' and 'Aviation Noise Metric'.  11.10.10: 'The assessment of significance should include a setting assessment following Historic England guidance <sup>18</sup> '.

Historic England, 2015. Managing Significance in Decision-Taking in the Historic Environment GPA:2.[online] Accessed 15/06/2016.
 Historic England 2015. The Setting of Heritage Assets, Historic Environment GPA:3. [online] Accessed 15/06/2016.

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			Both Kew WHS and conservation areas have been considered throughout the Historic Environment Appendix. Their respective management plans have not been included as Appendix A to the Scoping Report is a legislative review.
Historic England	Appendix A	Some of the PPPs appear to be listed under the wrong geographical level, with the NPPF for the historic environment being classed as 'international' when it is national policy.	This has been corrected and has not been carried forward into the AoS.  Site Management Plans have not been reviewed. These management plans would be anticipated to be considered at EIA stage, particularly in regards to design and enhancement mitigation.
Historic England	Scoping report, Review of Policies, plans and Programmes, 3.2.2 – Environmental PPPs	In relation to the identification of the relevant PPPs and their interpretation as issues we would suggest that following changes to the historic environment and landscape references so that they reflect more appropriately national policy and other PPPs identified in Appendix A.  3.2.2 Environmental PPPs Conserving and enhancing significance of heritage assets, including and the archaeological heritage and wider historic environment.  Promoting the protection and improvement of landscape and townscape character and quality	Text has been changed in Section 4.3.4, Environmental PPPS, AoS Report.

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Historic England	Appendix B, section 1.1 Introduction, paragraph 1.1.2	We note that the baseline year is 2014. We accept that a cut-off point needs to be found when gathering evidence, but we would seek an assurance that as the NPS is drafted, and used as a basis for decisions, that the latest up to date information is used where appropriate or available. For example the National Heritage List for England (NHLE), which captures nationally designated heritage assets, is not a static record, but is a constantly updated record of listings. It is therefore important to ensure that the latest information is used so that proposals can be judged against an accurate record of designated heritage assets.	This issue has been identified in Section 4.2.2 of the AoS Report, which states: 'The 2014 baseline has been supplemented in some cases by additional information where this would support the appraisal framework or would significantly affect the outcome of the appraisal'.
Historic England	Appendix B, 9 Landscape	In the context of landscape, we would draw your attention to the availability of tools such as historic landscape, urban characterisation, and visual analysis which can help identify the heritage issues found in the landscape and townscape, and provide approaches to resolving potential impacts. In particular Historic England have prepared advice on these important issues which should be used as part of the appraisals process -	Historic Landscape Characterisation has been noted within Appendix A 11 Historic Environment, Section 11.10.9.  The link provided has been referenced.  Historic England 2015, The Setting of Heritage Assets, Historic Environment GPA:3 has been used within Appendix A 11 Historic Environment.

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		<ul> <li>→ <a href="https://historicengland.org.uk/research/app-roaches/research-methods/characterisation-2">https://historicengland.org.uk/advice/planning/setting-and-views</a></li> </ul>	
Historic England	Reports wide and specifically Appendix B, section 10 – Historic Environment	To ensure consistency, it is important to ensure key issues identified in Appendix B, are compatible with the key issues identified from Appendix A and as expressed in the Scoping Report (Section 5) Proposed AoS Framework. With this in mind we would suggest that the key issue highlighted in the summary 'box' should read: Effects on nationally or locally designated landscapes, townscapes and waterscapes characters, and their settings.	Table 4.2 within AoS Report, Key issues from policy review and baseline column, Historic Environment row, states:  'Effects on nationally or locally designated landscapes, townscapes or waterscapes from new development'.  The landscape topic has not assessed 'setting' separately at this stage as effects on setting are incorporated into the landscape assessment (eg through effects on views, indirect effects on designated sites).
Historic England	Appendix B, 10 Historic Environment	We would seek to ensure all of the foot notes are up to date and relevant to the baseline evidence for the historic environment. For example the Heritage Counts latest edition was released in 2015.	This issue has been identified in Section 4.2.2 of the AoS Report, which states: 'The 2014 baseline has been supplemented in some cases by additional information where this would support the appraisal framework or would significantly affect the outcome of the appraisal'.
Historic England	Appendix B, 10 Historic Environment, Section 10.1	It is important that the baseline sets out clearly and recognises the importance of all heritage assets including those that are not designated. The details at present are limited	Non-designated assets have been discussed throughout Appendix A 11 Historic Environment in relation to numbers affected. It is noted however that the non-designated heritage assets level of importance within a local/neighbourhood, county/regional or national context

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	National baseline & issues	with a focus on the number of designated heritage assets. In addition at the national level a reference is made to 2002 figures as a benchmark of change. It is not clear why this date has been chosen and what value it provides to the process.	would be anticipated to be determined as part of a more detailed appraisal as part of an EIA and that no specific individual assessment of non-designated assets has been undertaken at the strategic level.  Baseline has been updated as above.
Historic England	Appendix B, 10 Historic Environment,1 0.1 National baseline & issues	to have an understanding of the date of designation and whether the details provided that help inform their significance is up to date. For example many of the listing descriptions for Listed Buildings (LBs) may be quite old and brief, so their value of defining the significance could be limited and in need	Within the AoS Report, Table 7.3 - Mitigation for significant effects, it is noted within the Historic Environment row that:  'Should the impacts of the scheme be physical then preservation by record should be achieved. This is applicable to both buildings and structures and archaeological remains. At this stage the HARR and listed buildings designation should be updated.  This is also stated within the Appendix A 11, in Sections 11.7.2, 11.7.3 and 11.7.4. The NPPF statement on this issue is also been included in Section 11.10.5.
Historic England	Appendix B, 10 Historic Environment, Section 10 Historic Environment	For assets not designated, the details are still vague and do not provide a sense of the national picture. For example heritage assets that are not designated could include locally listed buildings, or areas of special character as defined by the local authority.	Non-designated assets have been added to the baseline and discussed throughout Appendix A 11 Historic Environment. It is noted however that the non-designated heritage assets level of importance within a local/neighbourhood, county/regional or national context would be anticipated to be determined as part of a more detailed appraisal as part of an EIA and that no specific individual assessment of non-designated assets has been undertaken at the strategic stage.

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		In addition, and as a link to the 'landscape' topic, Historic landscape character have been mapped across England. These provide details on the overall landscape character of places, including nationally designated landscape areas such as Areas of Outstanding Natural Beauty. Features such as ancient woodlands and commons should also be considered undesignated heritage assets in their own right, due to their potential heritage interest.	Historic landscapes have been considered as part of designated landscape and landscape character within Appendix A 12 Landscape. Although some historic assets are described in this Appendix, it is not a comprehensive description of the significant heritage assets and their settings that contribute to the views and historic characteristics of the wider landscape/townscape. As stated in Section 12.6.5 of Appendix A 12 Landscape, 'detailed studies based on guidance provided in 'The Setting of Heritage Assets' and 'Seeing History in the View' are necessary at the EIA stage to understand the wider historic landscape characteristics and visual significance'.
Historic England	Appendix B, Sections 10 Historic Environment	In terms of archaeology it is important to recognise NPPF's position (paragraph 139), where it states that 'non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets'. This should be reflected in the baseline information.	Non-designated assets have been discussed throughout Appendix A 11 Historic Environment. It is noted however that the non-designated heritage assets level of importance within a local/neighbourhood, county/regional or national context would be anticipated to be determined as part of a more detailed appraisal as part of an EIA and that no specific individual assessment of non-designated assets has been undertaken at the strategic stage.  Although there has been a search of the HER, this does not specify the significance of the assets. Significant is anticipated to be determined at EIA level.

Historic England, 2015. The Setting of Heritage Assets. [online] Accessed 26/01/2017.
 Historic England, 2015. Seeing History in the View. [online] Accessed 05/05/2016.

S		FINAL SCOPING REPORT SECTION(S)	STAKEHOLDER COMMENTS	HOW COMMENT HAS BEEN ADDRESSED WITHIN THE AOS OR REASON FOR NOT ADDRESSING COMMENT.
	istoric ngland	Appendix B, 10.1 National baseline & issues	process an assessment of non-designated assets should be undertaken using the following sift approach:  Buildings, and Areas – the premise for identifying these types of non-designated assets is the HERs and other local authority records/documents (e.g. Local Plan, SPDs, Article 4's and decision making committee reports) where buildings and areas of local importance have been recognised. This could include locally listed buildings, areas of special character, and features of archaeological historic interest. Where the options would have a direct impact (e.g. works) then the significance of these assets and their setting should be fully assessed. Where there is no physical impact there can still be sensory harm (e.g. visual, noise related) from development within the setting of an asset.  Archaeology – the premise for identifying both above and below ground potential archaeology is through a process of research and review, of existing archaeological studies, HERs and where available Archaeological Priority Area details. This research as part of the appraisal process should help identify potential sensitive areas where archaeological	At the strategic level, the assessment has been limited to the HER. Further studies would be required at EIA level to assess the significance of the historic environment prior to a mitigation strategy being applied at project level (identified in Appendix A 11, Seection 11.10.2). The AoS Report further states in Section 7.4.114 that: 'The assessment acknowledges that the level of harm to the significance of the heritage assets and their settings must be considered. In order to do this it is proposed that individual assessments of significance are undertaken at EIA level'.  The generic approach to mitigation of non-designated assets is set out in Appendix A 11 and includes 'a process of research through archaeological studies and HERs to identify potential sensitive areas and/or known archaeological assets and allow a discussion of their significance' (Section 11.10.10).  Mitigation of assets includes providing detail of the types of asset and categorising the importance of each asset to be affected (local/neighbourhood, county/regional, national). Also see 11.8.6 which states:  'An assessment of the significance of individual heritage assets has not been undertaken at strategic level but would be undertaken to support any application for Development Consent. As described above for the NPPF this is likely to be in line with best practice. It would comprise an assessment of the significance of any heritage assets affected (including any contribution made by their setting) together with the impact of the relevant scheme on that significance and the steps that have been taken to avoid/minimise any possible harm. It is recognised that more detail on development of a preferred scheme will be available at this time so that the impact of the scheme

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		as part of the next stage via the preferred option detailed field studies would need to be undertaken. It may be possible to identify potential sites of national importance at an early stage but field evaluation may be necessary to provide further clarity provided on the potential status of the archaeological interest.  Where the potential archaeological interest is within the footprint of the proposals (whether above or below ground) for all options then more detailed desk assessment and field evaluation should be undertaken in line with the above.  However where the archaeological interest is below ground and not directly affected by potential works (outside the footprint), then at this stage it is a matter of recording in broad terms the potential sensitive areas.  For potential archaeological interest above ground, then the key issue to consider would be related to its setting.	and proposed mitigation is better understood. This will be able to inform site specific surveys and assessments'.  Section 11.8.7 states: 'At this stage it is possible to present the heritage values that would be considered in determining the significance as part of future evaluation, and taken together will allow a full understanding of each asset. The heritage values as set out in NPPF Guidance are as shown in the table below'.  Section 11.10.10 also states where potential archaeological interest is identified field evaluation may be necessary to determine significance. Reference will be made to the relevant Archaeological Research Framework objectives. Section 11.10.10 also recommends setting assessment.

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Historic England	Appendix B, 10.1 National baseline & issues	To ensure the baseline is sufficiently robust, we would also suggest that the condition of heritage assets is also recognised at the national level. Historic England maintains the Heritage at Risk Register (HAR) which identifies those sites/assets that are most at risk of being lost as a result of neglect, decay or inappropriate development. (Web link attached - https://historicengland.org.uk/advice/heritage-at-risk/). Use of the HAR as a contributor to benchmarking change and the impact of the NPS as part of the AoS would be encouraged.	The topic assessment consulted the HAR during December 2015 and the Historic Environment Record for all relevant counties, also in late 2015. (Section 11.3.5 Appendix A 11 Historic Environment). The HAR was consulted to ascertain how many of the designated heritage identified as being present within the study areas are entered onto the list.  Appendix A11, Section 11.10.14 recommends updating the HAR: 'The updating of the list entries for listed buildings and the HAR could also be undertaken at this level'.
Historic England	Appendix B, 10.1 National baseline & issues	A key issue which the baseline & issues section should consider is the potential of harm being caused by the NPS whether directly, indirectly, cumulatively or temporarily upon the significance of heritage assets and their setting. At the national level it is important to recognise the tests as set out by the NPPF, on assessing the degrees of harm, significance of heritage assets and justifications which may outweigh harm.	Table 4.2 refers to 'loss or harm to significance of designated heritage assets and their settings' under Historic Environment'.  Appendix A 11 (Section 11.2) references the NPPF in relation to harm of designated assets and Section 11.10 refers to the tests set out in the NPPF.
Historic England	Appendix B, 10.2 Future	This section should recognise the vulnerability of heritage assets to being harmed, but also the potential for developments to enhance their significance, through proactive	The 'Future Baseline and Issues' Section of Appendix A 11 Historic Environment identified the Historic environments vulnerability (Section 11.6.23).

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	baseline and issues	development management that seeks to deliver sustainable change in line with national policy.	Appendix A 11 sets out 'Possibilities for maximising the enhancement of heritage assets should be explored at project design level' (Section 11.10.11).  Table 7.3 of the AoS Report a hierarchy of mitigation should be applied to 'encourage opportunities to enhance the significance of heritage assets through the design, planning and implementation of a proposal. Individual proposals would need to be covered in the design stage as stated'.
Historic England	10.3 Relevance to Gatwick and Heathrow		Section 11.3.4. of Appendix A 11 Historic Environment states: 'The stated limits of all of the study areas would need to be subject to review at project level, and heritage assets and their settings lying outside of the limits should also be considered. In this way the effects of issues such as light, noise, tranquillity and the flight path can be considered in detail when more information on flight paths for a preferred scheme is known'.  Interactions between topics have been noted in Table 11.1 and the assessment refers to noise contours and surface access where relevant, however the assessment is generic and based on assumptions so does not assess impacts on individual sites at this stage.  Non-designated assets have been discussed throughout Appendix A 11 Historic Environment. It is noted however that the non-designated heritage assets level of importance within a local/neighbourhood, county/regional or national context would be anticipated to be determined as part of a more detailed appraisal as part of an EIA and

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		<ul> <li>changes in noise patterns generated from both the construction and operation of the preferred expanded airport; and</li> <li>improvements in the servicing and connectability of the expanded airport, through surface transport works.</li> <li>More site specific details of these issues and their impact upon heritage assets should be identified in the baseline and considered for each option as part of the AoS process.</li> <li>The focus of this section appears to be on designated heritage asset with no reference to other types of heritage assets. It is important for the purpose of measuring the impact of the NPS that assets not designated are also identified and assessed in this baseline information. This includes non-designated assets and potentially unknown archaeology within the study area. This information and its relevance to the two existing airports should include consideration of the historic character of the landscape/townscape in and around Gatwick and Heathrow. The point relating to non-designated heritage assets was previously raised in response to the Jacob's report.</li> </ul>	that no specific individual assessment of non-designated assets has been undertaken at the strategic stage.  Section 11.6.22 recognises the potential for previously unknown archaeology to be present within all of the study areas.

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Historic England	Appendix B, Section 10 Historic Environment Topic key issues	•	Table 4.1 and Table 4.2 (AoS Report) updated to reflect proposed text.
Historic England	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework Table, Historic Environment, Key issues column	heritage assets and their settings, from physical works or indirectly, e.g. through generation of traffic surface transport and aviation noise.	Tables 4.2 of the AoS Report have been updated with the proposed text.

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		<ul> <li>Potential to conserve and enhance the significance of heritage assets, including better access to and/or interpretation, understanding and appreciation.</li> <li>Potential direct and indirect effects on the historic landscape, er townscape and waterscapes.</li> </ul>	
Historic England	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework Table, Historic Environment, AoS objective column	Conserve and where possible enhance heritage assets and the wider historic environment including buildings, structures, landscapes, townscapes and archaeological remains.	Changes made to Appraisal Framework, Table 4.2 of the AoS Report.
Historic England	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework Table, Historic Environment, Appraisal	Will its construction and operation lead to harm the significance of heritage assets for example from the generation of noise, pollutants and visual intrusion?  Add the following question to help prompt the potential to enhance our understanding and access to the historic environment, as a potential benefit of the proposed works:	It has not been necessary to make the distinction between construction and operation effects in the text of the Appraisal Questions. The assessment covers significant effects, comprising both construction and operation phases across all topics, including Historic Environment. Appraisal question has been updated to reflex suggested changes.  This objective has not been added but included as possibilities for mitigation in Appendix A 11 (11.10.12):

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	Questions column	Will it improve access to and/or interpretation, understanding and appreciation of the significance of heritage assets?	<ul> <li>The removal or re-modelling of an intrusive building or feature;</li> <li>replacement of a detrimental feature by a new and more harmonious one;</li> <li>restoring or revealing a lost historic feature or view;</li> <li>introducing a wholly new feature that adds to the public appreciation of the asset;</li> <li>introducing new views that add to the public experience of the asset, or</li> <li>improving public access to, or interpretation of, the asset including its setting.</li> </ul>
Historic England	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework Table, Historic Environment, Sources of information column	Further consideration should be given to developing a robust mitigation strategy for the historic environment that was both generic and site specific, takes account of direct and indirect effects, and is sufficiently tailored to the impact of the options upon the distinctive heritage issues in and round each airport.  In addition further consideration should be given to non-designated heritage assets, in terms of their identification, significance and potential harm through the impacts of the options.	Mitigation has been addressed throughout the AoS Report, particularly Section 7.5 (also for the Historic Environment, in Appendix A 11).  Site specific mitigation is not set out in the NPS or AoS at this stage, as options for mitigation are anticipated to be considered as part detailed assessment at EIA.
Historic England	Scoping report, Section 5 Proposed	Will it lead to impact on sensitive views <u>and</u> <u>settings</u> ?	Setting to the landscape topic question has not been included.

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	Appraisal of Sustainability Framework Table, Landscape, Appraisal Questions column		
Historic England	Section 5 Proposed Appraisal of Sustainability	We would seek clarification on potential mitigation as expressed in paragraph 5.2.6. The current wording suggests mitigation and monitoring will be identified for significant adverse effects and uncertainties. To ensure consistency in language should this not read 'significant <u>negative</u> effects'? Thus reflecting the wording used in the table under paragraph 5.2.1. If so, should then the mitigation and monitoring measures consider all negative effects, whether minor or significant, with the degree of the measure responding to the effect? We would prefer this to be approach.	The AoS currently includes mitigation for both minor and significant negative effects as it is difficult to separate the mitigation packages in some cases. It also captures concerns and issues regarding minor effects. The term negative has been used as opposed to adverse.  Section 3.3.26 of the AoS Report states:  'Further mitigation has been proposed for all identified potential significant effects and any uncertainties. In addition, mitigation measures have also been proposed for other effects identified specifically to deal with issues raised by the statutory bodies. This also includes recommendations for further assessment or mitigation to be developed during subsequent project design and associated EIA. Mitigation to be considered for alternatives during project development is set out for each topic in Appendix A. This includes recommendations made by the AC and any additional measures identified during the AoS process'.

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Historic England	Section 5, Proposed Appraisal of Sustainability Framework, 5.2 Proposed Methodology	options against the appraisal questions for the	Non-designated assets level of importance within a local/neighbourhood, county/regional or national context would be anticipated to be determined as part of a more detailed appraisal as part of an EIA.  All of the designated assets have been stated to be of national importance regardless of their grade (Section 11.6.10, Appendix A 11 Historic Environment). The WHS is of international importance. The assessment reflects the type of asset – Scheduled Monument, Listed Building (and Grade).  Heritage significance is also covered under 11.8.6 and 11.8.7.
Historic England	Scoping report, Section 5, Proposed Appraisal of Sustainability Framework, 5.3	We would draw your attention to the possibility of strategic strategies that local planning authorities may lead on, which could have a cumulative impact on the AoS. In the context of London this includes Mayor of London's strategies on Transport, Infrastructure, and	The cumulative impacts likely to arise from of the Mayor's Transport Strategy and Local Development Plans have been considered in Table 6.5 of the AoS Report.

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	Scoping of Cumulative Effects	Climate Change. Outside of the capital, the relevant County Council may have equivalent strategies such as local transport plans, which may have a cumulative impact on the AoS.	
Historic England	3 Review of PPPs, Common Themes /	Promoting the protection and improvement of landscape and townscape character and quality  Conserving and enhancing significance of heritage assets, including archaeological heritage and wider historic environment.	The text in section 4.3.4 of the AoS Repot has been updated.
Environment Agency	Reports wide	Our chief concerns relate to implementation of proposals and mitigation and we believe it is important that the NPS and AoS recognise these details and set a framework to address them. We would like to see that in addition to mitigating potential impacts, opportunities for environmental enhancement should be sought.	Section 7.10 of Appendix A 7 of the AoS provides a framework for mitigation, including enhancement.
Environment Agency	Reports wide	We would like to see an overarching commitment to exemplar standards and net	An exemplar approach and net positive gain is discussed in relation to specific topics within the AoS Report. For example:

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		environmental gain e.g. in line with improved ecological status as set out in the WFD.	Section 6.9.12: 'exemplar surface water management scheme' (water)
			Table 7.3: measures should be adopted and associated opportunities maximised to ensure the preferred scheme is exemplar. (Resources and Waste)
			Tables 7.3 show net gain of Biodiversity features.
			This approach is further discussed in topic specific appendixes. For example with regards to the WFD, Appendix A 7 Water identified that
			→ 'the Water Framework Directive (WFD) (2000/60/EC) has the overarching objective of enabling all water bodies in Europe to attain Good or High Ecological Status' (Section 7.2.3)
			→ CAMS 'details how the requirement of the WFD to ensure no ecological deterioration to rivers, will be met' (Section 7.2.18).
			→ 'The development proposals should seek to pursue an exemplar approach to proposed mitigation and enhancement measures, in particular with regards to meeting Water Framework Directive objectives'. (Section 7.10.2)
			→ A WFD assessment will be required to support the proposals, this could demonstrate that the 2021 and 2027 targets can be achieved as well as maintaining the longer term status (including allowance for the potential changes for risk elements such as climate change) of the waterbodies through avoiding or at worse minimise the adverse impacts (this would require passing an Article 4.7 test) in terms of:

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			Biological quality     Hydromorphological quality
			Physical-chemical quality
			Chemical quality
			(Section 7.10.3)
Environment Agency	Reports wide	We suggest including more detail about how recommendations from the AoS will be included as part of the policy, for example the critical importance of mitigation measures to environmental impact, and compliance with legislation, standards and policy. We suggest that the AoS and NPS should set out how mitigation will be considered, in line with the mitigation hierarchy, and to secure a clear framework for project delivery.	Sections 3.3.22 to 3.3.29 identifies the mitigation, enhancement and monitoring requirement of the SEA. Sections 3.3.23 identifies that:  'The order of preference for mitigation is applied as listed in the SEA Regulations:  → Prevent or avoid;  → Reduce or minimise;  → Offset, ameliorate or compensate.'  Section 3.3.24 states:  'Mitigation measures for the Draft NPS could include:  → Inclusion of new provisions or changes to draft policy wording;  → Technical measure to be applied during the implementation stage; and  → In addition to mitigation, opportunities for environmental enhancement improvement of current environmental conditions and features should be sought.'

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			This approach is further discussed in topic specific appendixes. For example with regards to the WFD, Appendix A 7 Water identified that   impact is an essential part of any major infrastructure project but the fundamental principles must still be that in the first instance efforts could be made to prevent or avoid impact. If this is not possible the impact could be minimised and only then could compensation be considered. The promoters should aim to design the schemes to achieve exemplar standards and an overall net environmental gain, where possible seeking opportunities for wider environmental enhancement'. (Section 7.10.1)
Environment Agency	Reports wide	All the proposed options involve making extensive changes to watercourses. Considerable further work on mitigation will be required as proposals are developed to ensure that standards are met, in particular those required for flood risk management and by the WFD. WFD assessments including Article 4.7 assessments are likely to be required.	This issue has been highlighted in Section 6.9.10 and 6.9.11 within the AoS Report and Section 7.12.9 of Appendix A 7 Water, which states:  'The assessment has found that all three of the schemes would be likely to result in deterioration of the water environment particularly in terms of the WFD. Consequently, the design for all preferred schemes would be required to progress through consideration of Article 4.7 of the WFD, which requires environmental effects to be outweighed by a greater public need (in this case for an airport development). Article 4.7 of the WFD assessment is considered when all stage-appropriate design processes have been completed, and no technically feasible or economically viable alternatives have been identified. The design and assessment processes for the shortlisted schemes have not yet reached this stage as potentially deliverable schemes are under consideration at a policy level'.

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			This is reiterated in Section 7.12.11 of Appendix A 7.
Environment Agency	Reports wide	The importance of the WFD for biodiversity should be recognised as well as its importance for water.	Identified in Appendix A 7 Table 7.1, Interaction of the Water topic with other topics, and Section 7.10.7.
Environment Agency	Reports wide	We welcome that climate change adaptation has been recognised as part of the water topic. However, we suggest that climate change adaptation should be a cross cutting topic as it will affect other topic areas e.g. biodiversity and air quality. We suggest that the vulnerability and adaptability of airport infrastructure to impacts of future climate change should be considered too. For example, we recommend that airport infrastructure should be assessed in terms of resilience to climate change risks such as extreme temperatures, water shortages, strong winds; and how these will change over the lifetime of the development. We recommend that reference should be made to the UK Climate Change Risk Assessment (CCRA) 2012.	Section 2.3.7 identifies the general assessment principals set out in the Draft NPS, which includes:  - 'Climate change adaptation – The scheme will need to consider hotter, drier summers and warmer, wetter winters. There is potentially an increased risk of flooding, drought, heatwaves, intense rainfall events and other extreme events such as storms. The scheme will need to take into account climate change projections and adaptation measures will be required, including green infrastructure'.  Climate Change is also set out as a topic for mitigation and decision making in Section 2.3.8.  The AoS Report considers cross cutting themes in section 4.5.4, including climate change and how this has been addressed in the carbon topic (emissions), water topic (water scarcity and flooding), biodiversity (ecosystems species adaptation and composition) and future baseline for topics. The section of the AoS Report considers adaption to climate change, including extreme weather event, stating:

RE	NAL SCOPING EPORT CTION(S)	STAKEHOLDER COMMENTS	HOW COMMENT HAS BEEN ADDRESSED WITHIN THE AOS OR REASON FOR NOT ADDRESSING COMMENT.
			'Adaptation to the effects of climate change including water scarcity and flooding has been assessed within the water topic. Mitigating the effects of climate change, including minimising greenhouse gas emissions and in particular, carbon, has been assessed in the Carbon topic. In addition, topics have taken into account the effects of climate change as part of future baseline and issues. For example, biodiversity considers the effects of climate change on ecosystems such as species adaptation and composition. In addition, the NPS acknowledges that climate change, including extreme weather and heatwaves, will need to be taken into account through the development and consenting of airport infrastructure'.  Furthermore, interaction between the water topic and climate change have been identified in Table 7.1, Appendix A 7 Water, stating: 'Impacts of climate change include a number of effects on water such as changes in weather patterns and sea level rise which increase flood risk and cause changes to water availability'.  Appendix A 9, Section 9.10.17 refers to extreme weather and references the Climate Change Risk Assessment (CCRA) 2012:  'It should be noted that the assessment in this appendix primarily deals with mitigation for climate change through reduction of carbon emissions. However it should be noted that, during detailed design, climate change adaptation should also be considered. This would include design of infrastructure for climate change impacts such as extreme weather (e.g. high winds and heatwaves) in line with the Government's Climate Change Risk Assessment (2012) and forthcoming updates'.

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Environment Agency	Within AoS	Detailed hydraulic modelling will be required to understand the interaction between surface and groundwater, needed to develop appropriate mitigation for the Heathrow options.	AoS Report Table 7.3 (mitigation) states: 'The scheme will need to be developed during detailed design to ensure that it is safe from flooding and will not increase flood risk elsewhere from all sources. Detailed hydraulic modelling will be required to understand the interaction between surface and groundwater, needed to develop appropriate mitigation'.
			Appendix A 7, Question 18 assessment table states (for LHR-ENR and LHR-NWR): 'Assumed that hydraulic modelling to a sufficient level will be undertaken to understand the interaction between surface and groundwaters to ensure appropriate mitigation is in place'.
Environment Agency	Within AoS	Bird strike mitigation measures could have significant impacts on water bodies. Further work is required to ensure that WFD and other standards and targets are not compromised.	Section 7.10.3 of Appendix A 7 (Water) states:  'There is a potential conflict between the need to manage bird strike (ie discourage use of the area by birds) and new open watercourses (to compensate for watercourses lost to development). Methods such as netting of open water bodies could have a detrimental impact on the water environment such as loss of biodiversity. Innovative environmental measures to reduce the risk of bird strikes could be researched and incorporated where possible to reduce the impact on the water environment, so the applicable standards (including the WFD) are not compromised'.  Section 6.9.8 of the AoS Report states:  'It should be noted that there is a potential conflict between the need to manage bird strikes for which the introduction of new open watercourses is a negative impact. The alternatives for managing this will most likely also include netting of open water bodies

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			something that potentially will have a detrimental impact on the water environment especially the management of water bodies.'
Environment Agency	Within AoS	Further work is required to understand impacts on water infrastructure (sewage treatment works and sewerage), for example on what additional wastewater flows will need to be treated at sewage treatment works, the permits that will be required to prevent deterioration of the environment, and whether current technology can deliver these levels of treatment.	Appendix A 7, Assessment Table for Objective 18, states that it is: 'Assumed that variations in the environmental permits can be secured for the discharge of any additional waste water flows and this water can be treated to required levels by technology currently available to the sewage undertaker'.  Mitigation within Appendix A 7 identifies that 'the WRMP could be refined to ensure that a full account of the water requirements over the lifetime of the proposed scheme is assessed; this could also incorporate foul water treatment and discharge to ensure the protection of the wider environment'.
Environment Agency	Within AoS	Further planning and design work is needed to ensure that environmental standards are achieved with regard to the risks of surface water containing contaminants from the extended hard standing areas entering watercourses. De-icing is a particular potential issue and there is also the potential for pollution arising from the large quantities of chemicals including fuels stored and used on site during both construction and operation.	Appendix A 7, Assessment Table for Objective 18, states that: 'Later stages of the design will incorporate suitable measures to ensure that environmental standards are met in relation to the risks of preventing contaminated surface water runoff from the extended entering the watercourse'.  Appendix A 7, Section 7.11.4 states that: 'It has been assumed that there would be no changes to de-icing practice or management would occur (other than an increase in load proportional to the increase in peak winter aircraft movements). There would be no new technologies that would substantially change the issues relating to de-icer recycling'.

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Environment Agency		The removal and replacement of the Lakeside energy from waste plant would be required as part of the Heathrow North West runway option. Putting in place a replacement facility would be a major undertaking, requiring a very early start if disruption to strategic contracts is to be avoided. It should also be borne in mind that this is a merchant facility, with numerous contracts, some as far away as Dorset. It is important that impacts on waste disposal in other areas, is investigated as a part of the process, to establish overall impacts and potential to reallocate contracts in the interim. Were the plant to be moved, it would provide an opportunity to improve the facility, to provide heat energy, either to the airport, or another local user.	Information has been provided within the AoS Report as follows:  6.12.4: 'As part of the core works, the LHR-NWR promoter has confirmed that works will involve the demolition and re-provisioning of the Lakeside Energy from Waste (EfW) Plant. The reprovisioning of this sizeable building, associated plant and supporting infrastructure would require significant consumption of materials in addition to the consumption required for the other aspects of the LHR-NWR scheme'.  6.12.10: 'No estimate has been made of the quantities of waste that would arise from the proposed demolition of the Lakeside EfW Plant (which is unique to the LHR-NWR scheme). The demolition of the Lakeside EfW Plant also has the potential to cause issues for waste management because increased transportation costs and alternative routing for some waste authorities — both within the London region and further afield - would be required if alternative facilities are used. Burdens on alternative waste management / recycling infrastructure might also be realised, in addition to indirect negative impacts on local traffic conditions'.  6.12.11: 'The demolition of the EfW Plant would likely exacerbate the temporary and permanent impacts associated with the LHR-NWR scheme'. Further information regarding facility has been included within Appendix A 10 Resources and Waste, Section 10.7.9, 10.9.11 to 10.9.14, 10.9.30, 10.9.31, 10.11.1, 10.12.6, 10.12.11 to 10.12.13.

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Environment Agency	Reports wide	The way the economic 'key issues' are worded is unbalanced compared to those for other topics. For example it is stated that there is a 'need' for growth etc. For other topics the issues are couched in terms of impacts and effects. We suggest using a consistent way to describe all the topics in terms of impacts and effects.	Within the AoS Report, Table 4.1, ' <i>There is a need to</i> ' has been revised.
Environment Agency	3.2. Comment Themes /	We suggest that the common themes and objectives in 3.2.2 reflect quantitative goals where possible e.g. the Climate Change Act 2008 commitment to an 80% cut in GHG emissions by 2050.	The themes and objectives here are high level and don't refer to specific legislation.  However, the carbon appendix does reference this target at 9.1.4: The Climate Change Act 2008 ("the Act") established a legally binding target to reduce the UK's 'net' greenhouse gas emissions by at least 80% below base year (1990) levels by 2050 (the '2050 target').  This target is referred to throughout the assessment.
Environment Agency	3.2. Comment Themes /	We suggest that 'no net loss' should be referred to – the Planning Practice Guidance says 'the National Planning Policy Framework is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning	Appendix A 5 Biodiversity reflects this comment. Section 5.11.5 States: 'The mitigation hierarchy comprises three tiers and is essential for all development projects aiming for No Net Loss or Net Positive Impact or for adopting a Net Positive Approach. It is based on a series of sequential steps that must be taken throughout a

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		is that it should contribute to conserving and enhancing the natural environment and reducing pollution.' We suggest that this approach would help to clarify the assessment of options, mitigation measures, monitoring, and the setting standards for promoters to meet.	project's life cycle in order to limit any negative impacts on biodiversity'.
Environment Agency		We would like to see the need to comply with environmental regulations and standards stated here.	The comment has been reflected throughout the AoS report and topic appendixes.
Environment Agency		Water Company Water Resources Management Plans should be taken into account. These are key to making sure any new development has a reliable supply of potable water.	Appendix A 7 Water includes a reference to WRMPs  Their policy and legislation context is cover in Sections 7.2.12 to 7.2.14. WRMPs have been considered under the local baseline, Section 7.6.3: 'The water resource baseline position has been assessed reviewing the RBMP, CAMS and WRMP covering the airport locations. And within the Assessment, eg Sections 7.9.20, 7.9.29 and 7.9.34.
Environment Agency	3.2. Comment Themes /	We suggest that the review of the Waste Framework Directive (2008/98/EC) should recognise that the Directive provides for recycling targets for municipal waste and includes a target for recycling of construction and demolition waste (which is reiterated in	Waste Framework Directive targets (Municipal, packaging, landfill, construction) are included in Appendix A 10 Sections 10.6.9 and 10.6.15.

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		the Circular Economy Principles). It also provides for the waste hierarchy and the efficient use of resources (which is mentioned in the scoping paper), as policy drivers for waste planning, and we suggest they should be included here. We believe that the reference to climate adaptation in this context could be confusing and suggest it should be dealt with by adherence to the waste hierarchy.	
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework – Table, Key issues from policy review and baseline column, Biodiversity, flora and fauna	We note that woodland habitats are specifically mentioned and we recommend adding effects on watercourses and wetland habitats too.  We would also like to see recognition of the need to avoid deterioration and improve ecological status of water bodies in line with the Water Framework Directive (WFD) rather than the need to meet legislation, standards or policy.	The Table 4.1, biodiversity, within the AoS Report has been updated to state:  Effects on ancient habitats such as areas of woodlands, veteran trees, hedgerows and other habitats such as watercourses and wetlands and semi-natural woodland.  Table 4.1, Water, now includes:  'The need to avoid deterioration and improve ecological status of waterbodies in line with the Water Framework Directive'.
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability	The way the economic 'key issues' are worded is unbalanced compared to those for other topics. For example it is stated that there is a 'need' for growth etc. For other topics the issues are couched in terms of	Within the AoS Report, Table 4.1, 'There is a need to' has been revised.

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	Framework – Table, Key issues from policy review and baseline column, Economy	impacts and effects. We suggest using a consistent way to describe all the topics in terms of impacts and effects.	
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework – Table, Air Quality, Objective 13, Question 25	Section 5, Objective 13, Question 25. The report states that 'The Airports Commission Air Quality – National and Local Assessment and 6. Air Quality – Baseline can be used in conjunction with subsequent modelling undertaken by the Government (2015) to determine likely air quality exceedances attributed to Airport Expansion, and compliance with targets and legislation.'  We understand that the modelling is being updated to tie in with that done by Defra for their new NO <sub>2</sub> Action Plans. The Scoping Report refers to documents published 1 July 2015. We suggest reference is made to the latest Defra work.	Appendix A 8 of the AoS refers to the 2015 Air Quality Plans and subsequent work on air quality.
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability	We suggest that the Objectives and Appraisal questions should include consideration of impacts of contaminated land and the risks of development creating contaminant pathways that enable	The key issues, objectives and appraisal questions include damage to soils from erosion, degradation or contamination during construction or operation. Sources of contamination and likely pathways will not be known until more detailed surveys are

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	Framework – Table, Soil	contaminant sources to enter water bodies including groundwater.	undertaken to support EIA. However, the soils assessment does acknowledge that pathways to surface and groundwater may occur.
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework – Table, Water Appraisal objective 11	'To protect the quality of surface and ground water'. We suggest rewording to 'there is a need to meet the requirements of the WFD River Basin Management Plans and promote sustainable use of water resources including surface and groundwater'. Development must not cause deterioration of water body status or jeopardise the attainment of good water status or of good ecological status potential and good surface water chemical status, or impede the attainment of WFD protected area objectives. This would better describe the wider environmental objectives that must be met e.g. protected area objectives and ensuring the sustainable use of water.	Objective has been amended to state: To protect the quality of surface and ground waters, and use water resources sustainably.  The Appraisal question has been amended to:  Will proposals have adverse effects on the achievement of the environmental objectives established under the Water Framework Directive?  The assessment reflects these requirements.
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework – Table, Water,	'Will surface and groundwater quality be adversely affected?' It is important to recognise that WFD is not just about 'no deterioration' and we suggest rewording to 'will proposals have adverse effects on the achievement of the environmental objectives established under the WFD i.e. will proposals affect the achievement of good surface water	Appraisal question updated as above.

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	Appraisal question 18	status (including chemical status) or good ecological potential and/or will proposals affect good chemical and quantitative status for groundwater?.'	
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework – Table, Water, Questions 22 and 23	Questions 22 and 23 are not only about climate change adaptation so it is potentially confusing / limiting to have them under this title.  The 'key issue' 'an increase flood risk and reduced risk of reduced reliance to climate change' is not clear and we suggest should be reworded to clarify and include the water environment more broadly, not just flood risk.  We suggest the assessment should consider impacts over the development lifetime including the impacts of climate change.	Key issues for water have been updated in Table 4.2 of the AoS Report so that it is related to water in line with the assessment.  Climate change has been added as a cross cutting theme to identify other where climate change is assessed at 4.5.4.
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework – Table, Climate Change	We are pleased to see that climate change adaptation has been recognised as part of the water topic. However, we suggest that climate change adaptation should be a cross cutting topic as it will affect other topic areas e.g. biodiversity and air quality. The vulnerability and adaptability of airport infrastructure to impacts of future climate change should be considered too. For example, we recommend that airport	See Response above under 'Report wide'. The AoS Report considers cross cutting themes in Section 4.5.4, including climate change and how this has been addressed in the carbon topic (emissions), water topic (water scarcity and flooding), biodiversity (ecosystems species adaptation and composition) and future baseline for topics.  Appendix A 9, Section 9.10.17 refers to extreme weather and references the Climate Change Risk Assessment (CCRA) 2012:'It should be noted that the assessment in this appendix primarily

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	Resilience and Adaptation	infrastructure should be assessed in terms of resilience to climate change risks such as extreme temperatures, water shortages, strong winds; and how these will change over the lifetime of the development. We recommend that reference should be made to the UK Climate Change Risk Assessment (CCRA) 2012.	deals with mitigation for climate change through reduction of carbon emissions. However it should be noted that, during detailed design, mitigation for climate change adaptation should also be considered. This would include design of infrastructure for climate change impacts such as extreme weather (e.g. high winds and heatwaves) in line with the Government's Climate Change Risk Assessment (2012) and forthcoming updates'.
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework – Table, Air Quality, Appraisal Question 26	We suggest rewording from 'issues' to 'harm'.	The word issue has been removed at request of AQ Leads, harm has not been inserted as this may then need to be defined.
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework – Table, Resources and waste,	'Will it be possible to minimise waste generated during construction and operation?'  It is not always possible to completely conserve resource, however the aspiration to minimise the use of or need for new material is a good one. There is an opportunity to	These principles have been reference within the Appendix A 10 Resources and Waste. Sections:  10.1.5: 'Adopting the principles of the Hierarchy, and applying innovation, creativity and careful planning to the management of materials and waste arisings during the lifecycle phases of built environment projects (planning through to end of life transition), will contribute to the long-term industry vision for achieving a circular economy within the UK, Europe and beyond. This vision is built on the premise that exemplar projects will manage resources are

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	Appraisal question 29.	apply exemplar performance to the project in application of circular economy principles.	human health and the environment.  10.2.8: 'The Closing the Loop Package comprises an EU Action Plan for the Circular Economy. It sets out a programme of action with measures covering the whole material lifecycle: from production and consumption, to waste management, to the market for secondary raw materials. The annex to the Action Plan sets out the timeline for completing actions'.  10.9.7: 'Design, procurement and construction activities play a particularly important role in minimising lifecycle impacts from material consumption, whilst maximising opportunities to align with the highest tiers of the Waste Management (Resource Efficiency) Hierarchy. Where good, best practice and exemplar principles of resource efficiency are not applied during these three lifecycle stages, opportunities to minimise impacts are typically lost or their effect greatly minimised'.

STAKEHOLDER	FINAL SCOPING REPORT SECTION(S)	STAKEHOLDER COMMENTS	How comment has been addressed within the AoS or reason for not addressing comment.
			10.10.2: 'Section 10.10.3 sets out the mitigation measures proposed by the scheme promoters, and range of additional measures to complement and advance these. In combination, these measures represent resource efficiency best and exemplar practice for scheme delivery and operation'.
			10.10.3: 'By adopting the following measures, the preferred scheme promoter will be able to more effectively take into account the pending ambitions and requirements of a circular economy in the UK. The scheme promoter may need to consider the appropriateness of applying all stated measures'.
			10.12.2: 'As part of the conclusions drawn, it should be noted that future policy (the EU Circular Economy Package; the 25 year plan for the natural environment, in particular) and increasingly stringent legislation (for example, the Carbon Budget targets) are likely to materially influence future assessments of impact and the mitigation measures considered appropriate for aviation scheme lifecycles. Future assessments should be mindful of advances to these particular initiatives'.
Environment Agency	Scoping report, Section 5 Proposed Appraisal of Sustainability Framework – Table, Resources and waste,	Will it be possible to minimise waste generated during construction and operation?  Obligations under the waste hierarchy require that everything possible is done to minimise the generation of waste, from design through to operation and end of life. We suggest this project demonstrates a high	Objective 16 is to: 'minimise the generation of waste in accordance with the principles of the Resource Efficiency Hierarchy'  These principles have been reference within the Appendix A 10 Resources and Waste. Sections:  10.9.7: 'Design, procurement and construction activities play a particularly important role in minimising lifecycle impacts from material consumption, whilst maximising opportunities to align with the highest tiers of the Waste Management (Resource Efficiency)

	FINAL SCOPING REPORT SECTION(S)	STAKEHOLDER COMMENTS	HOW COMMENT HAS BEEN ADDRESSED WITHIN THE AOS OR REASON FOR NOT ADDRESSING COMMENT.
		regard to the principles of waste hierarchy, in particular for minimisation and reuse.	Hierarchy. Where good, best practice and exemplar principles of resource efficiency are not applied during these three lifecycle stages, opportunities to minimise impacts are typically lost or their effect greatly minimised.

STAKEHOLDER	FINAL SCOPING REPORT SECTION(S)	STAKEHOLDER COMMENTS	How comment has been addressed within the AoS or reason for not addressing comment.
			10.10.2: 'Section 10.10.3 sets out the mitigation measures proposed by the scheme promoters, and range of additional measures to complement and advance these. In combination, these measures represent resource efficiency best and exemplar practice for scheme delivery and operation'.  10.10.3: 'By adopting the following measures, the preferred scheme promoter will be able to more effectively take into account the pending ambitions and requirements of a circular economy in the UK. The scheme promoter may need to consider the appropriateness of applying all stated measures'.  10.10.3, bullet two: 'Negative effects during construction and operation could be mitigated in part by operating in the highest tiers of the waste management hierarchy. This could require the adoption of the principles of resource efficiency, with opportunities maximised by designing for re-use and recovery, resource optimisation, off-site construction, resource efficient procurement, and designing for the future <sup>21</sup> (design)';  10.10.3, bullet 13: 'Specific operational mitigation measures to prevent and reduce waste, recycling effectively and integrating resource efficiency measures in the supply chain (operation)'.
Environment Agency	Section 5 Proposed Appraisal of Sustainability Framework,	It is not clearly described how the AoS will inform the NPS. We suggest including more detail about how recommendations from the AoS will be included as part of the policy, for example the critical importance of mitigation measures to environmental impact, and compliance with legislation, standards and	The NPS and AoS were developed as an iterative process. The NPS has been informed by the AoS in its approach to assessment, mitigation and decision-making.  This is discussed within Section 8.1, Development of the Draft NPS, of the AoS Report.

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	5.2 (methodology)	policy. We suggest that the AoS and NPS should set out how mitigation will be considered, in line with the mitigation hierarchy, and to secure a clear framework for project delivery.	
Environment Agency	Section 5.3. Scoping of Cumulative Effects, (PPP's)	River Basin Management Plans should be considered for cumulative effects https://www.gov.uk/government/collections/river-basin-management-plans-2015	Appendix A 7 Section 7.10.3 states: "A WFD assessment will be required to support the proposals. This could demonstrate that the 2021 and 2027 targets can be achieved as well as maintaining the longer term status (including allowance for the potential changes for risk elements such as climate change) of the waterbodies through avoiding or at worse minimise the adverse impacts (this would require passing an Article 4.7 test)"  It is assumed that cumulative effect will be considered at project level in relation effect on water body under the water framework directive.  Furthermore, Section 7.11.8 identifies that 'In terms of the current quality and 2027 predicted quality as detailed in the latest RBMP, there have been movements both in terms of water body improvements and degradation over the study area, with more improvements, thus increasing baseline quality.

<sup>&</sup>lt;sup>21</sup> WRAP, 2015. Designing for Resource Efficiency, The Five Principles. [online] Accessed 24/12/2015.

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			Appendix A 7 Section 7.6.3 states:  'The water resource baseline position has been assessed reviewing the RBMP, CAMS and WRMP covering the airport locations. This allowed for a baseline to be calculated against which to compare the proposed airport schemes'.
Natural England	Appendix A	We welcome the reference to the National Planning Policy Framework (NPPF) <sup>22</sup> and Biodiversity (p98) and the commitment that the AoS should 'encourage protection and enhancement of natural habitats for wildlife and ecosystems'. We suggest that 'no net loss' should be referred to – the planning practice guide <sup>23</sup> says 'the National Planning Policy Framework is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature'. The NPPF states that the planning system should contribute to and enhance the natural and local environment by "minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's	Appendix A 5 Biodiversity has been amended to include this policy text (Specifically Section 5.2.13 and 5.11).  Text regarding no net loss and net gain is set out below:5.2.13: 'In the context of biodiversity the NPPF identifies that the planning system should contribute to and enhance the natural and local environment by:   recognising the wider benefits of ecosystem services; and  minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'.

<sup>&</sup>lt;sup>22</sup> Communities and Local Government, 2012. *The National Planning Policy Framework*. [online] Accessed 26/01/2017. <sup>23</sup> Communities and Local Government, 20126. *Planning Practice for the Natural Environment*. [online] Accessed 26/01/2017.

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		commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures" <sup>24</sup> . We advise that this net gain principle underpins the AoS and specifically the development of the mitigation and compensation measures.	<ul> <li>5.5.6: 'Positive and negative effects are determined according to whether the change is in accordance with nature conservation objectives and policy:  <ul> <li>Positive impact – a change that improves the quality of the environment e.g. by increasing species diversity and generating net gains, extending habitat or improving water quality. Positive impacts may also include halting or slowing an existing decline in the quality of the environment';</li> <li>5.11.1: The NPPF states: <ul> <li>'the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'.</li> <li>5.11.4: 'To minimise impacts on biodiversity and geodiversity, planning policies should:</li> <li>plan for biodiversity at a landscape-scale across local authority boundaries;</li> <li>promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets,</li> </ul> </li> </ul></li></ul>

<sup>&</sup>lt;sup>24</sup> Communities and Local Government, 2012. *The National Planning Policy Framework*, Paragraph 109. [online] Accessed 26/01/2017.

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			and identify suitable indicators for monitoring biodiversity in the plan;'
			5.11.5: 'The mitigation hierarchy comprises three tiers and is essential for all development projects aiming for No Net Loss or Net Positive Impact or for adopting a Net Positive Approach. It is based on a series of sequential steps that must be taken throughout a project's life cycle in order to limit any negative impacts on biodiversity'.
			5.11.8: 'Collectively avoidance and mitigation serve to reduce, as far as possible, the residual impacts that a project has on biodiversity. In some circumstances, however, even after their effective application, compensation will be required to avoid net loss or to create a Net Positive Impact'.
			5.11.11: 'The AoS objectives are to protect and enhance designated sites for nature conservation and to conserve and enhance undesignated habitats, species, valuable ecological networks and ecosystem functionality. These align to the AC's objective of avoiding harm to biodiversity and, where possible, to provide net gains via habitat enhancement and mitigation measures'.
			5.11.12: 'Based on the information available it is not possible to determine the consistent application of the mitigation hierarchy for the options or how no net loss or net gain will be achieved though it is acknowledged that further work will be required to inform these considerations in detail both in terms of meeting the AC's objective of avoiding harm to biodiversity and, where possible, to provide net gains via habitat enhancement and mitigation measures'.

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			5.10.9: 'The AoS objectives are to protect and enhance designated sites for nature conservation and to conserve and enhance undesignated habitats, species, valuable ecological networks and ecosystem functionality. These align to the Airports Commission's objective of avoiding harm to biodiversity and, where possible, to provide net gains via habitat enhancement and mitigation measures'.
			An exemplar approach and net positive gain is discussed in relation to specific topics within the AoS Report. For example, Tables 7.1 promotes no net loss of Biodiversity features.
			Appendix A 5 Biodiversity reflects this comment. Section 5.11.5 States: 5 The mitigation hierarchy comprises three tiers and is essential for all development projects aiming for No Net Loss or Net Positive Impact or for adopting a Net Positive Approach. It is based on a series of sequential steps that must be taken throughout a project's life cycle in order to limit any negative impacts on biodiversity.
Natural England	Appendix A	We note that there is no reference to green infrastructure and the NPPF and advise that this is covered in Appendix A. DCLG has published useful new guidance on green infrastructure in its Planning Practice Guidance on the natural environment. The guidance is available <a href="here">here</a> . The guidance identifies that green infrastructure 'is important to the delivery of high quality sustainable development' and 'should be a key	With Appendix A 5, Table 5.1 recognizes that the 'use of green infrastructure can benefit both landscape and biodiversity'.  This is further referred to in Section 5.11.19, stating:

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		consiedration in local plans planning decisions where relevant'.	'Effective application of landscape-scale green infrastructure could play a valuable role in addressing some of the considerations identified above. Green infrastructure could be especially relevant to the schemes as it can be focused to ensuring development proceeds in parallel with the protection and enhancement of existing environmental assets and the creation of new ones. Good green infrastructure can produce a strategic and linked, multifunctional network of spaces with benefits for people and wildlife. Furthermore it can be developed to include sustainable features for the development by making it resilient to the effects of climate change and enabling authorities to meet their duty to conserve biodiversity under the NERC Act 2006'.
Natural England	Appendix A	We note that there is no reference in Appenidix A to the NPPF and landscape. The AoS should clearly set out the policy context in relation to nationally protected landscapes including National Parks, the Broads and Areas of Outstanding Natural Beauty as set out in in paragraph 115 of the National Planning Policy Framework. The NPPF states that "great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and AONBs which	The NPPF is discussed throughout Sections 12.2.6 - 12.2.11 in regards to landscape, within Appendix A 12 Landscape.  The policy context in relation to nationally protected landscapes is discussed in Section 12.2.2 – 12.2.15. This includes National Parks and Areas of Outstanding Natural Beauty.

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		have the highest level of protection in relation to landscape and scenic beauty." <sup>25</sup>	
Natural England	Appendix A	We recommend that Appendix A highlights the policy context in relation to ancient woodland, as set out in the NPPF which states: 'planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss'; It should also refer to the standing advice on ancient woodland and veteran trees <sup>26</sup> . The irreplaceable nature of ancient woodland and veteran trees needs to be explicit.	'The NPPF states that  5.9.93 planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits

<sup>&</sup>lt;sup>25</sup> Communities and Local Government, 2012. *The National Planning Policy Framework*, Paragraph 115. [online] Accessed 26/01/2017.

<sup>&</sup>lt;sup>26</sup> Natural England and the Forestry Commission, 2015. *Ancient woodland and veteran trees: protecting them from development*. [online] Accessed 26/01/2017.

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			clearly outweigh the loss or damage of ancient woodland which is as per the NPPF above.'  5.11.27: 'The irreplaceable nature of ancient woodland and veteran trees means that loss or damage cannot simply be rectified by mitigation and compensation measures. Therefore, where measures seek to address issues of loss or deterioration of ancient woodland or veteran trees, these should be issues for consideration only after it has been judged that the wider benefits of a proposed development clearly outweigh the loss or damage of ancient woodland. Ancient woodland is an irreplaceable habitat which cannot be re-created, and that due to its irreplaceability, like for like compensation or biodiversity offsetting is not applicable to ancient woodland'.  Table 7.3 of the AoS report states:  'The Draft NPS also acknowledges the importance of ancient woodland and veteran tress (5.102) in addition to opportunities for building in beneficial biodiversity as part of good design (5.103)'.
Natural England	Appendix A	We recommend that Appendix A is amended to include the policies and objectives in relation to soil protection as well as protection of best and most versatile agricultural land. Para 112 of the NPPF on the protection of best and most versatile agricultural land should be referenced, as should the protection of soil in the NPPF (para 109). This extends beyond the consideration of 'land quality' (contamination) as described in Appendix A	remediation of contaminated land;

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		and should more explicitly refer to the protection of soil resources during development. The Planning Practice for the Natural Environment <sup>27</sup> paras 025 & 026 provide additional guidance on best and most versatile agricultural land and soil issues, which could usefully be referenced.	Table 4.1 identifies 'Loss of soils from sealing, including impact on best and most versatile agricultural land' and 'Damage to soils from erosion, degradation or contamination during construction or operation' as key sustainability issues for the AoS.  Objective 10 and Questions 16 and 17 surround the need to protect a soil resources and the best and most versatile agricultural land. These topics are explored in Appendix A 6.  Section 7.4.69 of the AoS Report identified reissue regarding the protection of soil resources (not just contamination): 'Construction and operation activities have the potential to pollute soils. Development of land will affect soil resources (including physical loss of and damage to soil resources) associated with land contamination (from potential substance release) and structural damage (from potential compaction, burial, mixing, etc.). Indirect impacts may also arise from changes in the local water regime, organic matter content, soil biodiversity, and soil process'.  Section 6.2 of Appendix A 6 AoS Soils covered Policy and legislation in relation is soil. This includes the EU Thematic Strategy for Soil Protection, National Planning Policy Framework, Environmental Protection Act 1990 And The Contaminated Land (England) Regulations 2006 (HMSO, 2006) as amended by the Contaminated Land (England) (Amendment) Regulations 2012, Groundwater Directive (GWD) (2006/118/EC), Waste Framework

<sup>&</sup>lt;sup>27</sup> Communities and Local Government, 20126. *Planning Practice for the Natural Environment*. [online] Accessed 26/01/2017

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			Directive (2008/98/EC) and Natural Environment Natural Choice: securing the value of nature.
Natural England	Appendix A	Appendix A should reflect the plans and policies referenced in Table 5.2 of the main AoS scoping report eg Local Plan references.	Local Development plans have been included with Table 6.5 of the AoS Report.  They are not individual referenced as local policies would fall under national policy for the NPS and would be too numerous to reference each local authority at options appraisal level.
Natural England	Appendix A	Appendix A should make reference to Climate Change Adaptation Reports produced by the airports.	These are not Regulations or Policies. Climate change adaptation is set out in the NPS (4.37 - 4.48).
Natural England	Appendix A	We have noticed a number of errors in Appendix A plans and policies and suggest that the biodiversity policies are checked for accuracy eg P56: The policy described under Directive 2002/49/EC on environmental noise appears to be a biodiversity policy rather than a noise policy.	Errors checked and not carried forward to later reports.
Natural England	Appendix A, review of the PPP's in chapter 3, Para	It seems that land quality (contaminated land ) has been confused with agricultural land quality (protection of best and most versatile agricultural land) and general protection of soil	Suggested changes have been made in Section 4.3.4 of the AoS Report.

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	3.3 bullets 10 and 11.	resources. We suggest these are reworded as follows:  Bullet 10 'Protecting land quality, including the identification and remediation of contaminated land'  Bullet 11 'Protecting soils and best and most versatile agricultural land'	
Natural England	Appendix B and Chapter 4, Overarching Comments	We note that coverage of climate change issues in both Appendix B and Chapter 4 is inconsistent, with some chapters in Appendix B considering climate change as a future issue and others not. We also note that there is no mention of climate change adaptation in Table 4.1. Climate change is a cross cutting theme that needs to be considered across all topics as identified in the main AoS at 3.2.2. Specifically in relation to biodiversity the AoS will need to give consideration to future ability of species to adapt to climate change. An example of this is the maintenance of networks of interconnected habitats to maintain robust population dynamics and allow species migration in response to changing climatic conditions. However all subtopics will need to consider mitigation and adaptation to climate change.	Inconsistency within regard to climate change has been update throughout the AoS report.  Climate change has been identified as a cross cutting theme in Section 4.5.4 of the AoS Report, Stating:  'Adaptation to the effects of climate change including water scarcity and flooding has been assessed within the water topic. Mitigating the effects of climate change, including minimising greenhouse gas emissions and in particular, carbon, has been assessed in the Carbon topic. In addition, topics have taken into account the effects of climate change as part of future baseline and issues. For example, biodiversity considers the effects of climate change on ecosystems such as species adaptation and composition'.  Appendix A 5, Biodiversity, Section 5.6.30 and 5.6.31 outlined that climate change could lead to:  'Overall, climate change could lead to:  Changes in phenology (including changes in the timings of seasonal events causing loss of synchronicity and increased

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			competitive advantage for some species at the expense of others);
			→ Shifts in suitable climate conditions for individual species leading to change in species distribution, abundance and range;
			→ Changes in the community structure and ecosystem function of habitats which species occupy;
			Changes to the composition and structure of plant and animal communities (including arrival of non-natives, loss of native species and increase in pest species);
			→ Changes to habitats and ecosystems, such as altered water regimes, increased rates of decomposition in bogs and higher growth rates in forests; and
			→ Loss of physical space due to sea level rise and increased storminess.
			Climate change effects are compounded by the influences of population growth and the built environment that increasing populations generate. Pressures for undeveloped land are likely to be greater than ever before and this poses a threat to those areas of non-designated land that fulfil so many valuable functions to ecosystems. Increasingly water resources will need to be safeguarded and managed to maximum efficiency'.
			Section 5.9.96 states that: 'Loss, severance and fragmentation of woodland and / or hedgerows require consideration both directly and indirectly. The direct loss of habitat requires consideration on the remaining habitat's connectivity, quality (via pollution and fragmentation) and robustness. This affects the habitat's resilience into the future including the potential effects of climate change and species abilities to absorb future pressures on the landscape'.

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			Section 5.11.19 states: 'Good green infrastructure can produce a strategic and linked, multifunctional network of spaces with benefits for people and wildlife. Furthermore it can be developed to include sustainable features for the development by making it resilient to the effects of climate change and enabling authorities to meet their duty to conserve biodiversity under the NERC Act 2006'.
Natural England	Appendix B and Chapter 4, Overarching Comments	of the strategic level AoS. However for future project level assessments we would recommend that ESA is considered as a cross	Ecosystem Services have been considered as a process within Table 3.6 of the AoS Report. This table states that 'the AoS recommends that further assessment of impacts on ecosystem services and identification of mitigation is undertaken at project level'.  Ecosystem Services has been identified as a cross cutting theme in Section 4.5.4 of the AoS Report:  'The consideration of ecosystems such as farmland or woodland, and the different services that these provide covers a number of AoS topics such as Soils (food production, pollution control), Water (regulation of flood risk) and Landscape (amenity value). An assessment of ecosystem services was undertaken by the AC as described in Table 3.6 above. Although further assessment has not been undertaken for the AoS, references to potential impacts on ecosystem services are made in individual topics where relevant, including Soils, Carbon, Water and Biodiversity'.
Natural England	Appendix B, Chapter 7	The baseline information provides a basic overview. We recognise that this is a high level assessment and we would expect a more robust baseline to be developed at the	At the detailed assessment stage much greater detail on baseline would be established to appropriately inform the impact assessment.

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		project level assessment stage, including more detailed information on designated sites, their qualifying features of interest, current condition and conservation objectives.	
Natural England	Main Scoping Report Table 4.1	This table doesn't mention ancient woodland. Whilst this is covered in 4.2 (table in section 5 Proposed Appraisal of Sustainability Framework), we would advise that the irreplaceable nature of ancient woodland and veteran trees needs to be explicit in all sections. This is a key factor when considering the Gatwick proposal in particular.	Appendix A 5, Biodiversity, states:  'The NPPF states that  5.9.93 planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss;  5.9.94 Further Natural England's standing advice on ancient woodland and veteran trees identifies that the nature of ancient woodland and veteran trees means that loss or damage cannot simply be rectified by mitigation and compensation measures. Therefore, where measures seek to address issues of loss or deterioration of ancient woodland or veteran trees Natural England considers that these should be issues for consideration only after it has been judged that the wider benefits of a proposed development clearly outweigh the loss or damage of ancient woodland which is as per the NPPF above.'  Section 5.11.27: 'The irreplaceable nature of ancient woodland and veteran trees means that loss or damage cannot simply be rectified by mitigation and compensation measures. Therefore, where measures seek to address issues of loss or deterioration of ancient woodland or veteran trees, these should be issues for consideration

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			only after it has been judged that the wider benefits of a proposed development clearly outweigh the loss or damage of ancient woodland. Ancient woodland is an irreplaceable habitat which cannot be re-created, and that due to its irreplaceability, like for like compensation or biodiversity offsetting is not applicable to ancient woodland.
			Table 7.3 of the AoS report states:  'The Draft NPS also acknowledges the importance of ancient woodland and veteran tress (5.102) in addition to opportunities for building in beneficial biodiversity as part of good design (5.103)'.
Natural England	Appendix B, Chapter 7; 7.3.6: Key Issues for AoS	We would advise that the irreplaceable nature of ancient woodland and veteran trees needs to be explicit in all sections. We would recommend that the this summary specifically refer to effects on ancient woodland.	Table 7.3 of the AoS report states:  'The Draft NPS also acknowledges the importance of ancient woodland and veteran tress (5.102) in addition to opportunities for building in beneficial biodiversity as part of good design (5.103)'.  The impact on Woodland, including Ancient woodland, is discussed within Appendix A 5.  Appendix A 5, Biodiversity, states:  'The NPPF states that
			5.9.93 planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees

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			found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss;  5.9.94 Further Natural England's standing advice on ancient woodland and veteran trees identifies that the nature of ancient woodland and veteran trees means that loss or damage cannot simply be rectified by mitigation and compensation measures. Therefore, where measures seek to address issues of loss or deterioration of ancient woodland or veteran trees Natural England considers that these should be issues for consideration only after it has been judged that the wider benefits of a proposed development clearly outweigh the loss or damage of ancient woodland which is as per the NPPF above.'  Section 5.11.27: 'The irreplaceable nature of ancient woodland and veteran trees means that loss or damage cannot simply be rectified by mitigation and compensation measures. Therefore, where measures seek to address issues of loss or deterioration of ancient woodland or veteran trees, these should be issues for consideration only after it has been judged that the wider benefits of a proposed development clearly outweigh the loss or damage of ancient woodland. Ancient woodland is an irreplaceable habitat which cannot be re-created, and that due to its irreplaceability, like for like compensation or biodiversity offsetting is not applicable to ancient woodland'.
Natural England	Appendix B, Chapter 7 (Biodiversity,	In line with EA comments, we would recommend adding effects on watercourses and wetland habitats.	Table 4.1 within the AoS Report now states: 'Effects on ancient woodland, veteran trees and other habitats such as watercourses and wetlands'.

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	flora and fauna)		
Natural England	Appendix B, Chapter 7 (Biodiversity, flora and fauna)	We would also like to see recognition of the need to avoid deterioration and improve ecological status of water bodies in line with the Water Framework Directive.	Table 4.1, Water, within the AoS Report, now includes:  'The need to avoid deterioration and improve ecological status of waterbodies in line with the Water Framework Directive'.  The AoS report identified:  → 'Need to avoid deterioration and improve ecological status of waterbodies in line with the Water Framework Directive'. (Table 4.1).  → 'Article 4.7 would be need to be carried out for each of the schemes. This is because all schemes incorporate an effective barrier to passage in both water and ecological terms which would result in a decrease in waterbody status under the WFD. Project level design would need to determine whether the detrimental impact can be mitigated, offset and where a like for like replacement is not possible, compensation within a wider environmental framework should be acceptable' (Section 6.9.11).  → 'The WFD aims to enhance and maintain good status of all waterbodies, this scheme would involve culverting of around 3km of additional culverts' (Section 7.4.75).
			→ Table 7.3 provide mitigation for significant effects for LHR-NWR in regards to 'Change in status of surface and / or groundwaters through alteration of waterbodies and impacts on water quality /

STAKEHOLDER	FINAL SCOPING REPORT SECTION(S)	STAKEHOLDER COMMENTS	How comment has been addressed within the AoS or reason for not addressing comment.	OR
			quantity through the discharge of contaminants, such as de-ic and hydrocarbons and changes in water resource use'.	er
			→ 'LHR-NWR incorporates an effective barrier to passage in bot water and ecological terms which would result in a decrease is waterbody status under the WFD. Project level design would need to determine whether the detrimental impact can be mitigated, offset and where a like for like replacement is not possible, compensation within a wider environmental frameworkshould be acceptable' (Section 7.4.79).	7
			Appendix A 7, Water, states:	
			'the Water Framework Directive (WFD) (2000/60/EC) has the overarching objective of enabling all water bodies in Europe to attain Good or High Ecological Status' (Section 7.2.3)	)
			→ CAMS 'details how the requirement of the WFD to ensure no ecological deterioration to rivers, will be met' (Section 7.2.18).	
			A WFD assessment will be required to support the proposals, this could demonstrate that the 2021 and 2027 targets can be achieved as well as maintaining the longer term status (including allowance for the potential changes for risk elements such as climate change) of the waterbodies through avoiding at worse minimise the adverse impacts (this would require passing an Article 4.7 test) in terms of:	s
			■ Biological quality	
			<ul> <li>Hydromorphological quality</li> </ul>	
			<ul><li>Physical-chemical quality</li></ul>	
			<ul><li>Chemical quality'</li></ul>	

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			(Section 7.10.3)  7.8.2: 'In terms of water quality, this was assessed using the WFD classification system, considering impacts on protected areas, no deterioration of water body, status and achieving Good status/potential in water bodies (this includes ecological and chemical quality as well as quantitative status)'.
Natural England	Appendix B, Chapter 9 (Landscape)	The baseline information provides a basic overview. We recognise that this is a high level assessment and we would expect a more robust baseline to be developed at the project level assessment stage, including more detailed information on protected landscapes, their distinctive characteristics and special qualities.	Appendix A 12, Landscape, covers the baseline and assessment in more detail.
Natural England	Appendix B, Chapter 9 (Landscape), para 9.3	We had understood that a 15km zone was used to scope impacts on nationally designated landscapes, rather than the 5km referred to in this chapter. There is no reference to protected landscapes in this section which we consider this to be a sigificant ommission. It is important that landscape and visual impacts on protected landscapes are included in the scope of the AoS and relevant information should be included in the baseline.	The NPPF is discussed throughout Sections 12.2.6 - 12.2.11 in regards to landscape, within Appendix A 12 Landscape.  The policy context in relation to nationally protected landscapes is discussed in Section 12.2.2 – 12.2.15. This includes National Parks and Areas of Outstanding Natural Beauty.  A 15km zone has been used in the Landscape Topic Paper for nationally designated landscapes.

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		We do however welcome the recognition that Effects on designated landscapes and their setting, as well as Effects on local landscape and townscape character and quality and Loss of tranquillity and increase in light pollution have been identified as key issues for the AoS.	
Natural England	Appendix B, Chapter 8 (Soil), para 8.1.1	Potential loss of geodiversity is normally considered in relation to the geological conservation impacts of the project i.e. in relation to geological SSSIs and Regionally Important Geological and Geomorphological Sites (RIGS); it is not really clear why this is included under a 'Soils' topic heading? We would advise that a separate 'Geoconservation' topic heading is warranted.	This is due to soils close relationship to geology. As potentially impacts have been covered under the soils topic, it hasn't been necessary to set out a separate topic heading (note that no impacts have been identified in relation to geodiversity).
Natural England	Appendix B, Chapter 8 (Soil), para 8.1.2	Add 'water infiltration and drainage' to last sentence, e.g. Soil sealing prevents the soil from performing other functions such as food and fibre production, water infiltration and drainage or the ecological functions of soil, including storage of carbon and as a habitat.	'water infiltration and drainage' has been added to Section 6.6.2 of Appendix A 6 Soil.
Natural England	Appendix B, Chapter 8	Add new bullet 'Loss through sealing, or other degradation or contamination caused by construction or human activity' (this is	'Loss of soils from sealing, including impact on best and most versatile agricultural land' has been added to Table 4.1, Key

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	(Soil), para 8.2.1	intended to summarise the other key threats to soils described in Defra (2009).	Sustainability issue identified for AoS, with the AoS Report. This issue has also been added to Table 4.2.
Natural England	Appendix B, Chapter 8 (Soil), Box - Key Issues for AoS	2 <sup>nd</sup> Bullet 'those valuable to agriculture' should be replaced by 'impact on best and most versatile agricultural land'	'Loss of soils from sealing, including impact on best and most versatile agricultural land' has been added to Table 4.1, Key Sustainability issue identified for AoS, with the AoS Report.
Natural England	Appendix B, Table 4.1 Key sustainability issues for AoS	For <u>Soil</u> heading <i>'those valuable to agriculture'</i> should be replaced by 'impact on best and most versatile agricultural land' (see other NPS's and/or NPPF para 112 for full policy ref).	'Loss of soils from sealing, including impact on best and most versatile agricultural land' has been added to Table 4.1, Key Sustainability issue identified for AoS, with the AoS Report.
Natural England	Scoping report, Table 5.1, Community	Additional housing could lead to increased recreational disturbance on or adjacent to designated sites. These kinds of consequential impacts need to be considered in the AoS and HRA.	This potential effect has been covered in the HRA Report / Appropriate Assessment. Recreational disturbance has been identified as a potential impact throughout the HRA report. For example, Section 4 addresses the 'Effects of Disturbance' including effects of recreational disturbance.
Natural England	Scoping report, Table 5.1, Community	The loss of or increased demand for recreational facilities is rightly recognised as a key issue and we would highlight the need at the strategic level to consider potential impacts on National Trails, specifically the Thames Path and North Downs Way National Trails. The National Trails website	Table 7.3 of the AoS report, and Sections 5.117 and 5.121 of the NPS state:  'Where green infrastructure is affected, the applicant should aim to ensure the functionality and connectivity of the green infrastructure network is maintained and any necessary works are undertaken, where possible, to mitigate any adverse impact and, where appropriate, to improve that network and other areas of open space,

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		www.nationaltrail.co.uk provides information including contact details for the National Trail Officer. Appropriate mitigation measures should be incorporated for any adverse impacts, particularly those arising from visual and disturbance impacts from aircraft overflight.	including appropriate access to National Trails and other public rights of way'.  'Public rights of way, National Trails and other rights of access to land are important recreational facilities for walkers, cyclists and equestrians. The applicant is expected to take appropriate mitigation measures to address adverse effects on coastal access, National Trails, other public rights of way and open access land and, where appropriate, to consider what opportunities there may be to improve access. In considering revisions to an existing right of way, consideration needs to be given to the use, character, attractiveness and convenience of the right of way'.  Impacts on National Trails (including Thames Path and North Downs Way) have also been reflected in Appendix A 12. There is no mitigation specific to National Trails at this stage although, 12.10 states:  'This topic based assessment identifies the need for more detailed landscape and visual impact assessment at the project level EIA stage as part of the iterative process to inform the development of the detailed design. At this stage site specific surveys can be undertaken based on more detailed information such as proposed building heights.  The detailed assessment should take account of information on flight paths, which have not been assessed at this stage because this detail is not available, but may have associated landscape, visual and tranquillity impacts'.

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Natural England	Scoping report, Table 5.1, Community	At the EIA stage, impacts on access land, public open land, rights of way and coastal access routes in the vicinity of the development will also need to be considered. At this later stage we would recommend reference to the relevant Right of Way Improvement Plans (ROWIP) to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced. Relevant aspects of local authority green infrastructure strategies should be considered where appropriate.	Recreational impacts are covered at a generic level under both Communities (Appendix A 1) and Landscape (Appendix A 12) Topics in the AoS.  Agree that individual impacts will need to be considered at EIA.
Natural England		The Habitats Regulations Assessment undertaken as part of the AoS will need to feed into and inform the AoS assessment of biodiversity as set out at table 2.3.	The HRAs relationship to the AoS is explained in Table 3.6 of the AoS report.  The HRA has feed into Appendix A 5 Biodiversity.
Natural England		Further information on Sites of Special Scientific Interest (SSSIs) and their special interest features can be found at <a href="https://www.magic.gov">www.magic.gov</a> . The AoS should include an assessment of the direct and indirect effects of the development on the features of special interest supported by these sites and should identify such mitigation measures as may be required in order to avoid, minimise or reduce any adverse significant effects.	SSSIs have been identified throughout Appendix A 5 Biodiversity and the HRA.  Section 6.7.4 of the AoS Report identified the limitation of this assessment, stating:  'All three schemes have the potential to result in likely significant effects to Site of Special Scientific Interest (SSSI). The assessment of impacts to SSSI at this stage is not comprehensive and will require much more detailed consideration at the detailed design stage. This would require seasonal habitat and species surveys,

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			land access and detailed development plans so that direct and indirect effects are better understood.'
			Section 6.7.6 to 6.7.10 summary the many impacts on SSSIs as a result of each scheme.
			Section 6.8.1 of the AoS Report identified that no significant impacts on Geological SSSIs (as opposed to those designated for nature conservation) are expected for any of the expansion schemes.
			Mitigation for SSSIs is identified within Table 7.3 of the AoS Report.

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Natural England		Based on our analysis of work undertaken by the Airports Commission in its sustainability appraisal, we would highlight the following impacts as needing further consideration within the AoS:  disturbance impacts from increased bird control activities and aircraft overflight on the South West London Waterbodies Special Protection Area and Ramsar site (SWLW SPA/Ramsar), including any functionally linked habitats (for Heathrow). The site is designated for internationally important numbers of gadwall and shoveler. We would advise making use of the BTO Wetland Bird Survey data as well as data collected by airports on bird activity. Both sources could make a useful contribution to the baseline and ongoing monitoring.	Appendix A 5, Biodiversity, states the following in regards to the comment:  Section 5.6.14 and 5.6.22: 'The SWLW SPA and Ramsar site is located on the scheme boundary [LHR-ENR and LHR-NWR]. This site supports internationally important numbers of the ducks gadwall and shoveler (the qualifying interest species of the SPA)'.  Section 5.7.14: 'It was identified that there are birdstrike management issues for LHR-ENR associated with the nearby complex of open water bodies. The western threshold of the extended runway will be significantly closer to the complex of reservoirs and gravel pits to the west of the airport including sites designated as part of the SWLW SPA and Ramsar site. The closer proximity of the runway and increased air traffic is likely to result in an increased strike risk, and a corresponding requirement for an increase in bird management and control activities is anticipated. Methods of deterring / scaring and controlling bird species potentially hazardous to aviation operations could potentially have an adverse effect on non-target species and biodiversity'.  Section 5.9.37 and 5.9.67 [LHR-ENR and LHR-NWR]: 'For SWLW the following additional likely significant effects were identified:   Surface access proposals for the scheme may involve land take and disturbance in the southern area, primarily along the existing M25 motorway corridor. There is potential for surface access routes to overlap with the site boundaries that include SSSI components of the SPA;

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			<b>→</b>	SWLW is located adjacent to the scheme site. Whilst some existing baseline habituation or tolerance of the interest features to disturbance effects is possible, it cannot be assumed that additional levels of disturbance would not result in a cumulative impacts to the interest features;
			$\rightarrow$	The scheme has the potential to result in impacts to hydrological systems such as the River Colne and wetland environments adjacent to the SPA / Ramsar that support the interest features; and
			$\rightarrow$	Increased levels of bird scaring/control as part of birdstrike risk management measures could cause effects to other non-target waterbird species including the SPA/Ramsar interest features.'

Section 5.9.45 and 5.9.74 [LHR-ENR and LHR-NWR]: 'With regard to disturbance the AA concluded that there is insufficient evidence available at this time to indicate that the existing airport operations at Heathrow result in adverse disturbance effects to the SWLW SPA. Furthermore there has been a degree of assumption from the information submitted for the schemes that the interest features are tolerant or habituated to these effects. However any tolerance or habituation is unsubstantiated and cannot be assumed to apply to additional cumulative disturbance from increased airport operations and the associated disturbance arising from the schemes'.

Section 5.9.46 and 5.9.75 [LHR-ENR and LHR-NWR]: 'This is further compounded by the existing levels of recreational disturbance which are considered to be a significant issue for the SPA and this baseline must be considered against any further disturbance effects cumulatively'.

Section 5.9.47 and 5.9.76 [LHR-ENR and LHR-NWR]: 'Cumulatively these effects are difficult to differentiate, however it is considered likely that the existing levels of disturbance pressure on the SWLW SPA may have a limiting factor to the integrity of the site. There is uncertainty surrounding flight paths and flight heights for the options at this time and equally a general lack of broader scientific understanding of the effects of aviation disturbance to waterbirds. The precautionary principle therefore requires that any further disturbance effects would be likely to result in cumulative disturbance to the interest features of the site and as such an adverse effect to the sites integrity'.

Section 5.9.53 and 5.9.83 [LHR-ENR and LHR-NWR]: 'Increased levels of bird scaring/control as part of birdstrike risk management measures could cause effects to other non-target waterbird species including the SPA interest features'.

Section 5.9.105: 'There are birdstrike management issues for LHR-ENR associated with the nearby complex of open water bodies. The

western threshold of the extended runway will be significantly closer to the complex of reservoirs and gravel pits to the west of the airport including sites designated as part of the SWLW SPA and Ramsar site. The closer proximity of the runway and increased air traffic is likely to result in an increased strike risk, and a corresponding requirement for an increase in bird management and control activities is anticipated'.

Section 5.9.106: 'Methods of deterring / scaring and controlling bird species potentially hazardous to aviation operations could potentially have an adverse effect on non-target species and biodiversity including those not listed on the designation interest features'.

Mitigation is identified within Section 5.11.

Addressed within AoS Report, Section:

6.7.21: 'There are birdstrike management issues for the LHR-ENR and LHR-NWR options associated with the nearby complex of open water bodies. The western threshold of the extended runway will be significantly closer to the complex of reservoirs and gravel pits to the west of the airport (including sites designated as part of the SWLW SPA and Ramsar site). The closer proximity of the runway and increased air traffic is likely to result in an increased strike risk, and a corresponding requirement for an increase in bird management and control activities is anticipated. Methods of deterring/scaring and controlling bird species potentially hazardous to aviation operations could potentially have an adverse effect on non-target species and biodiversity including those not listed on the designation interest features'.

This is also addressed with the HRA.

BTO WeBS data is used in the HRA AA. This has been summarised in Tables 4.3 and 4.4.

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Natural England		Based on our analysis of work undertaken by the Airports Commission in its sustainability appraisal, we would highlight the following impacts as needing further consideration within the AoS:	Addressed within AoS Report, Appendix A 5 and HRA.  AoS Question 14 is 'Will it increase the exposure of wildlife to transport noise, air pollution, and water pollution?'  Appendix A 5 states:  Table 5.1, Interaction of the Biodiversity topic with other topics: 'Changes in air quality can impact biodiversity receptors via deposition, in particular nitrogen deposition'.  5.8.1: 'During operation effects would include presence of new infrastructure, and indirect effects from aspects such as noise and air quality'.  5.9.1 [LGW-2R]: 'These potential effects are principally in relation to supporting habitat loss, cumulative air quality impacts and incombination impacts'.  5.9.2 [LGW-2R]: 'For these three sites [Mole Gap to Reigate Escarpment SAC, Ashdown Forest SAC and Ashdown Forest SPA] the potential for likely significant effects have been identified with regard to air quality impacts associated with increased traffic flow, and direct and indirect impacts upon supporting habitat as a result of the surface access strategy'.  Section 5.9.25, 5.9.58 and 5.9.87 [all schemes] identifies SSSI's site with the potential for air quality impacts.  Section 5.9.26: 'The potential impacts could occur both alone and in-combination. Air and water quality changes could result in

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			adverse effects to the habitats and species interest features of these sites. Impacts may also arise cumulative with other major infrastructure or development set out in plans, policies or programmes listed in Table 6.4 of the AoS'
			Section 5.9.33 [LHR-ENR]: 'With the exception of SWLW, the potential likely significant effects have been identified with regard to air quality impacts associated with increased traffic flow, and direct and indirect impacts upon supporting habitat as a result of the surface access strategy. Cumulative effects are also expected to arise due to additional sources of pollution from major infrastructure projects being carried out in support of plans, policies or programmes'.
			Section 5.9.36: 'In the absence of evidence to the contrary and with recourse to the precautionary principle, it is considered reasonably likely that the air quality impacts of scheme will contribute additional NOx-related adverse effects on the integrity of the European site'
			Section 5.9.59 and 5.9.88 [LHR-ENR and LHR-NWR]: 'Air and water quality changes could result in adverse effects to the habitats and species interest features of these sites. In addition to the legal protection afforded to SSSI under the WCA, the NPPF deters development'.
			Section 5.9.63 [LHR-NWR]: 'With the exception of SWLW, the potential likely significant effects have been identified with regard to air quality impacts associated with increased traffic flow, and direct and indirect impacts upon supporting habitat as a result of the surface access strategy both alone and in-combination. Eight European sites are located in immediate proximity (< 200m) to major roads leading to Heathrow. All sites are assessed as

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			vulnerable to nitrogen deposition and are currently in exceedance (or in the case of SWLW, are close to exceedance). Further investigations are required with regard to the effects of nitrogen deposition on the qualifying features of the sites in order to quantify any changes resulting from the scheme'.  Section 5.9.65 [LHR-NWR]: 'In the absence of evidence to the contrary and with recourse to the precautionary principle, it is considered reasonably likely that the air quality impacts of the scheme will contribute additional NOx-related adverse effects on the integrity of the European site'.  Section 5.9.97 [LGW-2R]: 'The scheme could result in air quality impacts on ancient woodland blocks adjacent to affected roads. Natural England's standing advice on ancient woodland and veteran
			trees highlights the need for developers to consider air quality impacts on ancient woodland.  Section 5.9.98 [LGW-2R, LHR-ENR and LHR-NWR]: 'In addition to the direct and indirect effects associated with airport expansion the scheme may have cumulative effects with other development proposed in plans, policies or programmes set out in Table 6.4 of the AoS Report. These effects may arise as a consequence of decreasing air quality due to increasing traffic associated with new development or major infrastructure, or due to the cumulative effect on sites and due to loss of habitat'.  Mitigation for air quality impacts is identified in Section 5.11.  Section 5.12, Conclusion, reiterates the above points.

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			Section 7 of the HRA addresses the 'Effects of Changes to Air Quality' as a result of both Airport related road transport (vehicle access including car parking) and Airport activities (such as aircraft movements, heat & power generation) as well as non-Airport related road transport and other emissions on European sites.

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Natural England		Based on our analysis of work undertaken by the Airports Commission in its sustainability appraisal, we would highlight the following impacts as needing further consideration within the AoS:   direct and indirect impacts on Staines Moor Site of Special Scientific Interest (SSSI) and mitigation relating to the River Colne alterations to avoid this (for Heathrow).	The AoS Report addresses this point within the following Sections:  6.7.5: 'The LHR-ENR scheme would result in a direct impact due to land take from the Staines Moor SSSI from the ENR proposals, comprising the loss of Unit 1 (Poyle Meadow, 8.74ha) of the SSSI. Based on scenarios presented in the option there is potential for indirect impacts on Unit 12 of Staines Moor SSSI from works affecting the River Colne, this could lead to the loss of 40ha of the SSSI.  6.7.8: 'The LHR-ENR scheme has the potential for indirect impacts on the following SSSIs from air and water quality changes; Staines Moor SSSI, Wraysbury Reservoir SSSI, Wraysbury No.1 Gravel Pit SSSI, Wraysbury & Hythe End Gravel Pits SSSI and Kempton Park Reservoirs SSSI The potential impacts could occur both alone and in-combination. Air and water quality changes could result in adverse effects to the habitats and species interest features of these sites'.  6.7.6: 'The LHR-NWR option has the potential for indirect impacts on the following SSSIs from air and water quality changes; Staines Moor SSSI, Wraysbury Reservoir SSSI, Wraysbury No.1 Gravel Pit SSSI, Wraysbury & Hythe End Gravel Pits SSSI and Kempton Park Reservoirs SSSI. The potential impacts could occur both alone and in-combination. Air and water quality changes could result in adverse effects to the habitats and species interest features of these sites'.  6.7.10: 'The LHR-NWR scheme also has the potential for indirect impacts on the following SSSIs from air and water quality changes; Staines Moor SSSI, Wraysbury Reservoir SSSI, Wraysbury No.1

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			Gravel Pit SSSI, Wraysbury and Hythe End Gravel Pits SSSI, and Kempton Park Reservoirs SSSI. The potential impacts could occur both alone and in-combination. Air and water quality changes could result in adverse effects to the habitats and species interest features of these sites'.

- 7.4.33: 'The maximum predicted annual mean concentrations of nitrogen oxides and nitrogen deposition fluxes was calculated for Southwest London Waterbodies SPA and Ramsar and it was identified that the LHR–NWR scheme would result in additional deposition. The greatest change being at Staines Moor: 1.2 kgN/ha/yr (representing an increase of 11.8%)'
- 7.4.38. 'There is potential for surface access routes to overlap with the boundaries of sites that include SSSI components of the SWLW SPA. Applying a buffer zone of 100m as a potential area of impact around the proposed surface access routes has identified some potential overlap with the boundaries of sites that include Staines Moor SSSI and Wraysbury Reservoir SSSI (and therefore the SW London Waterbodies SPA)'.
- 7.4.74: 'There is potential for hydrological conditions to be altered on Staines Moor SSSI from diversion of the River Colne and this would need to be addressed during detailed design'.

The Appendix A 5 Biodiversity addresses this point within the following Sections:

Table 5.3, impacts and compensation summary.

5.7.17 [LHR-NWR]: 'It has been identified that there are potential impacts to Staines Moor SSSI, specifically the alluvial meadows through which the River Colne flows. It is acknowledged that significant changes to a number of water courses, including the River Colne, would need to be made to accommodate the proposal and that these could have potentially significant impacts to the status of the SSSI, through alterations to the hydrological conditions currently supporting the SSSI. The conclusions drawn by the scheme promoter on the potential impacts are that they will be avoided through the design of channel diversions and by minimising culverting requirements, and they state that flow regimes will be maintained to avoid impacts to ecology. As long as this is achieved through the detailed design of this element of the proposal, and that

the water quality, volume and flow rate are maintained (or not adversely altered), then Jacobs agrees that impacts to the SSSI should be avoided.

5.9.24: 'The LHR-ENR scheme would result in a direct impact due to land take from the Staines Moor, comprising the loss of Unit 1 (Poyle Meadow, 8.74ha) of the SSSI'.

5.9.41 [LHR-ENR]: Based on scenarios presented in the scheme there is potential for indirect impacts on Unit 12 of Staines Moor SSSI from works affecting the River Colne, this could lead to the loss of 40ha of the SSSI'.

5.9.70 [LHR-NWR]: 'Surface access proposals for the scheme may involve land take and disturbance in the southern area of the scheme, primarily along the existing M25 motorway corridor. There is potential for surface access routes to overlap with the boundaries of sites that include SSSI components of the SPA. Applying a buffer zone of 100m as a potential area of impact around the proposed surface access routes has identified some potential overlap with the boundaries of sites that include Staines Moor SSSI and Wraysbury Reservoir SSSI (and therefore the SWLW SPA)'.

5.11.36 [LHR-ENR]: 'Indirect impacts to Unit 12 of Staines Moor SSSI from works affecting the River Colne could be avoided through the design of channel diversions and minimising culverting requirements. Through maintaining water quality, volume and flow rate (or not adversely affected), then impacts to the SSSI, Management Unit 12, downstream should be avoided'.

5.11.45 [LHR-ENR]: 'There is the potential for further direct land take due to new southern access road through Units 12 and 13 on the western side of Staines Moor SSSI, or alternate dualling of A3044 road which runs between units 7 and 8 of the SSSI (these units are also part of the SWLW SPA) which could be further clarified during detailed design'.

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			5.11.69 [LHR-NWR]: 'Direct land take from internationally and nationally designated sites can be avoided by the NWR proposals. This is dependent on the alignment of surface access routes along the M25 corridor being designed and constructed to ensure no direct impacts on Staines Moor SSSI and Wraysbury Reservoir SSSI (and therefore on the SWLW SPA and Ramsar site (SWLW SPA/Ramsar), of which Wraysbury Reservoir SSSI is a component)'.  5.11.70 [LHR-NWR]: 'There is the potential for significant impacts to the Staines Moor SSSI due to changes to the River Colne, on which the alluvial meadows, for which the SSSI is in-part designated, depend. Mitigation will be essential to avoid impacts on the SSSI'.
Natural England		Based on our analysis of work undertaken by the Airports Commission in its sustainability appraisal, we would highlight the following impacts as needing further consideration within the AoS:  impacts on ancient woodlands and their associated habitats and networks, with recognition of their status as irreplaceable habitats and that avoidance of loss should therefore be the principal approach. The Gatwick proposals include 70ha of woodland loss and 50km of hedgerow. A key issue here will be consideration of the landscape-scale impacts on the functioning of the ecological network.	AoS Objective 8 states 'To conserve and enhance undesignated habitats, species, valuable ecological networks and ecosystem functionality'.  Appendix A 5, Biodiversity, states:  'The NPPF states that  5.9.93 planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss;  5.9.94 Further Natural England's standing advice on ancient woodland and veteran trees identifies that the nature of ancient woodland and veteran trees means that loss or damage cannot

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			simply be rectified by mitigation and compensation measures. Therefore, where measures seek to address issues of loss or deterioration of ancient woodland or veteran trees Natural England considers that these should be issues for consideration only after it has been judged that the wider benefits of a proposed development clearly outweigh the loss or damage of ancient woodland which is as per the NPPF above.'
			Section 5.11.27: 'The irreplaceable nature of ancient woodland and veteran trees means that loss or damage cannot simply be rectified by mitigation and compensation measures. Therefore, where measures seek to address issues of loss or deterioration of ancient woodland or veteran trees, these should be issues for consideration only after it has been judged that the wider benefits of a proposed development clearly outweigh the loss or damage of ancient woodland. Ancient woodland is an irreplaceable habitat which cannot be re-created, and that due to its irreplaceability, like for like compensation or biodiversity offsetting is not applicable to ancient woodland'.
			Table 7.3 of the AoS report states:  'The Draft NPS also acknowledges the importance of ancient woodland and veteran tress (5.102) in addition to opportunities for building in beneficial biodiversity as part of good design (5.103)'.

Landscape-scale impacts and ecological networks are considered in Appendix A 5 Biodiversity, in the following sections:

5.9.95: 'The existing habitat comprises of woodland of various sizes with a series of interconnecting hedgerows-which are also a priority habitat. The existence of the network of hedgerows joining various woodland blocks provides a functioning habitat throughout this landscape. The loss of such a large extent of this functioning habitat would therefore occur and require consideration on a landscape scale. Woodlands and hedgerows provide habitat for a diverse range of species and ecological networks via the hedgerows between the woodland blocks'.

5.9.102 / 5.9.110 / 5.9.118: 'It is considered that significant negative impacts to habitats, species, valuable ecological networks and ecosystem function would occur as a result of the LGW-2RW/LH-ENR/LH-NWR schemes'.

5.11.28: 'The location, quality, ecological function and ongoing long term management of woodland creation to compensate for loss of ancient woodland will need detailed consideration. A strategic 'landscape scale' mitigation and compensation strategy for the LGW-2R scheme that reflects the significant losses of ancient woodland and hedgerows could be undertaken'.

5.13.13: 'LGW-2R would result in loss of lowland mixed deciduous woodland, including significant loss of ancient woodland; hedgerow including ancient hedgerow; rivers and brooks including canalised or conduited channel; and ponds. The existing habitat comprises of woodland of various sizes with a series of interconnecting hedgerows-which are also a priority habitat. The existence of the network of hedgerows joining various woodland blocks provides a functioning habitat throughout this landscape. The loss of such a large extent of this functioning habitat would therefore occur and require consideration on a landscape scale'.

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Natural England		Based on our analysis of work undertaken by the Airports Commission in its sustainability appraisal, we would highlight the following impacts as needing further consideration within the AoS:  impacts on Bechstein's bats (for Gatwick) through the loss and fragmentation of woodlands and hedgerows. Bechstein's are one of the Annex II qualifying species present at Mole Gap and Reigate Escarpment SAC and are also found at Ebernoe Common SAC and The Mens SAC.	This is addressed in the following sections within Appendix A 5:  5.6.12: 'The Low Weald National Character Area (NCA) in which the option is proposed is amongst the most important areas for bats in terms of species diversity including internationally important populations of Bechstein's associated with designated sites'.  5.9.16 [LGW-2R]: 'In the case of Bechsteins bat, the habitat losses occur at a distance from the designated sites within the known foraging range (typically 3km). Further more recent findings for the HS2 development have identified foraging distances of up to 7km. Habitat loss and fragmentation of woodlands and hedgerows has the potential to impact this specie's.  5.9.18 [LGW-2R]: 'Retention of ancient woodland is considered essential for the long term conservation of Bechstein's bat. Accordingly any removal of such habitat that is likely to form supporting function to the SAC in terms of foraging and commuting could reasonably be expected to result in an adverse effect to the integrity of the population and as such the integrity of the site'.  5.9.100 [LGW-2R]: 'The Low Weald NCA in which the scheme is proposed is amongst the most important areas for bats in terms of species diversity including internationally important populations of Bechstein's associated with designated sites. The Bechstein's bat is one of the rarest of our mammals and a UK BAP priority species. Bechstein's bats receive full statutory protection as a European Protected Species under the Habitats Regulations. The habitat losses occur at a distance from the designated sites (10km) that exceeds the current known foraging of Bechstein's (typically 3km) although more recent findings for the HS2 development have

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			identified foraging distances of up to 7km. Fragmentation of ancient woodlands and hedgerows also has the potential to impact this species'.  This issue is also addressed in Sections 6.7.17 within the AoS Report.
Natural England	Appraisal questions 12 and 13	We note that ancient woodland is not specifically referred to in table 4.1, but it is identified as a key issue in Table 5.1. Ancient woodlands are given strong protection in the NPPF and the irreplaceable nature of ancient woodland and veteran trees needs to be explicit at all stages of the AoS. We recommend that specific reference is made to ancient woodland in appraisal questions 12 and 13 to ensure that they are fully considered in the AoS. This is an important consideration for the Gatwick proposals, in particular.	Appendix A 5, Biodiversity, states:  'The NPPF states that  5.9.93 planning permission should be refused for development

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			clearly outweigh the loss or damage of ancient woodland which is as per the NPPF above.'  Section 5.11.27: 'The irreplaceable nature of ancient woodland and veteran trees means that loss or damage cannot simply be rectified by mitigation and compensation measures. Therefore, where measures seek to address issues of loss or deterioration of ancient woodland or veteran trees, these should be issues for consideration only after it has been judged that the wider benefits of a proposed development clearly outweigh the loss or damage of ancient woodland. Ancient woodland is an irreplaceable habitat which cannot be re-created, and that due to its irreplaceability, like for like compensation or biodiversity offsetting is not applicable to ancient woodland'.  Table 7.3 of the AoS report states:  'The Draft NPS also acknowledges the importance of ancient woodland and veteran tress (5.102) in addition to opportunities for building in beneficial biodiversity as part of good design (5.103)'.  Appraisal question have not been changed to identify any particular habitat type, however, ancient woodland has been fully considered.
Natural England	Table 5.1, Landscape	All three options have the potential to impact on nationally protected landscapes. As suggested above the AoS should clearly set out the policy context in relation to nationally protected landscapes including National Parks, and Areas of Outstanding Natural Beauty as set out in in paragraph 115 of the	The NPPF is discussed throughout Sections 12.2.6 - 12.2.11 in regards to landscape, within Appendix A 12 Landscape.

STAKEHOLDI	FINAL SCOPING REPORT SECTION(S)	STAKEHOLDER COMMENTS	HOW COMMENT HAS BEEN ADDRESSED WITHIN THE AOS OR REASON FOR NOT ADDRESSING COMMENT.
		National Planning Policy Framework. The NPPF states that "great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and AONBs which have the highest level of protection in relation to landscape and scenic beauty." 28	The policy context in relation to nationally protected landscapes is discussed in Section 12.2.2 – 12.2.15. This includes National Parks and Areas of Outstanding Natural Beauty. For example, Section 12.2.7 states: 'The NPPF refers to valued landscapes and in particular those protected by designations such as National Parks and AONBs, although it is less specific on areas outside these designations. It states, "Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and AONB, which have the highest status of protection in relation to landscape and scenic beauty." With respect to sustainable development the NPPF states, "Pursuing sustainable development involves seeking positive improvements in the quality of the built, natural and historic environment, as well as people's quality of life".'

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Natural England	Scoping report, Table 5.1, Landscape	It will be important to undertake a full landscape and visual impact assessment at the project level including assessing views from the protected landscapes involving sitebased assessments from publically accessible viewpoints from the designated landscapes towards the development site. This would also enable the need for screening or other mitigation to be assessed and subsequently designed. Natural England supports the use of <i>Guidelines for Landscape and Visual Impact Assessment</i> , 2013 (3rd edition). The methodology set out is almost universally used for landscape and visual impact assessment. We encourage the use of Landscape Character Assessment (LCA) which provides a sound basis for guiding, informing and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed.	Section 12.11.5 of Appendix A 12, Landscape, states: 'Published landscape character assessment at regional and local level, and AONB Management Plans would inform the project level assessment'  Section 12.12.24 furthers this, stating; 'The assessment should be undertaken following guidance and the methodology provided in the Guidelines for Landscape and Visual Impact Assessment <sup>29</sup> . The use of Landscape Character Assessment is recommended in order to provide a sound basis for guiding, informing and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed'.

<sup>&</sup>lt;sup>29</sup> Landscape Institute and Institute of Environmental Management and Assessment, 2013. Guidelines for Landscape and Visual Impact Assessment (Third Edition), Routledge; Oxon

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Natural England	Scoping report, Table 5.1, Landscape	practicable, and without a significant detrimental impact on efficient aircraft operations or noise impact on populated	This comment is addressed within Appendix A 12, Section 12.12.25, which states:  'One of the key impacts on protected landscapes will be those arising from changes to flight paths and the potential effects on tranquillity. It will also be important to consider cumulative noise impacts in these areas and to look at the potential for mitigation such as respite for designated landscapes. This will depend on detailed airspace design. Reducing or avoiding flight paths below 7000 feet over protected landscapes would be in line with Civil Aviation Authority guidance which recommends that, "where practicable, and without a significant detrimental impact on efficient aircraft operations or noise impact on populated areas, airspace routes below 7,000 feet (amsl) should, where possible, be avoided over Areas of Outstanding Natural Beauty (AONB) and National Parks".'
Natural England	Scoping report, Table	The most significant effects are going to be on local landscapes which are not designated. It will be for local planning authorities and others to advise on the full Landscape and Visual	

<sup>&</sup>lt;sup>30</sup> Department for Transport, 2014. *Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Function*. [online] Accessed 26/01/2017.

STAKEHOLDER	FINAL SCOPING REPORT SECTION(S)	STAKEHOLDER COMMENTS	How comment has been addressed within the AoS or reason for not addressing comment.
	5.1, Landscape	Impact Assessment. It would be helpful for the AoS to set this out.	'From the high-level assessment undertaken it can be concluded that the most significant effects will be on undesignated local landscapes due to their close proximity to the proposed development. In this context consultation will be required with the local planning authorities and other stakeholders to determine the full scope of the landscape and visual impact assessment to be undertaken'
Natural England	Scoping report, Table 5.1, Water	We would advise that the key issues and appraisal objectives reflect the requirements of the Water Framework Directive. The importance of the Water Framework Directive for biodiversity should be recognised as well as its importance for water quality. Clarification is needed on where ecological impacts in relation to the water environment will be considered and whether these will be considered in the biodiversity topic or the water topic.	Key sustainability issues idenitified for the AoS under the water topic in Table 4.1 include: 'Effects upon the chemical and ecological quality of waterbodies which are at risk from physical alteration, discharges, run-off and infiltration from diverse sources, and abstraction reducing dilution' and 'need to avoid deterioration and improve ecological status of waterbodies in line with the Water Framework Directive'.  The key issues Identified in Table 4.2 of the AoS Report reflect the requirements of the WFD. The issue include:  'Impacts on 'good status' and 'potential' water quality and ecological status under the Water Framework Directive'; and  'Potential for over-consumption of available water resources'.  Ecology impacts in relation to the water environment are cover in both the biodiversity section and the water section (in regards to WFD).

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Natural England	Scoping report, Table 5.1, Water	Appraisal objective 11 'To protect the quality of surface and ground water and use water resources efficiently' needs to ensure that it reflects the requirements of the Water Framework Directive River Basin Management Plans and promotes sustainable use of water resources including surface and groundwater. Development must not cause deterioration of water body. However WFD is not just about 'no deterioration', but about whether the proposal will affect good surface water status or good ecological potential and good surface water chemical status and good chemical and quantitative status for groundwater. This links closely with the biodiversity topic, where the impacts on the ecology of designated water bodies will be a key consideration.	Key sustainability issues identified for the AoS under the water topic in Table 4.1 include: 'Effects upon the chemical and ecological quality of waterbodies which are at risk from physical alteration, discharges, run-off and infiltration from diverse sources, and abstraction reducing dilution' and 'need to avoid deterioration and improve ecological status of waterbodies in line with the Water Framework Directive'.  The need so consider deterioration in regards to the WFD is stated in Section 6.9.10:  'The assessment has found that all three of the schemes would result in deterioration of the water environment particularly in terms of the WFD, in which all schemes would be required to progress through the Article 4.7 (of the WFD) route which requires a case to be proven that any environmental damage is outweighed by a greater public need (for an airport development)'.

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			Appendix A 7 Water identified that
			'the Water Framework Directive (WFD) (2000/60/EC) has the overarching objective of enabling all water bodies in Europe to attain Good or High Ecological Status' (Section 7.2.3)
			CAMS 'details how the requirement of the WFD to ensure no ecological deterioration to rivers, will be met (Section 7.2.18).
			'The development proposals should seek to pursue an exemplar approach to proposed mitigation and enhancement measures, in particular with regards to meeting Water Framework Directive objectives'. (Section 7.10.2)
			'A WFD assessment will be required to support the proposals, this could demonstrate that the 2021 and 2027 targets can be achieved as well as maintaining the longer term status (including allowance for the potential changes for risk elements such as climate change) of the waterbodies through avoiding or at worse minimise the adverse impacts (this would require passing an Article 4.7 test) in terms of:
			→ Biological quality
			→ Hydromorphological quality
			→ Physical-chemical quality
			→ Chemical quality'
			(Section 7.10.3)

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Natural England	Scoping report, Table 5.1, Water	This objective should reflect an aspiration for the 'sustainable use of water'.	AoS Objective has been updated to state:  'To protect the quality of surface and ground waters, and use water resources sustainably'
Natural England	Scoping report, Table 5.1, Water	Further planning and design work is needed to ensure that environmental standards are achieved with regard to the risks of surface water containing contaminants from the extended hard standing areas entering watercourses.	Table 7.3 identifies 'Change in status of surface and/or groundwaters through alteration of waterbodies and impacts on water quality/quantity through the discharge of contaminants, such as de-icer and hydrocarbons and changes in water resource use' as a significant effect. This table then provides mitigation and the residual effect  Appendix A 5 also identifies that 'there is a High probability of runoff containing some contaminants'. The Appendix provide detail on mitigation and notes that:  'In all three instances it is recognised (from other case studies and prior experience) that (for example) despite mitigation at airports, contaminants such as de-icers do reach receiving watercourses at certain times as no water quality treatment solution is 100% effective. Depending on quantity and frequency of such discharges there is a potential for a negative residual effect on WFD physicochemical status despite mitigation commitments. Under such conditions it may be necessary to offset the deterioration in quality with quantitative improvement measures. The impact is such that it is likely that the impact will be required to progress through the Article 4.7 of the WFD route' (Section 7.10.6).

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Natural England	Scoping report, Table 5.1, Climatic factors	of climate change adaptation within the Water topic. The vulnerability and adaptability of airport infrastructure to impacts of future climate change is an important consideration. However, we recommend that this is a cross cutting theme as it will affect other topic areas as well as water e.g. biodiversity, air quality.	Climate change has been identified as a cross cutting theme in Section 4.5.4 of the AoS Report, Stating:  'Adaptation to the effects of climate change including water scarcity and flooding has been assessed within the water topic. Mitigating the effects of climate change, including minimising greenhouse gas emissions and in particular, carbon, has been assessed in the Carbon topic. In addition, topics have taken into account the effects of climate change as part of future baseline and issues. For example, biodiversity considers the effects of climate change on ecosystems such as species adaptation and composition'.  Appendix A 5, Biodiversity, Section 5.6.30 and 5.6.31 outlined that climate change could lead to:  'Overall, climate change could lead to:  Changes in phenology (including changes in the timings of seasonal events causing loss of synchronicity and increased competitive advantage for some species at the expense of others);  Shifts in suitable climate conditions for individual species leading to change in species distribution, abundance and range;  Changes in the community structure and ecosystem function of habitats which species occupy;  Changes to the composition and structure of plant and animal communities (including arrival of non-natives, loss of native species and increase in pest species);

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			Changes to habitats and ecosystems, such as altered water regimes, increased rates of decomposition in bogs and higher growth rates in forests; and
			Loss of physical space due to sea level rise and increased storminess.
			Climate change effects are compounded by the influences of population growth and the built environment that increasing populations generate. Pressures for undeveloped land are likely to be greater than ever before and this poses a threat to those areas of non-designated land that fulfil so many valuable functions to ecosystems. Increasingly water resources will need to be safeguarded and managed to maximum efficiency.'
			Section 5.9.96 states that: 'Loss, severance and fragmentation of woodland and / or hedgerows require consideration both directly and indirectly. The direct loss of habitat requires consideration on the remaining habitat's connectivity, quality (via pollution and fragmentation) and robustness. This affects the habitat's resilience into the future including the potential effects of climate change and species abilities to absorb future pressures on the landscape'.
			Section 5.11.19 states: 'Good green infrastructure can produce a strategic and linked, multifunctional network of spaces with benefits for people and wildlife. Furthermore it can be developed to include sustainable features for the development by making it resilient to the effects of climate change and enabling authorities to meet their duty to conserve biodiversity under the NERC Act 2006'.
			Section 2.3.7 identifies the general assessment principals set out in the Draft NPS, which includes:

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			→ 'Climate change adaptation – The scheme will need to consider hotter, drier summers and warmer, wetter winters. There is potentially an increased risk of flooding, drought, heatwaves, intense rainfall events and other extreme events such as storms. The scheme will need to take into account climate change projections and adaptation measures will be required, including green infrastructure'.Climate Change is also set out as a topic for mitigation and decision
			making in Section 2.3.8.
Natural England	Scoping report, Table 5.1, Climatic factors	The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of	This Strategy has been considered within Appendix A 5 Biodiversity, Sections 5.2.26-5.2.28. Appendix A 5, Biodiversity, Section 5.6.30 and 5.6.31 outlined that climate change could lead to:
		climate change. The AoS should reflect these	'Overall, climate change could lead to:
		principles and identify how the effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained.	Changes in phenology (including changes in the timings of seasonal events causing loss of synchronicity and increased competitive advantage for some species at the expense of others);
			→ Shifts in suitable climate conditions for individual species leading to change in species distribution, abundance and range;
			→ Changes in the community structure and ecosystem function of habitats which species occupy;
			<ul> <li>Changes to the composition and structure of plant and animal communities (including arrival of non-natives, loss of native species and increase in pest species);</li> </ul>
			Changes to habitats and ecosystems, such as altered water regimes, increased rates of decomposition in bogs and higher growth rates in forests; and

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			→ Loss of physical space due to sea level rise and increased storminess.
			Climate change effects are compounded by the influences of population growth and the built environment that increasing populations generate. Pressures for undeveloped land are likely to be greater than ever before and this poses a threat to those areas of non-designated land that fulfil so many valuable functions to ecosystems. Increasingly water resources will need to be safeguarded and managed to maximum efficiency.'
			Section 5.9.96 states that: 'Loss, severance and fragmentation of woodland and / or hedgerows require consideration both directly and indirectly. The direct loss of habitat requires consideration on the remaining habitat's connectivity, quality (via pollution and fragmentation) and robustness. This affects the habitat's resilience into the future including the potential effects of climate change and species abilities to absorb future pressures on the landscape'.
			Section 5.11.19 states: 'Good green infrastructure can produce a strategic and linked, multifunctional network of spaces with benefits for people and wildlife. Furthermore it can be developed to include sustainable features for the development by making it resilient to the effects of climate change and enabling authorities to meet their duty to conserve biodiversity under the NERC Act 2006'.
Natural England	Scoping report, Table 5.1, Climatic factors	The NPPF requires that the planning system should contribute to the enhancement of the natural environment 'by establishing coherent ecological networks that are more resilient to current and future pressures' (NPPF Para	Section 5.11.1 of Appendix A 5 Biodiversity includes the following:

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		109), which should be demonstrated through the AoS.	the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;'  Section 5.9.96 states that: 'Loss, severance and fragmentation of woodland and / or hedgerows require consideration both directly and indirectly. The direct loss of habitat requires consideration on the remaining habitat's connectivity, quality (via pollution and fragmentation) and robustness. This affects the habitat's resilience into the future including the potential effects of climate change and species abilities to absorb future pressures on the landscape'.  Section 5.11.19 states: 'Good green infrastructure can produce a strategic and linked, multifunctional network of spaces with benefits for people and wildlife. Furthermore it can be developed to include sustainable features for the development by making it resilient to the effects of climate change and enabling authorities to meet their duty to conserve biodiversity under the NERC Act 2006'.

<sup>31</sup> Department for Communities and Local Government, 2012. *The National Planning Policy Framework*, pp. 25-26. [online] Accessed 26/01/2017.

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			Landscape-scale impacts and ecological networks are considered in Appendix A 5 Biodiversity, in the following sections:  5.9.95: 'The existing habitat comprises of woodland of various sizes with a series of interconnecting hedgerows-which are also a priority habitat. The existence of the network of hedgerows joining various woodland blocks provides a functioning habitat throughout this landscape. The loss of such a large extent of this functioning habitat would therefore occur and require consideration on a landscape scale. Woodlands and hedgerows provide habitat for a diverse range of species and ecological networks via the hedgerows between the woodland blocks'.
Natural England	Scoping report, Table 5.1, Climatic factors	There is a need to consider the main climate risks that airports should be resilient to eg flood risk, extreme weather (strong winds and increased temperatures), and water supply. Changes to biodiversity and landscape as a result of climate change could also significantly affect the operational viability of airports. Equally airports may constrain the ability of other sectors to adapt to the effects of climate change. In recent year airports have produced Climate Change Adaptation Reports to assess the risks and identify priority actions for adaptation.	

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			change projections and adaptation measures will be required, including green infrastructure'.
			Climate Change is also set out as a topic for mitigation and decision making in Section 2.3.8 of the AoS Report.
			The AoS Report considers cross cutting themes in Section 4.5.4, including climate change and how this has been addressed in the carbon topic (emissions), water topic (water scarcity and flooding), biodiversity (ecosystems species adaptation and composition) and future baseline for topics. The section of the AoS Report considers adaption to climate change, including extreme weather event, stating:
			'Adaptation to the effects of climate change including water scarcity and flooding has been assessed within the water topic. Mitigating the effects of climate change, including minimising greenhouse gas emissions and in particular, carbon, has been assessed in the Carbon topic. In addition, topics have taken into account the effects of climate change as part of future baseline and issues. For example, biodiversity considers the effects of climate change on ecosystems such as species adaptation and composition. In addition, the NPS acknowledges that climate change, including extreme weather and heatwaves, will need to be taken into account through the development and consenting of airport infrastructure'.
			Furthermore, interaction between the water topic and climate change have been identified in Table 7.1, Appendix A 7 Water, stating: 'Impacts of climate change include a number of effects on water such as changes in weather patterns and sea level rise which increase flood risk and cause changes to water availability'.

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			Appendix A 9, Section 9.10.17 refers to extreme weather and references the Climate Change Risk Assessment (CCRA) 2012:  'It should be noted that the assessment in this appendix primarily deals with mitigation for climate change through reduction of carbon emissions. However it should be noted that, during detailed design, climate change adaptation should also be considered. This would include design of infrastructure for climate change impacts such as extreme weather (e.g. high winds and heatwaves) in line with the Government's Climate Change Risk Assessment (2012) and forthcoming updates'.  Appendix A 5, Biodiversity, Section 5.6.30 and 5.6.31 outlined the impacts of climate change on biodiversity.
Natural England	Scoping report, Table 5.1, Climatic factors	The importance of using green infrastructure in adapting to climate change is recognised in the National Planning Policy Framework (NPPF), paragraph 99: 'New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure'. Green infrastructure can act as a barrier to air pollution and dust, attenuate storm water runoff, reduce the urban heat island effect, reduce costs including drainage, heating and	Section 4.5.4 covers the key themes of the comment.   'Green infrastructure - The need for green (and blue) infrastructure to be developed alongside future airport expansion is related to a number of topics. Green and blue infrastructure provides:  Habitats, increases connectivity and facilitates movement of species;  Landscape and amenity benefits for communities, contributing to quality of life;  Ecological and chemical water quality and potential flood storage/ conveyance;  A barrier to air pollution, dust and noise;  A reduction in heat island effects'.

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		cooling, reduce airport noise and enhance the visual aesthetics. Green roofs, for example, have been installed at a number of European airports including major airports in Germany, France and Amsterdam.	Section 2.3.7 identifies the general assessment principals set out in the Draft NPS, which includes:   'Climate change adaptation – The scheme will need to consider hotter, drier summers and warmer, wetter winters. There is potentially an increased risk of flooding, drought, heatwaves, intense rainfall events and other extreme events such as storms. The scheme will need to take into account climate change projections and adaptation measures will be required, including green infrastructure'.
Natural England	Scoping report, Table 5.1, Air Quality	Appraisal Question 26: We would suggest that 'issues' is replaced with 'impacts'.	The word issue has been removed on the request of the air quality Steering Group.
Natural England	Scoping report, Table 5.1, Air Quality	A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water and land. The assessment should take account of the risks of air pollution and how these can be managed or reduced. Further information on air pollution impacts and the sensitivity of different habitats/designated sites	Addressed within AoS Report, Appendix A 5 and HRA.  AoS Question 14 is 'Will it increase the exposure of wildlife to transport noise, air pollution, and water pollution?'  Appendix A 5 states:  Table 5.1, Interaction of the Biodiversity topic with other topics: 'Changes in air quality can impact biodiversity receptors via deposition, in particular nitrogen deposition'.  5.8.1: 'During operation effects would include presence of new infrastructure, and indirect effects from aspects such as noise and air quality'.

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		can be found on the Air Pollution Information System ( <u>www.apis.ac.uk</u> ).	5.9.1 [LGW-2R]: 'These potential effects are principally in relation to supporting habitat loss, cumulative air quality impacts and incombination impacts'.
			5.9.2 [LGW-2R]: 'For these three sites [Mole Gap to Reigate Escarpment SAC, Ashdown Forest SAC and Ashdown Forest SPA] the potential for likely significant effects have been identified with regard to air quality impacts associated with increased traffic flow, and direct and indirect impacts upon supporting habitat as a result of the surface access strategy'.
			Section 5.9.25, 5.9.58 and 5.9.87 [all schemes] identifies SSSI's site with the potential for air quality impacts.
			Section 5.9.26: 'The potential impacts could occur both alone and in-combination. Air and water quality changes could result in adverse effects to the habitats and species interest features of these sites. Impacts may also arise cumulative with other major infrastructure or development set out in plans, policies or programmes listed in Table 6.4 of the AoS'
			Section 5.9.33 [LHR-ENR]: 'With the exception of SWLW, the potential likely significant effects have been identified with regard to air quality impacts associated with increased traffic flow, and direct and indirect impacts upon supporting habitat as a result of the surface access strategy. Cumulative effects are also expected to arise due to additional sources of pollution from major infrastructure projects being carried out in support of plans, policies or programmes'.
			Section 5.9.36: 'In the absence of evidence to the contrary and with recourse to the precautionary principle, it is considered reasonably

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			likely that the air quality impacts of scheme will contribute additional NOx-related adverse effects on the integrity of the European site'  Section 5.9.59 and 5.9.88 [LHR-ENR and LHR-NWR]: 'Air and water quality changes could result in adverse effects to the habitats and species interest features of these sites. In addition to the legal
			protection afforded to SSSI under the WCA, the NPPF deters development'.  Section 5.9.63 [LHR-NWR]: 'With the exception of SWLW, the potential likely significant effects have been identified with regard to air quality impacts associated with increased traffic flow, and direct and indirect impacts upon supporting habitat as a result of the surface access strategy both alone and in-combination. Eight European sites are located in immediate proximity (< 200m) to major roads leading to Heathrow. All sites are assessed as vulnerable to nitrogen deposition and are currently in exceedance (or in the case of SWLW, are close to exceedance). Further investigations are required with regard to the effects of nitrogen
			deposition on the qualifying features of the sites in order to quantify any changes resulting from the scheme'.  Section 5.9.65 [LHR-NWR]: 'In the absence of evidence to the contrary and with recourse to the precautionary principle, it is considered reasonably likely that the air quality impacts of the scheme will contribute additional NOx-related adverse effects on the integrity of the European site'.  Section 5.9.97 [LGW-2R]: 'The scheme could result in air quality impacts on ancient woodland blocks adjacent to affected roads. Natural England's standing advice on ancient woodland and veteran

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			trees highlights the need for developers to consider air quality impacts on ancient woodland'.  Section 5.9.98 [LGW-2R, LHR-ENR and LHR-NWR]: 'In addition to the direct and indirect effects associated with airport expansion the scheme may have cumulative effects with other development proposed in plans, policies or programmes set out in Table 6.4 of the AoS Report. These effects may arise as a consequence of decreasing air quality due to increasing traffic associated with new development or major infrastructure, or due to the cumulative effect on sites and due to loss of habitat'.  Mitigation for air quality impacts is identified in Section 5.11.  Section 5.12, Conclusion, reiterates the above points.  Section 7 of the HRA addresses the 'Effects of Changes to Air Quality' as a result of both Airport related road transport (vehicle access including car parking) and Airport activities (such as aircraft movements, heat & power generation) as well as non-Airport related road transport and other emissions on European sites.  Air Pollution Information System are referenced within the HRA.
Natural England	Scoping report, Table 5.1, Air Quality	As stated above AoS will need to consider the air quality impacts on designated sites from aviation and surface access proposals.  Consideration of sites that could be affected by changes to road traffic emissions associated with the airport expansion will need	

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		to be considered once detailed traffic modelling data is available.	
Natural England	Scoping report, Table 5.1, Resources and waste	We would advise that the project applies the circular economy principles wherever possible and sets an exemplar of sustainability in this area. Obligations under the Waste Hierarchy, require that everything possible is done to minimise the generation of waste, from design through to operation and end of life.	These principles have been reference within the Appendix A 10 Resources and Waste. Sections:  10.1.5: 'Adopting the principles of the Hierarchy, and applying innovation, creativity and careful planning to the management of materials and waste arisings during the lifecycle phases of built environment projects (planning through to end of life transition), will contribute to the long-term industry vision for achieving a circular economy within the UK, Europe and beyond. This vision is built on the premise that exemplar projects will manage resources are managed to achieve their greatest possible value, whilst protecting human health and the environment'.  10.2.8: 'The Closing the Loop Package comprises an EU Action Plan for the Circular Economy. It sets out a programme of action with measures covering the whole material lifecycle: from production and consumption, to waste management, to the market for secondary raw materials. The annex to the Action Plan sets out the timeline for completing actions'.  10.9.7: 'Design, procurement and construction activities play a particularly important role in minimising lifecycle impacts from material consumption, whilst maximising opportunities to align with the highest tiers of the Waste Management (Resource Efficiency) Hierarchy. Where good, best practice and exemplar principles of resource efficiency are not applied during these three lifecycle

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			stages, opportunities to minimise impacts are typically lost or their effect greatly minimised.  10.10.2: 'these measures present resource efficiency best and exemplar practice for scheme delivery and operation'.  10.10.3: 'By adopting the following measures, the preferred scheme developer will be able to more effectively take into account the pending ambitions and requirements of the EU Circular Economy Package'  10.12.2: 'As part of the conclusions drawn, it should be noted that future policy (the EU Circular Economy Package; the 25 year plan for the natural environment, in particular) and increasingly stringent legislation (for example, the Carbon Budget targets) are likely to materially influence future assessments of impact and the mitigation measures considered appropriate for aviation scheme lifecycles. Future assessments should be mindful of advances to these particular initiatives'.
Natural England	Scoping report, Table 5.1, Resources and waste	Impacts on local energy from waste plants need to be considered and opportunities to improve/expand the facilities, to provide heat energy, either to the airport, or other local users considered.	Information has been provided within the AoS Report as follows:  Section 6.12.4: 'As part of the core works, the LHR-NWR promoter has confirmed that works will involve the demolition and reprovisioning of the Lakeside Energy from Waste (EfW) Plant. The re-provisioning of this sizeable building, associated plant and supporting infrastructure would require significant consumption of materials in addition to the consumption required for the other aspects of the LHR-NWR scheme'.

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			- Section 6.12.10: 'No estimate has been made of the quantities of waste that would arise from the proposed demolition of the Lakeside EfW Plant (which is unique to the LHR-NWR scheme). The demolition of the Lakeside EfW Plant also has the potential to cause issues for waste management because increased transportation costs and alternative routing for some waste authorities – both within the London region and further afield - would be required if alternative facilities are used. Burdens on alternative waste management / recycling infrastructure might also be realised, in addition to indirect negative impacts on local traffic conditions'.  Section 6.12.11: 'The demolition of the EfW Plant would likely exacerbate the temporary and permanent impacts associated with the LHR-NWR scheme'.  Further information regarding facility has been included within Appendix A 10 Resources and Waste, Section 10.7.9, 10.9.11 to 10.9.14, 10.9.30, 10.9.31, 10.11.1, 10.12.6, 10.12.11 to 10.12.13.  Opportunities for reducing emissions through efficient heating of airport buildings is reflected in the NPS.
Natural England	Scoping report, Table 5.1, Soil - Section 5.1 (Soil topic)	Potential loss of geodiversity is normally considered in relation to the geological conservation impacts of the project i.e. in relation to geological SSSIs and RIGS. We would advise that a separate 'Geoconservation' topic heading may be warranted. The paragraph on 'greenfield land	Greenfield land has been considered in the soil topic. This is due to soils close relationship to geology. As potentially impacts have been covered under the soils topic, it hasn't been necessary to set out a separate topic heading (note that no impacts have been identified in relation to geodiversity).

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		loss' is a separate issue and is better included in the section below (row below in table) dealing with 'potential for loss and damage to soil& etc).	
Natural England	Scoping report, Table 5.1, Soil, AoS objectives' column Objective 10	To minimise loss of undeveloped soils and of best and most versatile agricultural land, and protect soil against erosion, contamination, and degradation.	Objective 10 has been updated to:  'To minimise loss of undeveloped soils and of best and most versatile agricultural land, and protect soil against erosion, contamination and degradation'.
Natural England	Scoping report, Table 5.1, Soil, Appraisal Questions' column Quest ion 16	Will it maximise construction on previously developed land, minimise use of greenfield land and minimise use of best and most versatile agricultural land?	Question 16 has been updated to:  'Will it maximise construction on previously developed land, minimise use of greenfield and best and most versatile agricultural land?'
Natural England	Under Sources of Information – Question 16	The Place Assessment report includes information about Agricultural Land Classification (ALC) grades from the published provisional mapping but does not refer to the companion 'Likelihood of land being best and most versatile' mapping which is also to be used. Suggest an additional comment is made here to this effect.	Appendix A 6, Soils, states:  6.3.5: 'The assessment of impacts on BMV agricultural land has been informed by review of the ALC Strategic Map – Likelihood of BMV Agricultural Land Dataset (Natural England, 2012). This map provides predictions about the location of agricultural land, and the likelihood that it is BMV land'.

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		6.9.15 [LGW-2R]: 'Land which is developed either for development of the airport or for surface access will effectively be permanently lost for agricultural use. The extent to which use of greenfield or agricultural land has been minimised is not known. Greenfield (including agricultural land) is a finite resource, and its loss cannot easily be compensated through provision of land elsewhere. The loss of this land also means loss of value for food provision. The loss of 421ha of agricultural land, a high proportion of which is likely to be BMV agricultural land, is a significant negative effect'.  6.9.26 [LHR-ENR]: 'Natural England's Strategic Map Information – Likelihood of BMV Agricultural Land Dataset indicates that the site includes a significant proportion of BMV agricultural land. Land which is developed either for development of the airport or for surface access will effectively be permanently lost for agricultural use. The extent to which use of greenfield or agricultural land has been minimised is not known. Greenfield (including agricultural land) is a finite resource, and its loss cannot be easily compensated through provision of land elsewhere. The loss of this land also means loss of value for food provision. The loss of 371ha of agricultural land, a high proportion of which is likely to be BMV agricultural land, is a significant negative effect'.  6.9.38 [LHR-NWR]: 'The site area of the airport incorporates approximately 431ha of agricultural land. Agricultural land is a finite and irreplaceable resource. ALCs Grade 1, 2 and 3a are the most productive uses, and are protected as BMV land. Natural England's Strategic Map Information – Likelihood of BMV Agricultural Land Dataset indicates that the site includes a high proportion of BMV agricultural land'.

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Natural England	Scoping report, Table 5.1, Soil, Sources of Information – Question 17	Not just loss of soil resources but risk of degradation through disturbance (e.g. compaction, mixing) – suggest reword as follows: 'The Report addresses potential effects of contamination or loss/disturbance of soil/land resources associated with each scheme'	Question 17 has need updates to:  'Will it lead to the disturbing, harm, contamination or loss of soil resources'
Natural England	Methodology, 5.2	We would like to see more on how the AoS will inform the NPS. For example how recommendations from the AoS will be included as part of the policy and the critical importance of mitigation measures to the environmental impact, and potentially legal compliance of alternatives.	Section 7.2 of the AoS Report covers how the AoS was taken into account in developing the Draft NPS.  Table 7.3, mitigation for significant effects for LHR-NWR, identified mitigation also included within the NPS.
Natural England	Cumulative effects, PPP's, Table 5.2	We would advise the following PPPs should be considered alongside those already listed in table 5.2:  River Thames Flood Relief Scheme  Lower Thames Crossing  Climate Change Adaptation Strategy  River Basin Management Plans	Not all are cumulative effects but should be taken into account in the assessment at strategic level and/or the next stage.  Potential cumulative effects of the Lower Thames Crossing are included within Table 6.5 of the AoS Report.  River Basin Management Plans are considered within Appendix A 7, Water.  Potential cumulative effects of local Mineral and Waste plans are considered within Table 6.5 of the Aos Report and the HRA.

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		Minerals and Waste plans - historically there has been a lot of mineral extraction in these areas and there have been issues in relation to restoration of mineral extraction sites as water bodies due to potential for bird strike.	Further consideration of individual projects for cumulative effects would need to be undertaken at project level when impacts on environmental assets is better understood and therefore be assessed against cumulative impacts from other projects.
Natural England	Scoping Report, Table 2.3, Ecosystem services assessment	We note that the further work on the Ecosystem Services Assessment (ESA) is not being undertaken at the strategic level, but that 'further assessment of impacts on ecosystem services and identification of mitigation can be undertaken at project level'. Given the benefits of ESA, we would recommend this wording is changed to: 'further assessment of impacts on ecosystem services and identification of mitigation should be undertaken at project level'. This topic is overarching and is not confined to biodiversity, but covers multiple services such as soil regulation, water management, air quality regulation etc. It is not therefore appropriate to confine Ecosystems Services to the Biodiversity topic, and further project level assessments should consider ESA as a cross cutting theme.	Ecosystem Services have been considered as a process within Table 3.6 of the AoS Report. This table states that ''the AoS recommends that further assessment of impacts on ecosystem services and identification of mitigation is undertaken at project level'.  Ecosystem Services has been identified as a cross cutting theme in Section 4.5.4 of the AoS Report:  'The consideration of ecosystems such as farmland or woodland, and the different services that these provide covers a number of AoS topics such as Soils (food production, pollution control), Water (regulation of flood risk) and Landscape (amenity value). An assessment of ecosystem services was undertaken by the AC as described in Table 3.6 above. Although further assessment has not been undertaken for the AoS, references to potential impacts on ecosystem services are made in individual topics where relevant, including Soils, Carbon, Water and Biodiversity'.

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Natural England	Scoping Report, Table 2.3, Table 2.3 Habitats Regulations Assessment	We welcome the clarification in Table 2.3 of the relationship between the AoS and the Habitats Regulations Assessment.	This has been carried through to Table 3.6 within the AoS Report.  The HRA has feed into Appendix A 5 Biodiversity.
Natural England	Scoping Report, Mitigation and Enhancement	The AoS should include proposals for mitigation of any significant adverse impacts and, if appropriate, compensation measures. We note that 5.2.6 is the only reference in the document to mitigation measures. We would like the document to acknowledge the critical importance of mitigation measures to the environmental impact, and potentially legal compliance of alternatives. We suggest that the document should set out how mitigation will be considered and ensured, albeit that much of this work will be carried out at later, more detailed stages in the process.	Table 7.2 of the AoS Report identifies proposed mitigation, as well as that included within the NPS.  Mitigation is discussed within the AoS Report, Section 7.5. this states that:  'A mitigation hierarchy has been applied as set out in Section 3.3.21 above. The order of preference for mitigation applied is:  \(\rightarrow\) Prevent or avoid;  \(\rightarrow\) Reduce or minimise;  \(\rightarrow\) Offset, ameliorate or compensate'.  Topic specific mitigation is also included within each topic Appendix'.
Natural England	Scoping Report, Mitigation and Enhancement	Consideration will need to be given to the likelihood of bird strike control requirements having a significant influence on the type and function of habitats created as mitigation for all three scheme proposals.	The AoS Report states:  6.7.21: 'There are birdstrike management issues for the LHR-ENR and LHR-NWR schemes associated with the nearby complex of open water bodies. The western threshold of the extended runway will be significantly closer to the complex of reservoirs and gravel

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			pits to the west of the airport (including sites designated as part of the SWLW SPA and Ramsar site). The closer proximity of the runway and increased air traffic is likely to result in an increased strike risk, and a corresponding requirement for an increase in bird management and control activities is anticipated. Methods of deterring/scaring and controlling bird species potentially hazardous to aviation operations could potentially have an adverse effect on non-target species and biodiversity including those not listed on the designation interest features'.
			6.7.22: 'For LHR-ENR and LHR-NWR bird management measures present a range of complex challenges both in terms of avoiding impacts but also in the siting of any compensation habitats'.
			6.9.8: 'It should be noted that there is a potential conflict between the need to manage bird strikes for which the introduction of new open watercourses is a negative impact. The alternatives for managing this will most likely also include netting of open water bodies something that potentially will have a detrimental impact on the water environment especially the management of water bodies'.
			7.4.51: 'Increased levels of bird scaring/control as part of birdstrike risk management measures could cause effects to other non-target waterbird species including the SPA interest features. Given the uncertainty surrounding flight paths and flight heights for the schemes at this time the precautionary principle requires that any further disturbance effects would be likely to result in disturbance to the interest features of the site and as such an adverse effect to the sites integrity'.
			7.4.62: 'Methods of deterring/scaring and controlling bird species potentially hazardous to aviation operations could potentially have

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			an adverse effect on non-target species and biodiversity including those not listed on the designation interest features'.  7.4.63: 'Compensatory habitats created as offset for the scheme proposals will need to be designed in such a way as to deter/not attract birds hazardous to aviation operations or be sited sufficiently far away for increased strike risks to be insignificant and this may limit the biodiversity benefits for some of the proposed compensation areas close to the proposed scheme'.
Natural England	Scoping Report, Mitigation and Enhancement	Overall we would advise that in addition to mitigation, opportunities for environmental enhancement and the improvement of current environmental conditions and features are sought.	Table 7.3 within the AoS Report identifies mitigation.  An exemplar approach and net positive gain is discussed in relation to specific topics within the AoS Report. For example:  Section 6.9.12: 'exemplar surface water management scheme' (water)  Table 7.3: measures should be adopted and associated opportunities maximised to ensure the preferred scheme is exemplar'. (Resources and Waste)  Biodiversity topic Appendix (A5):  5.2.13: 'In the context of biodiversity the NPPF identifies that the planning system should contribute to and enhance the natural and local environment by:  → recognising the wider benefits of ecosystem services; and

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			minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'.
			5.5.6: 'Positive and negative effects are determined according to whether the change is in accordance with nature conservation objectives and policy:
			→ Positive impact – a change that improves the quality of the environment e.g. by increasing species diversity and generating net gains, extending habitat or improving water quality. Positive impacts may also include halting or slowing an existing decline in the quality of the environment;
			5.11.1: The NPPF states :
			'the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'.
			5.11.5: 'The mitigation hierarchy comprises three tiers and is essential for all development projects aiming for No Net Loss or Net Positive Impact or for adopting a Net Positive Approach. It is based on a series of sequential steps that must be taken throughout a project's life cycle in order to limit any negative impacts on biodiversity'.
			5.11.8: 'Collectively avoidance and mitigation serve to reduce, as far as possible, the residual impacts that a project has on biodiversity. In some circumstances, however, even after their effective

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			application, compensation will be required to avoid net loss or to create a Net Positive Impact.
			5.11.11: 'The AoS objectives are to protect and enhance designated sites for nature conservation and to conserve and enhance undesignated habitats, species, valuable ecological networks and ecosystem functionality. These align to the AC's objective of avoiding harm to biodiversity and, where possible, to provide net gains via habitat enhancement and mitigation measures'.
			5.11.12: 'Based on the information available it is not possible to determine the consistent application of the mitigation hierarchy for the options or how no net loss or net gain will be achieved though it is acknowledged that further work will be required to inform these considerations in detail both in terms of meeting the AC's objective of avoiding harm to biodiversity and, where possible, to provide net gains via habitat enhancement and mitigation measures'.
			This approach is further discussed with regards to the WFD in Appendix A 7, Water:
			7.10.2: 'The development proposals should seek to pursue an exemplar approach to proposed mitigation and enhancement measures, in particular with regards to meeting Water Framework Directive objectives'.
			Appendix A 11 (Section 11.10.11) and Table 7.3 of the AoS Report states that HE would seek to encourage opportunities to enhance the significance of heritage assets through the design, planning and implementation of a proposal. Individual proposals would need to be covered in the DCO stage as stated. This would include a full methodology for the setting assessment. Noise impacts should be considered in more detail at that stage.

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Natural England	Scoping Report	We would like to see a steer that the promoters should seek to implement exemplar approaches to protect and where possible enhance the environment to benefit people and the environment. In practice this will be in line with planning policy in the NPPF and relevant legislation. We advise that this would entail an overarching commitment to exemplar standards and net environmental gain e.g. net gain in biodiversity.	An exemplar approach and net positive gain is discussed in relation to specific topics within the AoS Report and Appendix A. For example:  AoS Report, Section 6.9.12: 'exemplar surface water management scheme' (water)  Appendix A 7, Section 7.10.2. 'The development proposals should seek to pursue an exemplar approach to proposed mitigation and enhancement measures, in particular with regards to meeting Water Framework Directive objectives'.  AoS Report, Table 7.3: 'measures should be adopted and associated opportunities maximised to ensure the preferred scheme is exemplar'. (Resources and Waste)  AoS Report, Tables 7.3 show net gain of Biodiversity features.  These principles have been reference within the Appendix A 10 Resources and Waste. Sections:  10.1.5: 'Adopting the principles of the Hierarchy, and applying innovation, creativity and careful planning to the management of materials and waste arisings during the lifecycle phases of built environment projects (planning through to end of life transition), will contribute to the long-term industry vision for achieving a circular economy within the UK, Europe and beyond. This vision is built on the premise that exemplar projects will manage resources are managed to achieve their greatest possible value, whilst protecting human health and the environment'.

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			10.9.7: 'Design, procurement and construction activities play a particularly important role in minimising lifecycle impacts from material consumption, whilst maximising opportunities to align with the highest tiers of the Waste Management (Resource Efficiency) Hierarchy. Where good, best practice and exemplar principles of resource efficiency are not applied during these three lifecycle stages, opportunities to minimise impacts are typically lost or their effect greatly minimised'.
			10.10.2: 'Section 10.10.3 sets out the mitigation measures proposed by the scheme promoters, and range of additional measures to complement and advance these. In combination, these measures represent resource efficiency best and exemplar practice for scheme delivery and operation'.
			Appendix A 5 Biodiversity reflects this comment. Section 5.11.5 States: 'The mitigation hierarchy comprises three tiers and is essential for all development projects aiming for No Net Loss or Net Positive Impact or for adopting a Net Positive Approach. It is based on a series of sequential steps that must be taken throughout a project's life cycle in order to limit any negative impacts on biodiversity'.

