Department for Environment, Food & Rural Affairs

Appraisal of Sustainability of the National Policy Statement for Water Resources

Scoping Report

November 2017

Amec Foster Wheeler Environment
& Infrastructure UK Limited

Report for

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2	Final Draft AoS Scoping Report	10.09.17
3	Revised Draft AoS Scoping Report	26.09.17
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5	Final AoS Scoping Report (Published)	08.11.17

Non-Technical Summary

Introduction

This Non-Technical Summary (NTS) provides an overview of the Scoping Report produced as part of the Appraisal of Sustainability (AoS) of the draft National Policy Statement for Water Resources (hereafter referred to as the 'draft NPS').

The following sections of this NTS:

- provide an overview of water resources infrastructure planning;
- describe the AoS process together with how it is to be applied to the draft NPS, including what will be appraised as part of the AoS Report;
- outline the proposed approach to the AoS of the draft NPS, including the proposed appraisal framework;
- set out the next steps in the AoS process including how to respond to consultation on the Scoping Report.

The AoS Scoping Report provides an opportunity for selected stakeholders (listed in **Box NTS 1**), including the UK's Strategic Environmental Assessment (SEA) statutory consultation bodies, to comment on the scope and the level of detail which should be included within the appraisal and subsequent AoS Report of the draft NPS. The AoS Report will then be placed alongside the draft NPS for full public and parliamentary consultation.

Box NTS1 AoS Scoping Consultees

UK SEA Statutory Consultation Bodies	**Additional (Specialist) Consultees**
• Environment Agency	• Water companies
• Historic England	• Ofwat
• Natural England	• Consumer Council for Water
• Scottish Natural Heritage	• Planning Inspectorate
• Historic Scotland	• National Infrastructure Commission
• Scottish Environment Protection Agency	• Committee on Climate Change
• Scottish Government	• Marine Management Organisation
• Natural Resources Wales	• National Parks Authority
• Cadw (Welsh Government historic environment service)	• Joint Nature Conservation Committee
• Welsh Government	
• Department of the Environment's 'Environment and Heritage Service', Northern Ireland	

Water Resources Infrastructure Planning

There is a statutory requirement for water companies in England and Wales to prepare, maintain and publish a water resources management plan (WRMP). These plans set out how the balance between water supply and demand, and security of supply will be maintained over at least a 25 year period. Once a WRMP is adopted, the preferred options to resolve any supply deficits are then implemented as schemes. Schemes that include the development of new water supply infrastructure usually require planning consent under the

Town and Country Planning Act 1990. This planning framework has helped water companies understand future needs and maintain the balance of supply and demand within their boundaries.

The Environment Agency's 2011 'Case for Change'[1] considered the implications of climate change for water supplies regionally and nationally. It concluded that while demand management will have an important role, significant new water resources will be needed to meet the needs of people, businesses and the environment. The Government requested that the water industry develop a long term national approach to establish water needs and the strategic options that could meet these needs. The Water UK's 2016 'Water resources long term planning framework (2015-2065)'[2] noted the importance of demand management in conjunction with a combination of localised initiatives and strategic schemes to provide future resilience. Reflecting the recommendations of this report, the Government has confirmed[3] that a 'twin track' approach to improving the resilience of water supplies is required, with investment in new supplies complementing measures to reduce the demand for water.

National Policy Statement for Water Resources

In order to meet water resilience and increasing demand challenges, the water industry may need to develop new water supply infrastructure that could be considered to be 'nationally significant'. For 'nationally significant infrastructure projects' (such as a major new reservoir), a separate planning regime was established under the Planning Act 2008[4]. In this, development consent is decided nationally based on policy criteria set out in the designated NPS. This has significantly accelerated the process of providing development consent for such projects in other sectors such as energy and transport.

In this context, the Government is developing an NPS for nationally significant water resources infrastructure with the aim of contributing to resilient water supplies. The NPS will provide planning policy guidance against which development consent order applications for any nationally significant water resources infrastructure project will be examined. The NPS is also intended to work alongside the statutory water resources planning process and inform the forthcoming water company business plans for 2020 – 2025 by clearly describing the case for water infrastructure, in turn providing improved clarity and confidence to the delivery phase of any preferred large supply schemes.

The NPS will be non-site specific and is likely to contain information concerning:

- the policy context for water resources infrastructure;
- the need for water resources infrastructure;
- development principles including criteria for good design;
- generic impacts and siting considerations, including generic mitigation measures.

Alongside the development of an NPS, the UK Government is also reviewing the Planning Act 2008 definitions of the types of water supply infrastructure that are classed as 'nationally significant'. This in order to ensure that the right type and scale of projects are included to address the water resilience challenge.

What is an Appraisal of Sustainability (AoS)?

The Planning Act 2008 requires that an AoS must be carried out before an NPS can be designated. The main purpose of an AoS is to examine the likely social, economic and environmental effects of designating the NPS. If potential significant adverse effects are identified, the AoS recommends options for avoiding or mitigating such effects. In this way, the AoS helps inform the preparation of the NPS and supports the NPS's contribution to the achievement of sustainable development. The AoS also incorporates an

[1] Environment Agency (2011) *The case for change – current and future water availability*. Report No: GEHO1111BVEP-E-E
[2] Water UK (2016) *Water resources long term planning framework*. Available from https://dl.dropboxusercontent.com/u/299993612/Publications/Reports/Water%20resources/WaterUK%20WRLTPF_Final%20Report_FINAL%20PUBLISHED.pdf [Accessed August 2017].
[3] See Defra (2007) *The government's strategic priorities and objectives for Ofwat*. Available from https://consult.defra.gov.uk/water/consultation-on-a-new-sps/supporting_documents/Draft%20SPS%20for%20consultation%20%20FINAL.pdf [Accessed August 2017].
[4] The Planning Act 2008. Available from at: http://www.opsi.gov.uk/acts/acts2008/ukpga_20080029_en_1 [Accessed August 2017].

assessment in accordance with the requirements of the SEA Directive and relevant implementing regulations.

In this context, the purposes of the AoS of the draft NPS are:

- to support the Secretary of State in meeting their requirements under Section 10 of the Planning Act 2008 to ensure that the NPS contributes to the achievement of sustainable development and for due regard to be given to the desirability of mitigating and adapting to climate change and achieving good design;
- to identify and quantify the potentially significant environmental and socio-economic effects of the draft NPS including reasonable alternatives to the NPS;
- to inform the Government's decisions on the draft NPS;
- to help identify appropriate measures to avoid, reduce or manage adverse effects and to enhance beneficial effects associated with the implementation of the draft NPS wherever possible; and
- to give the statutory consultees, stakeholders and the wider public the ability to see and comment upon the environmental and socio-economic effects that the draft NPS may have on them, their communities and their interests, and to encourage them to make responses and suggest improvements to the draft NPS.

The main stages of AoS mirror those of SEA and are iterative, building on evidence and consultation responses over time to inform the development of the NPS. They include:

- setting the context and objectives, establishing the baseline and deciding on the scope of the appraisal in consultation with consultees including the statutory SEA bodies (**Stage A**);
- developing and refining alternatives, assessing the likely direct, indirect and cumulative effects of proposed options and identifying mitigating and monitoring measures (**Stage B**);
- completing an AoS Report to present the predicted environmental and socio-economic effects of the draft NPS, including reasonable alternatives, in a form suitable for public consultation and use by decision-makers (**Stage C**);
- consulting on the draft NPS and the AoS Report (**Stage D**);
- assessing the environmental and socio-economic implications of any significant changes to the draft NPS (**Stage D**);
- providing information in a Post Adoption Statement on how the AoS Report and consultees' opinions were taken into account in deciding the final form of the NPS to be designated (**Stage D**); and
- undertaking suitable monitoring of the associated impacts of the selected options (**Stage E**).

The main outputs of the AoS are:

- the AoS Scoping Report (the main report to which this NTS relates), which sets out the context and establishes the baseline conditions for the assessment and outlines the approach to the AoS of the draft NPS including the appraisal objectives and guide questions;
- the AoS Report, which contains the findings of the appraisal of the environmental, social and economic effects of the draft NPS and will be issued for public consultation; and
- the AoS Post Adoption Statement, which will set out how environmental, social and economic factors, the AoS Report and consultees' opinions were taken into account in deciding the final form of the NPS.

What is Being Appraised?

The AoS will be undertaken by appraising the likely sustainability effects of implementing the draft NPS with a particular focus on:

- the proposed vision and objectives of the draft NPS;
- the proposed assessment principles (including criteria on good design); and
- guidance on impacts contained within the draft NPS.

In addition, the effects of reasonable alternatives to the draft NPS will be considered. **Section 2.4** of the main report sets out provisional thinking on some of the factors that will be considered in developing the reasonable alternatives to the NPS.

What is the Proposed Appraisal Framework?

The review of plans and programmes, analysis of the baseline evidence and the assessment of key issues for the draft NPS have been used to establish a number of AoS objectives and guide questions against which the draft NPS and reasonable alternatives will be appraised. Proposed appraisal objectives and guide questions are shown in **Table NTS 1**.

Table NTS 1 Proposed Appraisal Objectives and Guide Questions

AoS Topic Area	Proposed AoS Objectives		Proposed Guide Questions	SEA Directive Topics
Biodiversity and Nature Conservation	1.	To protect and enhance biodiversity (habitats, species and ecosystems) working within environmental capacities and limits.	• Will the Water Resources NPS protect and/or enhance internationally designated nature conservation sites e.g. Special Areas of Conservation, Special Protection Areas, Marine Protected Areas and Ramsar Sites? • Will the Water Resources NPS protect and/or enhance nationally designated nature conservation sites e.g. Sites of Special Scientific Interest? • Will the Water Resources NPS affect animals or plants including protected species? • Will the Water Resources NPS lead to a change in the ecological quality of habitats due to changes in groundwater/river water quality and/or quantity? • Will the Water Resources NPS protect and/or enhance priority species and habitats? • Will the Water Resources NPS affect the structure and function of natural systems (ecosystems)? • Will the Water Resources NPS affect public access to areas of wildlife interest? • Will the Water Resources NPS have an impact on fisheries?	Biodiversity, Flora and Fauna
Population, Economics and Skills	2.	To support a strong, diverse and stable economy through the provision of nationally significant water resources infrastructure with opportunities to improve skills and employment, minimise disturbance to local communities and maximise positive social impacts.	• Will the Water Resources NPS help to ensure that sufficient water resources infrastructure is in place to meet increased demand associated with population growth and to support economic development? • Will the Water Resources NPS ensure that an affordable supply of water is maintained and that vulnerable customers are protected? • Will the Water Resources NPS promote economically efficient solutions that deliver best value for money? • Will the Water Resources NPS affect opportunities for investment in education and skills development? • Will the Water Resources NPS reduce the effects of drought restrictions on the economy?	Population

AoS Topic Area	Proposed AoS Objectives		Proposed Guide Questions	SEA Directive Topics
			• Will the Water Resources NPS affect existing abstractors? • Will the Water Resources NPS affect the number or types of jobs available in local economies? • Will the Water Resources NPS affect the social infrastructure and amenities available to local communities?	
Human Health	3.	To ensure the protection and enhancement of human health and wellbeing.	• Will the Water Resources NPS adversely affect human health by resulting in increased nuisance and disruption (e.g. as a result of increased noise levels)? • Will the Water Resources NPS disproportionately affect communities already identified as vulnerable / at risk? • Will the Water Resources NPS ensure the continuity of a safe and secure drinking water supply? • Will the Water Resources NPS affect opportunities for recreation and physical activity? • Will the Water Resources NPS maintain surface water and bathing water quality within statutory standards?	Population Human Health
Land Use, Geology and Soils	4.	To conserve and enhance soil and geology and contribute to the sustainable use of land.	• Will the Water Resources NPS have an effect on soil quality/function, variety, extent and/or compaction levels? • Will the Water Resources NPS increase the risk of significant land contamination? • Will the Water Resources NPS have an effect on any known and existing contamination? • Will the Water Resources NPS protect and/or enhance Geological Conservation Sites, important geological features and geophysical processes and functions? • Will the Water Resources NPS change patterns of land use or affect best and most versatile agricultural land?	Soils
Water Quality	5.	To protect and enhance water quality and help achieve the objectives of the Water Framework Directive.	• Will the Water Resources NPS protect and improve surface, ground, estuarine and coastal water quality? • Will the Water Resources NPS prevent the deterioration of Water Framework Directive waterbody status (or potential)? • Will the Water Resources NPS support the achievement of protected area objectives, such as groundwater source protection zones and nitrate vulnerable zones? • Will the Water Resources NPS support the achievement of environmental objectives set out in River Basin Management Plans? • Will the Water Resources NPS ensure a new activity or new physical modification does not prevent the future achievement of good status for a water body?	Water
Water Quantity	6.	To protect and enhance surface and ground water levels and flows and ensure sustainable water resource management.	• Will the Water Resources NPS affect river flows and groundwater levels? • Will the Water Resources NPS reduce the impact of drought measures on the environment? • Will the Water Resources NPS affect demand for water resources? • Will the Water Resources NPS ensure the sustainable and resilient supply of water resources?	Water
Flood Risk and Coastal Change	7.	To minimise the risks from coastal change and flooding to people, property and	• Will the Water Resources NPS help to avoid development in areas of flood risk and, where possible, reduce flood risk?	Water Climatic Factors

AoS Topic Area	Proposed AoS Objectives		Proposed Guide Questions	SEA Directive Topics
		communities, taking into account the effects of climate change.	• Will the Water Resources NPS help to avoid development in areas affected by coastal erosion and not affect coastal processes and/or erosion rates?	
Air	8.	To minimise emissions of pollutant gases and particulates and enhance air quality, helping to achieve the objectives of the Air Quality and Ambient Air Quality and Cleaner Air for Europe Directives.	• Will the Water Resources NPS affect air quality? • Will the Water Resources NPS create a nuisance for people or wildlife (for example from dust or odours)?	Air Human Health Biodiversity, Flora and Fauna
Noise	9.	To minimise noise pollution and the effects of vibration.	• Will the Water Resources NPS help to minimise noise and vibration effects from construction and operational activities on residential amenity and on sensitive locations and receptors?	Human Health Biodiversity, Flora and Fauna
Climatic Factors	10.	To minimise greenhouse gas emissions as a contribution to climate change and ensure resilience to any consequences of climate change.	• Will the Water Resources NPS help to ensure a low carbon design solution to the construction and operation of water resources infrastructure? • Will the Water Resources NPS increase resilience to the effects of climate change? • Will the Water Resources NPS promote climate change adaptation (including rising temperatures and more extreme weather events)?	Climatic Factors
Waste and Resources	11.	To minimise waste arisings, promote reuse, recovery and recycling, minimise the impact of wastes on the environment and communities and contribute to the sustainable use of natural and material assets.	• Will the Water Resources NPS maximise re-use and recycling of recovered components and materials? • Will the Water Resources NPS help achieve government and national targets for minimising, recovering and recycling waste? • Will the Water Resources NPS increase the burden on limited natural resources? • Will the Water Resources NPS make best use of existing infrastructure and resources?	Material Assets
Traffic and Transport	12.	To minimise the volume of traffic and promote more sustainable transport choices.	• Will the Water Resources NPS help to minimise traffic volumes? • Will the Water Resources NPS help to minimise the direct effects of transport such as noise and vibration, severance of communities and wildlife habitats and safety concerns? • Will the Water Resources NPS encourage alternative and sustainable means of transporting freight, waste and minerals, where possible?	Biodiversity, Flora and Fauna Population Human Health
Cultural Heritage	13.	To conserve and where appropriate enhance the historic environment including cultural heritage resources, historic buildings and archaeological features and their settings.	• Will the Water Resources NPS conserve or enhance the historic environment, including heritage assets such as historic buildings, conservation areas, features, places and spaces, and their settings • Will the Water Resources NPS affect designated or locally-important archaeological features or their settings? • Will the Water Resources NPS avoid damage to important wetland areas with potential for paleoenvironmental deposits? • Will the Water Resources NPS affect the fabric and setting of historic buildings, places or spaces that contribute to local distinctiveness, character and appearances? • Will the Water Resources NPS affect public access to, or enjoyment of, features of cultural heritage?	Cultural Heritage

AoS Topic Area	Proposed AoS Objectives	Proposed Guide Questions	SEA Directive Topics
Landscape and Townscape	14. To protect and enhance landscape and townscape quality and visual amenity.	• Will the Water Resources NPS have detrimental visual impacts? • Will the Water Resources NPS affect protected/designated landscapes or their setting? • Will the Water Resources NPS affect the intrinsic character or setting of local landscapes or townscapes? • Will the Water Resources NPS help to minimise light pollution from construction and operational activities on residential amenity and on sensitive locations and receptors? • Will the Water Resources NPS affect public access to open spaces or the countryside?	Landscape Human Health

How will the Appraisal be Undertaken?

The appraisal of the draft NPS and reasonable alternatives will be completed and recorded using an AoS matrix (see the example provided in **Table NTS 2**). Matrices will be used to record:

- the nature and scale of the potential effects on the AoS objectives (what is expected to happen), including cumulative, secondary and synergistic, direct and indirect effects;
- when the effect could occur (timing) and its degree of permanence;
- what mitigation measures might be appropriate for potentially significant negative effects on the AoS objectives;
- what options there are to enhance positive effects; and
- assumptions and uncertainties that underpin the assessment.

Symbols and colour coding will also be used to indicate significant (positive or negative) effects.

Table NTS 2 Proposed Appraisal Matrix

NPS Section	Draft NPS	Option 1	Option 2	Appraisal
Generic Impacts	**+**	**+/?**	**+/?**	**Draft NPS** *A description of the effects of the Water Resources NPS sub-section on the topic under consideration will be provided here, with reasoning and justification included. Mitigation and enhancement measures will also be identified.*
				Alternative 1: *A description of the effects of the reasonable alternative to the NPS will be provided here, with reasoning and justification included.*
				Alternative 2: Etc…
	+	**+**	**+/?**	**Draft NPS:**

<table>
<tr><th>NPS Section</th><th>Draft NPS</th><th>Option 1</th><th>Option 2</th><th>Appraisal</th></tr>
<tr><td rowspan="2">Generic Mitigation Measures</td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td>Alternative 1:</td></tr>
<tr><td>Alternative 2:</td></tr>
<tr><td rowspan="3">Etc</td><td rowspan="3">+/?</td><td rowspan="3">+/?</td><td rowspan="3">+/?</td><td>Draft NPS:</td></tr>
<tr><td>Alternative 1:</td></tr>
<tr><td>Alternative 2:</td></tr>
<tr><td>Summary of Recommended Mitigation and Enhancement</td><td colspan="4">A summary of the mitigation and enhancement measures identified through the appraisal will be presented here.</td></tr>
<tr><td>Score Key:</td><td>+ +
Significant
positive effect</td><td>+
Minor
positive effect</td><td>0
No overall effect</td><td>-
Minor
negative effect</td><td>-- Significant
negative effect</td><td>?
Score uncertain</td></tr>
<tr><td colspan="6">NB: where more than one symbol is presented in a box it indicates that the AoS has found more than one score for the category. Where the scores are both positive and negative, the boxes are deliberately not coloured (i.e. 'no overall effect'). Where a box is coloured but also contains a ?, this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed in the colour used. A conclusion of uncertainty arises where there is insufficient evidence for expert judgement to conclude an effect.</td></tr>
</table>

Note: This draft AoS matrix is for illustrative purposes only. The full matrix will be finalised after comments have been received on the AoS categories, objectives and appraisal criteria.

Cumulative effects of the draft NPS will also be assessed both in terms the collective implementation of the NPS and the effects of the draft NPS in-combination with other plans and programmes.

What are the Next Steps of the AoS Process?

Defra will be consulting statutory and other selected consultees on this AoS Scoping Report. Taking into account the responses received, the approach set out in this report to appraise the potential effects of the draft NPS will be amended.

The next stages of the AoS process involve the prediction and evaluation of the effects that the draft NPS and reasonable alternatives to it are likely to have. The appraisal will propose, where appropriate, mitigating measures for adverse effects as well as opportunities to enhance beneficial aspects. The appraisal will be presented in the AoS Report, which will be published for public consultation. The AoS Report has the following purposes:

- to ensure that the significant potential environmental and socio-economic effects associated with the draft NPS and reasonable alternatives are identified, characterised and assessed;
- to propose measures to mitigate the adverse effects identified and, where appropriate, to enhance potential positive effects;
- to provide a framework for monitoring the potential significant effects arising from the implementation of the draft NPS; and

- to provide sufficient information to those affected so that the development of the draft NPS is open and transparent.

While the primary audience of this Scoping Report is statutory and other selected consultees, this Scoping Report is also being made available to the public between **13th November and 22nd December 2017**. If members of the public, or other interested organisations, wish to provide feedback on the proposed scope of the AoS, details of how to respond to the consultation questions are provided below. All evidence-based responses to the questions will be considered.

This Consultation: How to Give Us Your Views

We would welcome your views on any aspect of this AoS Scoping Report. However, we would particularly welcome responses to the following questions:

Consultation Questions	
1.	**Do you agree with the main issues identified in the topic areas (Section 3.3)? Specifically:** **a) Are there issues included in the proposed scope of the appraisal that you think should be removed? If so why?** **b) Are there relevant issues that have not been reflected in the proposed scope of the appraisal that you think should be included? If so, why?**
2.	**Does the AoS Scoping Report set out sufficient information to establish the context for the appraisal, both in terms of the scope of the baseline analysis presented, and the plans and programmes reviewed (Appendix B)? If not, which areas do you think have been missed from the baseline analysis and/or what additional plans or programmes should be included?**
3.	**Do the AoS objectives and guide questions (Section 4.3) cover the breadth of issues appropriate for appraising the effects of the draft NPS? If not, which objectives should be amended and how? Or which guide questions should be amended and how? Are there other objectives or guide questions that you believe should be included?**
4.	**Do you have any comments on the discussion on potential reasonable alternatives to the NPS (Section 2.4)? Should any further alternative scenarios be considered? Please support your suggestion with your reasoning.**

Please provide your comments via the Citizen Space survey at https://consult.defra.gov.uk/water/nps-water-supply-planning-act-2008. If you have any questions about the consultation please contact the Defra team at:

Email: WaterSupplyNPS@defra.gsi.gov

Post: Water Infrastructure Team – Area 3D

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Contents

1. Introduction

1.1 Overview

1.1.1 Public water supplies and future water availability will be affected by population and economic growth, changes in consumer behaviour and the impacts of climate change. The Government has set out how it will enhance its policy framework to ensure the long term resilience of the public water supply in 'Creating a great place for living: Enabling resilience in the water sector'[5]. It highlights that in order to meet this challenge, the water industry may need to develop new water supply infrastructure that could be considered to be 'nationally significant' and that the Government is minded to prepare a National Policy Statement (NPS) to support the delivery of this infrastructure. Subsequently, in her Written Statement[6] of 14th March 2017, the Parliamentary Under Secretary of State for the Environment and Rural Life Opportunities confirmed that the Government will prepare an NPS for nationally significance water resources infrastructure. This work is being led by the Department for Environment, Food and Rural Affairs (Defra).

1.1.2 The NPS for Water Resources will guide the Secretary of State (SoS), Planning Inspectorate and developers in the consideration of any applications for development consent in relation to water resource-related nationally significant infrastructure projects in England. Its development will be informed by the 'Climate Change Risk Assessment 2017'[7], the 'Water resources long term planning framework (2015-2065)'[8], other evidence[9,10] and water resources management plans (WRMPs) prepared by water companies.

1.1.3 Once the NPS has been designated, the Secretary of State will be required to determine any applications for development consent in accordance with it, unless certain other criteria (set out in the Planning Act 2008) apply. The NPS will support the delivery of future large supply projects identified in water company WRMPs, helping the water companies to plan, fund and develop any new large infrastructure that will improve the resilience of future water supplies. The NPS is intended to be non-site specific, focussing on the high level assessment principles against which development consent order applications will be considered, rather than identifying specific sites.

1.1.4 Before designating an NPS, Section 5(3) of the Planning Act 2008 requires that the Secretary of State carry out an Appraisal of the Sustainability (AoS) of the policy set out in the statement. The AoS ensures that the likely environmental and socio-economic effects of the NPS are identified, described and evaluated. The AoS also satisfies the requirements of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (commonly referred to as the Strategic Environmental Assessment (SEA) Directive) and relevant implementing regulations[11] (the SEA Regulations).

1.1.5 In this context, the purposes of the AoS of the draft NPS are:

- to support the Secretary of State in meeting their requirements under Section 10 of the Planning Act 2008 to ensure that the NPS contributes to the achievement of sustainable development

[5] Defra (2016) *Creating a great place for living: Enabling resilience in the water sector*. Available from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/504681/resilience-water-sector.pdf [Accessed August 2017].
[6] UK Parliament (2017) *Affordable, Resilient Water Supplies: Consultation on the Government's Strategic Priorities for Ofwat: Written statement - HCWS530.* Available from: http://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2017-03-14/HCWS530/
[7] Committee on Climate Change (2017) *UK Climate Change Risk Assessment 2017*. Available from https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/uk-climate-change-risk-assessment-2017/ [Accessed August 2017].
[8] Water UK (2016) *Water resources long term planning framework*. Available from https://dl.dropboxusercontent.com/u/299993612/Publications/Reports/Water%20resources/WaterUK%20WRLTPF_Final%20Report_FINAL%20PUBLISHED.pdf [Accessed August 2017].
[9] Defra (2016) *Guiding Principles for Water Resources Planning*.
[10] Environment Agency and Natural Resources Wales (2016) *Final Water Resources Planning Guideline. Available from* https://naturalresources.wales/media/678739/ea-nrw-and-defra-wg-ofwat-technical-water-resources-planning-guidelines.pdf] [Accessed July 2017)].
[11] The Environmental Assessment of Plans and Programmes Regulations 2004 S.I. 2004 No. 1633.

and for due regard to be given to the desirability of mitigating and adapting to climate change and achieving good design;

- to identify and quantify the potentially significant environmental and socio-economic effects of the draft NPS including reasonable alternatives to the NPS;
- to inform the Government's decisions on the draft NPS;
- to help identify appropriate measures to avoid, reduce or manage adverse effects and to enhance beneficial effects associated with the implementation of the draft NPS wherever possible; and
- to give the statutory consultees, stakeholders and the wider public the ability to see and comment upon the environmental and socio-economic effects that the draft NPS may have on them, their communities and their interests, and to encourage them to make responses and suggest improvements to the draft NPS.

1.2 Purpose of this Report

1.2.1 This Scoping Report represents the first formal output of the AoS of the draft NPS for Water Resources (hereafter referred to as the 'draft NPS'). The purpose of the Scoping Report is to provide sufficient information to consultees to enable them to comment on the proposed scope of the AoS. It provides:

- an overview of the relationship between AoS and SEA, and a demonstration of how, as far as is relevant at this scoping stage, the AoS approach meets the requirements of the SEA Directive (**Section 1**);
- an overview of the anticipated NPS content and provisional thinking on some of the factors that will be considered in developing the reasonable alternatives to the NPS (**Section 2**);
- a summary of the significant policy topics or objectives that may be appropriate to the AoS of the draft NPS, identified following a review of relevant international and national plans, policies and programmes (**Section 3**);
- baseline information for each of the AoS topics, with an indication of the source of the data and its relevance to the draft NPS (**Section 3**);
- key economic, social and environmental issues relevant to the appraisal of the draft NPS (**Section 3**);
- an appraisal framework (comprising AoS objectives, guide questions, assessment matrices, and proposed threshold values used to determine the significance of an effect) (**Section 4**);
- the approach to the assessment of cumulative effects of the draft NPS (**Section 4**); and
- the proposed structure of the AoS Report (**Section 5**).

1.3 Water Resources Infrastructure Planning – An Overview

Water Resources Planning

1.3.1 The Water Industry Act 1991, as amended by the Water Act 2003 and Water Act 2014, requires all water companies to prepare, maintain and publish statutory WRMPs. The plans set out how water companies intend to maintain the balance between water supply and demand and ensure security of supply over at least the next 25 years in a way that is economically, socially and environmentally sustainable.

1.3.2 Part III of the Water Industry Act 1991 states the following role for water companies in water supply:

"*37.—(1) It shall be the duty of every water undertaker to develop and maintain an efficient and economical system of water supply within its area and to ensure that all such arrangements have been made—*

(a) for providing supplies of water to premises in that area and for making such supplies available to persons who demand them; and

(b) for maintaining, improving and extending the water undertaker's water mains and other pipes, as are necessary for securing that the undertaker is and continues to be able to meet its obligations under this Part.

37A.—(2) A water resources management plan is a plan for how the water undertaker will manage and develop water resources so as to be able, and continue to be able, to meet its obligations under this Part."

1.3.3 The Government has set out its priorities for water companies in developing their WRMPs via the 'guiding principles'[12]. The Water Resources Planning Guideline[13] produced by the Environment Agency and Natural Resources Wales, meanwhile, provides a framework for the development and presentation of water company plans.

1.3.4 The process of developing a WRMP requires an estimation of baseline supply forecast to be prepared, along with an estimation of baseline demand forecast. The uncertainties and target headroom required are then estimated. The calculation of the baseline supply demand balance for each year of the plan's period are then used to determine if there are any years or critical periods where there is likely to be a supply-demand balance deficit. Once this information has been established, options which could be used to manage the supply demand balance deficit are considered with the final planning solution for managing supply and demand presented in the WRMP. Following public consultation on the draft WRMP, amendment, review and direction by the Secretary of State for Food, Environment and Rural Affairs, the water company will publish the final WRMP.

1.3.5 The process of option development that underpins WRMP preparation includes a review of as many potential solutions as possible (the 'unconstrained list' of options) to identify 'feasible' (constrained) options. These 'feasible' options are then reviewed to identify 'preferred options' to resolve any supply deficits. The types of options considered in preparing WRMPs can be broadly categorised as follows:

- supply side measures – increasing the water available for use in the local supply area through an increase in deployable output;
- water transfer – importing water from an area of surplus into an area of deficit;
- demand management - measures to reduce demand through a combination of leakage reduction and water efficiency measures.

1.3.6 Once the WRMP is adopted, the preferred options are then implemented as schemes. Schemes that include the development of new water supply infrastructure usually require planning consent under the Town and Country Planning Act 1990. This planning framework has helped water companies understand future needs and maintain the balance of supply and demand within their boundaries.

1.3.7 The Environment Agency's 2011 'Case for Change'[14] considered the implications of climate change for water supplies regionally and nationally and concluded that while demand management will have an important role, significant new water resources will be needed to meet the needs of

[12] Further information available at https://www.gov.uk/government/publications/water-resources-planning-managing-supply-and-demand/water-resources-planning-how-water-companies-ensure-a-secure-supply-of-water-for-homes-and-businesses . A full copy of the guiding principles can be requested from water-company-plan@environment-agency.gov.uk

[13] Environment Agency and Natural Resources Wales (2016) *Final Water Resources Planning Guideline. Available from* https://naturalresources.wales/media/678739/ea-nrw-and-defra-wg-ofwat-technical-water-resources-planning-guidelines.pdf] [Accessed July 2017)].

[14] Environment Agency (2011) *The case for change – current and future water availability*. Report No: GEHO1111BVEP-E-E

people, businesses and the environment. The Government requested that the water industry develop a national water resources long term planning framework to establish water needs and the strategic options that could meet these needs. The Water UK's 2016 'Water resources long term planning framework (2015-2065)' noted the importance of demand management in conjunction with a combination of localised initiatives and strategic schemes to provide future resilience. Reflecting the recommendations of this report, the Government has confirmed[15] that a 'twin track' approach to improving the resilience of water supplies is required, with investment in new supplies complementing measures to reduce the demand for water.

National Policy Statement for Water Resources

1.3.8 In order to meet the water resilience and increasing demand challenges, the water industry may need to develop new water supply infrastructure that could be considered to be 'nationally significant'. For 'nationally significant infrastructure projects' (such as a major new reservoir), a separate planning regime was established under the Planning Act 2008. In this, development consent is decided nationally based on policy criteria set out in the designated NPS. This has significantly accelerated the process of providing development consent for such projects in other sectors such as energy and transport.

1.3.9 In this context, the Government is developing an NPS for nationally significant water resources infrastructure with the aim of contributing to resilient water supplies and providing planning policy guidance against which development consent order applications for any nationally significant water resources infrastructure project will be examined. Alongside the development of an NPS, the UK Government is also reviewing the Planning Act 2008 definitions of the types of water supply infrastructure that are classed as 'nationally significant'. This is in order to ensure that the right type and scale of projects are included to address the water resilience challenge.

1.4 Appraisal of Sustainability (AoS) and Strategic Environmental Assessment (SEA)

The Requirement for an AoS of the National Policy Statement for Water Resources

1.4.1 Section 5(3) of the Planning Act 2008 requires that an AoS must be carried out before an NPS can be designated. The main purpose of an AoS is to examine the likely social, economic and environmental effects of designating the NPS. If potential significant adverse effects are identified, the AoS recommends options for avoiding or mitigating such effects. In this way, the AoS helps inform the preparation of the NPS and supports the NPS's contribution to the achievement of sustainable development.

Relationship between AoS and SEA

1.4.2 The Government has determined that the AoS of the NPS for Water Resources, required under the Planning Act 2008, should incorporate an assessment in accordance with the requirements of the SEA Directive and relevant implementing regulations to ensure that environmental considerations are taken into account. The Directive aims for a high level of environmental protection and to promote sustainable development and applies to certain plans that are likely to have significant effects on the environment. The draft NPS is being treated as a plan for the purpose of the SEA Directive.

1.4.3 The AoS considers socio-economic and environmental effects in the same way as environmental effects are required to be assessed by the SEA Directive.

[15] See Defra (2007) *The government's strategic priorities and objectives for Ofwat*. Available from https://consult.defra.gov.uk/water/consultation-on-a-new-sps/supporting_documents/Draft%20SPS%20for%20consultation%20%20FINAL.pdf [Accessed August 2017].

Stages of the AoS Process

1.4.4 The main stages of AoS mirror those of SEA and are iterative, building on evidence and consultation responses over time to inform the development of the NPS. They include:

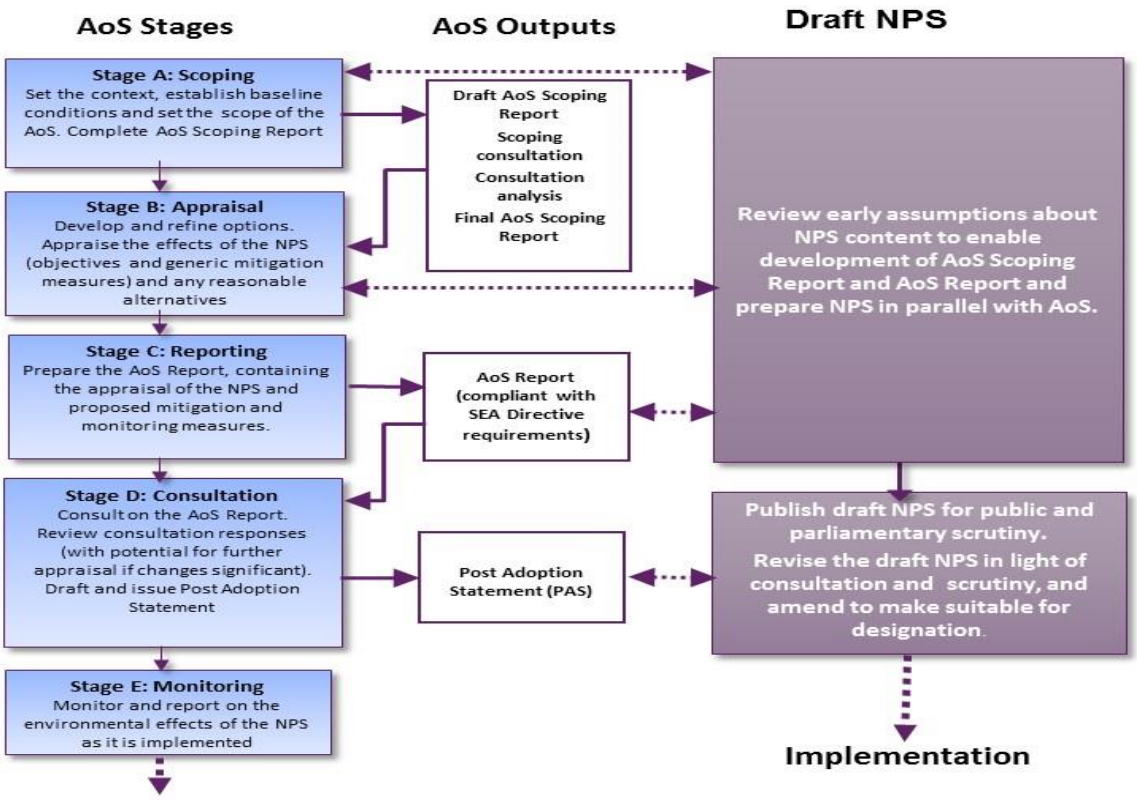
- setting the context and objectives, establishing the baseline and deciding on the scope of the appraisal in consultation with consultees including the statutory SEA bodies (**Stage A**);
- developing and refining alternatives, assessing the likely direct, indirect and cumulative effects of proposed options and identifying mitigating and monitoring measures (**Stage B**);
- completing an AoS Report to present the predicted environmental and socio-economic effects of the draft NPS, including reasonable alternatives, in a form suitable for public consultation and use by decision-makers (**Stage C**);
- consulting on the draft NPS and the AoS Report (**Stage D**);
- assessing the environmental and socio-economic implications of any significant changes to the draft NPS (**Stage D**);
- providing information in a Post Adoption Statement on how the AoS Report and consultees' opinions were taken into account in deciding the final form of the NPS to be designated (**Stage D**); and
- undertaking suitable monitoring of the associated impacts of the selected options (**Stage E**).

1.4.5 The main outputs of the AoS are:

- the AoS Scoping Report (this report), which sets out the context and establishes the baseline conditions for the assessment and outlines the approach to the AoS of the draft NPS including the appraisal objectives and guide questions;
- the AoS Report, which contains the findings of the appraisal of the environmental, social and economic effects of the draft NPS and which will be issued for public consultation; and
- the AoS Post Adoption Statement, which will set out how environmental, social and economic factors, the AoS Report and consultees' opinions were taken into account in deciding the final form of the NPS.

1.4.6 The key AoS stages are shown in **Figure 1.1** together with links to the draft NPS process.

Figure 1.1 Linking the AoS and Draft NPS



Note: These stages are based on guidance contained in Office of the Deputy Prime Minister (now Communities and Local Government) (2005) guidance.[16]

1.4.7 The following activities have been undertaken to complete Stage A (highlighted above) and as part of the preparation of this Scoping Report:

- **Identifying relevant plans and programmes**: A review has been undertaken of relevant international, European, UK and national (England, Scotland and Wales) plans and programmes in order to establish how the draft NPS could be affected by (and affect) their objectives and proposals, and to help identify any relevant environmental protection objectives which need to be taken into account during the NPS's preparation and the AoS. Scottish and Welsh plans and programmes have been considered due to the potential for the effects of water resources infrastructure to impact upon Scottish and Welsh territories, particularly given the transboundary nature of hydrological systems, such as rivers flowing across borders.
- **Collecting baseline information**: A review has been undertaken of current and predicted baseline environmental conditions following a 'business as usual' scenario, again conducted for the UK, England, Scotland and Wales, as appropriate. This includes the key environmental characteristics of each topic or area most likely to be significantly affected by the draft NPS. This baseline will provide an evidence base for current environmental and socio-economic problems, prediction of effects and proposals for monitoring. It also helps inform the development of the AoS objectives.
- **Identifying sustainability problems**: The baseline has been used to identify key sustainability issues relevant to the NPS to help highlight where the AoS should be focussed and to inform the AoS objectives.

[16] Office of the Deputy Prime Minister (2005) *Practical Guide to the Strategic Environmental Assessment Directive*. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7657/practicalguidesea.pdf [Accessed August 2017].

- **Developing AoS objectives**: Objectives (and associated appraisal guide questions) have been developed alongside definitions of significance to provide a means by which the effects of the draft NPS and the reasonable alternatives to the NPS can be meaningfully appraised.

1.4.8 The final element is to complete consultation with appropriate bodies to ensure that the AoS covers the likely significant sustainability effects of the draft NPS. This is also consistent with regulation 12 of the SEA Regulations which concerns the appropriateness, scope and level of detail of the information that must be included in the subsequent AoS Report (which will also meet the SEA requirements for the environmental report). This AoS Scoping Report has been produced for this purpose and sets out the proposed scope and approach to the appraisal.

1.5 Consultation and Stakeholder Engagement

Overview

1.5.1 Consultation lies at the heart of any meaningful assessment or appraisal process and is based on the key principle that the plan and programme making is better where it is transparent, inclusive and uses information that has been subject to public scrutiny. In this context, the intention is that those with an interest in, or are affected by, the draft NPS should have the opportunity to present their views.

Technical Consultation on the Scoping Report

1.5.2 This Scoping Report is being issued for consultation to the UK statutory SEA and other bodies identified in **Box 1.1** for comment and may be amended as a result. This consultation is limited to agreeing the scope of the AoS that is due to be produced.

1.5.3 While this is a technical consultation primarily aimed at a number of statutory and selected consultees, Defra is making this document publicly available and will consider any comments from the public or other organisations that are received prior to the close of the consultation period.

Box 1 AoS Scoping Consultees

UK SEA Statutory Consultation Bodies	Additional (Specialist) Consultees
• Environment Agency	• Water companies
• Historic England	• Ofwat
• Natural England	• Consumer Council for Water
• Scottish Natural Heritage	• Planning Inspectorate
• Historic Scotland	• National Infrastructure Commission
• Scottish Environment Protection Agency	• Committee on Climate Change
• Scottish Government	• Marine Management Organisation
• Natural Resources Wales	• National Parks Authority
• Cadw (Welsh Government historic environment service)	• Joint Nature Conservation Committee
• Welsh Government	
• Department of the Environment's 'Environment and Heritage Service', Northern Ireland	

1.5.4 The draft NPS, and accompanying AoS Report, will be made available in 2018 in a full public and parliamentary consultation.

1.5.5 Should trans-boundary effects be identified in the AoS of the draft NPS, comment will be sought from the EU member states that may be affected in a separate trans-boundary consultation.

1.6 Habitats Regulations Assessment

1.6.1 In accordance with Regulation 102(1) of The Conservation of Habitats and Species Regulations 2010 (as amended)[17] ('the Habitats Regulations'), there is a need for Defra to consider whether the NPS is likely to have a significant effect on any specified European sites. Such sites include Special Areas of Conservation (SACs), designated under Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, and Special Protection Areas (SPAs), designated under Council Directive 2009/147/EC on the Conservation of Wild Birds. Ramsar Sites (designated under the 1976 Ramsar Convention) are not European sites but under UK planning policy are given the same level of protection[18]. If this screening were to show that such effects were likely, Defra would then undertake an appropriate assessment of the implications for these sites.

1.6.2 A report[19] detailing the proposed approach to the HRA of the NPS has been prepared and is being published for consultation alongside this AoS Scoping Report. The HRA Methodology Report is available to view via the following link: https://consult.defra.gov.uk/water/nps-water-supply-planning-act-2008.

1.6.3 The HRA will be reported separately from the AoS. However, the conclusions of the HRA will help to inform the appraisal process, particularly in respect of the potential effects of the draft NPS on biodiversity.

1.7 How Information in this AoS Scoping Report Meets the Requirements of the SEA Directive

1.7.1 To meet the requirements of the SEA Directive and its transposing regulations, information on the following is required in this AoS Scoping Report:

- the current state of the environment and its likely evolution without the implementation of the plan or programme;
- the environmental characteristics of areas likely to be significantly affected;
- any relevant existing environmental problems, especially in terms of nature conservation; and
- the relationship of proposals with other relevant plans and programmes.

1.7.2 **Table 1.1** details how these requirements have been addressed in this Scoping Report. A quality assurance checklist is contained at **Appendix A**.

[17] Regulation 61(1) states: "*A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which —*
(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and
(b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications for that site in view of that site's conservation objectives."
[18] Paragraph 118 of the National Planning Policy Framework (DCLG, 2012) states that listed or proposed Ramsar sites should be given the same protection as European sites
[19] Amec Foster Wheeler (2017) *Habitats Regulations Assessment of the National Policy Statement for Water Resources: Methodology Report*.

Table 1.1 SEA Information Requirements Addressed within this AoS Scoping Report

SEA Information Requirements	AoS Scoping Report Reference
Schedule 2 of the SEA Regulations (SI 2004 No. 1633) sets out the following information requirements:	*The following sections of this Scoping Report address the requirements of the SEA Regulations:*
1. An outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes.	This requirement is addressed in Section 2 (The Draft NPS for Water Resources), Section 3 (Context and Baseline) and Appendix B. It will be further reported on in the AoS Report.
2. The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.	This requirement is addressed in Appendix B. It will be further reported on in the AoS Report.
3. The environmental characteristics of areas likely to be significantly affected.	This requirement is addressed in Appendix B. It will be further reported on in the AoS Report.
4. Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Council Directive 79/409/EEC on the conservation of wild birds[20] and Council Directive 92/43/EEC (the Habitats Directive[21]).	This requirement is addressed in Section 3 (Context and Baseline) and Appendix B. It will be further reported on in the AoS Report and in a separate HRA Screening Report.
5. The environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.	This requirement is addressed in Section 3 (Context and Baseline) and Appendix B. It will be further reported on in the AoS Report.
6. The likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects, on issues such as: biodiversity; population; human health; fauna; flora; water; air; climatic factors; material assets; cultural heritage, including architectural and archaeological heritage; landscape; and the inter-relationship between the issues referred to in sub-paragraphs (a) to (l).	A provisional indication of the likely effects of the draft NPS has been provided in Section 2 (The Draft NPS for Water Resources) to provide direction about which environmental (and socio-economic) issues need to be considered. However, it is the purpose of Stage B of the AoS process to assess the potential effects of the draft NPS and reasonable alternatives. In consequence, more specific detail on the likely significant effects of the draft NPS will be provided in the AoS Report.
7. The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.	It is not appropriate to consider this requirement at this stage in the appraisal process. However, in broad terms the 'mitigation hierarchy' will be applied where practicable and results reported in the AoS Report. Examples of these types of measure are included in Section 4 (Draft Appraisal Framework).
8. An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.	This requirement is addressed in Section 2 (The Draft NPS for Water Resources) and Section 3 (Context and Baseline) and will be further reported on in the AoS Report.
9. A description of the measures envisaged concerning monitoring of environmental conditions	As detailed at point 7 above, it is not appropriate to consider this requirement at this stage. However, where practicable, monitoring regimes will be identified through the AoS Report.
10. A non-technical summary of the information provided under paragraphs 1 to 9.	A Non-Technical Summary is provided with this Scoping Report. A Non-Technical Summary will also accompany the AoS Report.

[20] Council Directive 79/409/EEC on the conservation of wild birds. The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981, 1989 c.69 (as amended) and The Conservation (Natural Habitats, &c.) Regulations 1994, S.I 2716, (as amended).

[21] Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (EC Habitats Directive). In the UK the Directive has been transposed into national laws by means of the Conservation (Natural Habitats, & c.) Regulations 1994 (as amended) (see footnote 22) (Habitats Regulations). The 'Habitats Regulations' apply to the UK land area and its territorial sea (to 12 nautical miles from the coast), and are supported by government policy guidance.

1.8 Scoping Report Structure

1.8.1 This Scoping Report is structured as follows:

- **Non-Technical Summary** - Provides a summary of the Scoping Report, including information on both the draft NPS and the proposed approach to the appraisal;
- **Section 1: Introduction** - Includes a summary of the draft NPS, an overview of the proposed scope, report contents and an outline of how to respond to the consultation;
- **Section 2: The Draft NPS for Water Resources** - Describes the background to the draft NPS, its objectives and regulatory context together with an overview of the potential structure and contents. This section also sets out the approach to identifying alternatives that will be considered and assessed as part of the AoS;
- **Section 3: Context and Baseline** - Provides details of the review of international, European, UK and national (England, Scotland and Wales) plans and programmes and baseline conditions for the environmental categories required by the SEA Directive and additional socio-economic topics. It summarises the key sustainability issues relevant to water resources. Further detailed information is contained at **Appendix B**;
- **Section 4: Draft Appraisal Framework** - Outlines the proposed scope of the appraisal before identifying the proposed AoS objectives and guide questions. Details are also provided with respect to how the appraisal will be undertaken including in relation to the consideration of indirect, synergistic and cumulative effects;
- **Section 5: Summary and Next Steps** - Details the next steps in the assessment process including a draft AoS Report structure;
- **Appendix A**: **Quality Assurance Checklist**
- **Appendix B: Baseline and Contextual Information** - Sets out the collated contextual and baseline information, on a topic-by-topic basis, for each of the appraisal topics. For each topic, this Appendix presents the following information (consistent with the SEA Directive reporting requirements):
  - Introduction - provides an overview of the topic;
  - Summary of Plans and Programmes - provides an overview of the policy context in which the NPS sits;
  - Overview of the Baseline - provides an overview of the baseline and the key topic specific baseline factors which will need to be considered as part of the appraisal. This includes the key environmental characteristics of each topic or area most likely to be significantly affected;
  - Existing Problems - highlights some of the existing pressures on the topic area, particularly in relation to the NPS;
  - Likely Evolution of the Baseline - provides an overview of how the baseline is likely to change in the absence of the NPS, an understanding of this is key to understanding the effects of the NPS on the topic area;
  - Assessing Significance - outlines the objectives and guide questions related to the topic area which have been identified for use in the appraisal of the effects of the draft NPS alongside guidance that will be utilised during the appraisal to help determine the relative significance of potential effects on the objectives.
- **Appendix C: Definitions of Significance** – Details the proposed thresholds that will be used to steer judgements made in the appraisal process.

1.9 How to Comment on this Scoping Report

1.9.1 This Scoping Report is being issued for consultation between 13th November and 22nd December 2017. Details of how to respond to the consultation are provided below.

This Consultation: How to Give Us Your Views

1.9.2 We would welcome your views on any aspect of this AoS Scoping Report. However, we would particularly welcome responses to the following questions:

Consultation Questions	
1.	**Do you agree with the main issues identified in the topic areas (Section 3.3)? Specifically:** **a) Are there issues included in the proposed scope of the appraisal that you think should be removed? If so why?** **b) Are there relevant issues that have not been reflected in the proposed scope of the appraisal that you think should be included? If so, why?**
2.	**Does the AoS Scoping Report set out sufficient information to establish the context for the appraisal, both in terms of the scope of the baseline analysis presented, and the plans and programmes reviewed (Appendix B)? If not, which areas do you think have been missed from the baseline analysis and/or what additional plans or programmes should be included?**
3.	**Do the AoS objectives and guide questions (Section 4.3) cover the breadth of issues appropriate for appraising the effects of the draft NPS? If not, which objectives should be amended and how? Or which guide questions should be amended and how? Are there other objectives or guide questions that you believe should be included?**
4.	**Do you have any comments on the discussion on potential reasonable alternatives to the NPS (Section 2.4)? Should any further alternative scenarios be considered? Please support your suggestion with your reasoning.**

1.9.3 Please provide your comments via the Citizen Space survey at https://consult.defra.gov.uk/water/nps-water-supply-planning-act-2008. If you have any questions about the consultation please contact the Defra team at:

Email: WaterSupplyNPS@defra.gsi.gov

Post: Water Infrastructure Team – Area 3D

Department for Environment, Food and Rural Affairs,

Nobel House,

17 Smith Square,

London,

SW1P 3JR

2. The Draft National Policy Statement for Water Resources

2.1 Introduction

2.1.1 As detailed in **Section 1**, the Government will prepare an NPS for nationally significance water resources infrastructure and this work is being led by Defra.

2.1.2 This section provides further detail in respect of the planning context for nationally significant infrastructure projects (**Section 2.2**) and the scope and likely contents of the draft NPS (**Section 2.3**). It also sets out the approach to the identification of reasonable alternatives to the NPS that could be considered during the appraisal process (**Section 2.4**).

2.2 Nationally Significant Infrastructure Projects

Legislative and Consenting Background

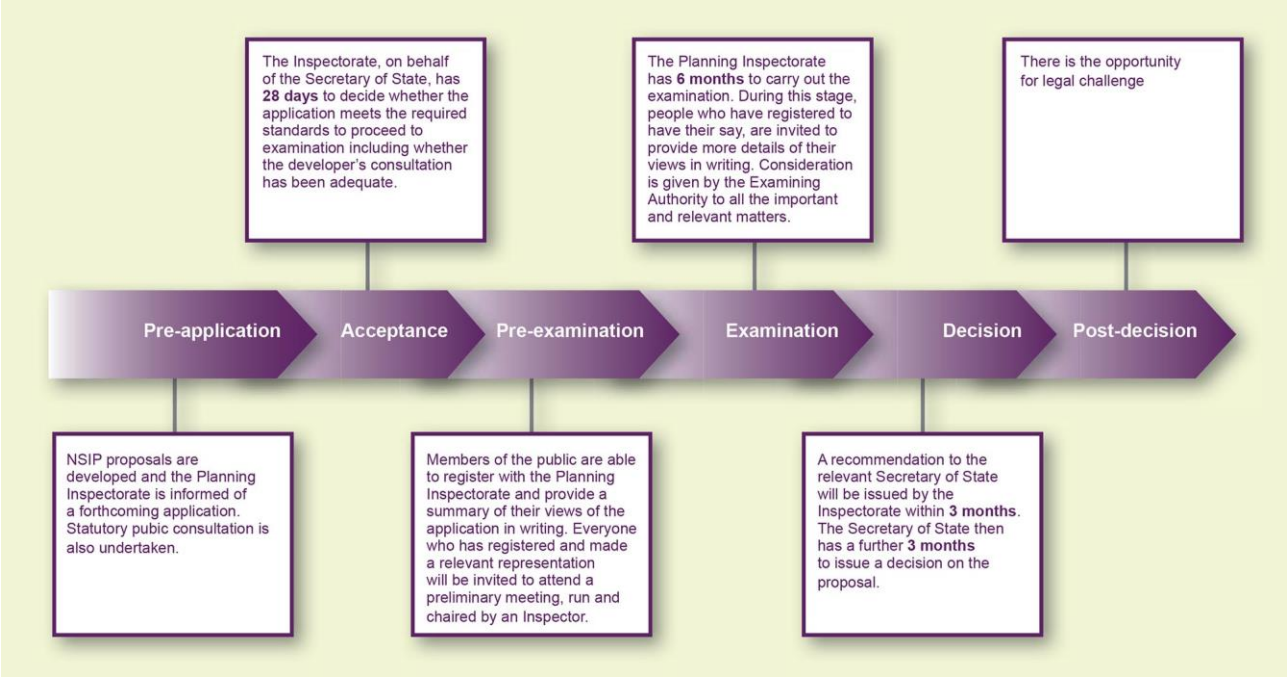
2.2.1 The Planning Act 2008 introduced a procedure to streamline the decision-making process for nationally significant infrastructure projects. Under the Act, a developer wishing to construct a nationally significant infrastructure project must first apply for development consent. All development consent order applications which may be made pursuant to the NPS, once designated, will be subject to the requirements of the planning system under the Planning Act 2008. As part of this process, the developer should consider whether the proposed nationally significant infrastructure project is considered to be an Environmental Impact Assessment[22] development under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the Environmental Impact Assessment Regulations). Similarly, the applicant should consider the potential effects of the proposed development on protected habitats through consideration of requirements of the Conservation of Habitats and Species Regulations 2010 (as amended)[23].

2.2.2 For such projects, the relevant Secretary of State will appoint an 'Examining Authority' to examine the application. The Examining Authority will be from the Planning Inspectorate, and will be either a single Inspector or a panel of three or more Inspectors. Once the examination has been concluded, the Examining Authority will make a recommendation to the Secretary of State, who will make the decision on whether to grant or to refuse consent.

2.2.3 There are six key stages in the development consent application process for nationally significant infrastructure projects and these are shown in **Figure 2.1**.

[22] Planning Inspectorate (2015) *Preliminary Environmental Information, Screening and Scoping: Advice note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping*.
[23] Planning Inspectorate (2015) *Habitats Regulations Assessment: Advice note ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects*.

Figure 2.1 The Development Consent Process for Nationally Significant Infrastructure Projects



2.2.4 Part 3 of the Planning Act 2008 lists the projects that are to be determined as nationally significant infrastructure projects.

2.2.5 In addition to development consent under the Planning Act 2008, a developer will also need permits from the environmental regulator before constructing a nationally significant infrastructure project. In England, the Environment Agency is responsible for environmental protection under the Environmental Permitting (England and Wales) Regulations 2016. There are separate environmental regulators in other parts of the UK. The Environment Agency will therefore be responsible for regulating the environmental aspects of developing water resources infrastructure (for example, regulating the impacts of any changes to local hydrological regimes as a result of the proposed infrastructure).

National Policy Statements

2.2.6 NPSs set out the criteria by which applications for nationally significant infrastructure projects within their scope are determined. They include the Government's objectives for the development of nationally significant infrastructure in a particular sector and set out:

- how this will contribute to sustainable development;
- how these objectives have been integrated with other Government policies;
- how actual and projected capacity and demand have been taken into account;
- relevant issues in relation to safety or technology;
- circumstances where it would be particularly important to address the adverse impacts of development; and
- specific locations, where appropriate, in order to provide a clear framework for investment and planning decisions.

2.2.7 They also include any other policies or circumstances that Ministers consider should be taken into account in decisions on infrastructure development.

2.2.8 NPSs undergo a process of public consultation and parliamentary scrutiny before being designated (i.e. published). They provide the framework within which Inspectors make their recommendations to the Secretary of State.

2.3 Possible Purpose, Scope and Contents of the National Policy Statement for Water Resources

Purpose of the National Policy Statement for Water Resources

2.3.1 As detailed in **Section 1.3**, the NPS for Water Resources will set out the need for nationally significant infrastructure projects related to water resources, and the Government's policies to deliver them. It will be used as the primary basis for the examination by the Examining Authority, and decisions by the Secretary of State, on development consent order applications for water resources infrastructure in England that falls within the definition of a nationally significant infrastructure project as defined in the Planning Act 2008 (subject to any future amendments). If circumstances were to arise requiring planning consideration of nationally significant water resources infrastructure elsewhere in the UK, planning decisions and environmental assessments would be pursued through the relevant, devolved planning system.

2.3.2 The NPS is also intended to work alongside the statutory water resources planning process and inform the forthcoming water company business plans for 2020 – 2025 by clearly describing the case for water infrastructure, in turn providing improved clarity and confidence to the delivery phase of any preferred large supply schemes.

2.3.3 Defra has identified the following vision and objectives for the NPS:

"*The Government's vision is for a water industry that works for everyone; one that provides resilient services now and in the future at a price that business and household customers can afford.*

As part of this, the Government will support the delivery of nationally significant water resource supply infrastructure that:

1. *secures long-term resilience to the impacts of drought and climate change;*
2. *supports both population growth and economic growth across the country;*
3. *supports the achievement of sustainability goals and enhancing the environment; and*
4. *offers best value for customers so that water needs can be met in an affordable way both now and in the future."*

2.3.4 Development of the draft NPS is being guided by the following three high level principles:

- Principle 1: The NPS will set out the need for water infrastructure as part of a 'twin track' approach to managing water resources.
- Principle 2: The NPS will reinforce and make clear the role of water companies' WRMPs in identifying the most appropriate water resources schemes, including new water resources infrastructure.
- Principle 3: The NPS will reiterate the importance of developing and designing water resources schemes that meet the government's objective to enhance the environment.

Infrastructure to be Covered by the National Policy Statement

2.3.5 The infrastructure to be covered by the NPS will reflect the definitions for nationally significant infrastructure that are related to water as currently set out in Sections of 27 and 28 of the Planning Act 2008. These include:

- the development of dams or reservoirs where they are constructed in England by one or more water undertakers and have a capacity in excess of 10 million cubic metres of water;

- the alteration of dams or reservoirs where they are located in England, altered by one or more water undertakers and result in an increase in capacity in excess of 10 million cubic metres of water;
- the transfer of water resources, where the development is carried out in England by one or more water undertakers, is in excess of 100 million cubic metres of water per year, does not relate to the transfer of drinking water and will enable the transfer of water resources:
  - between river basins in England,
  - between water undertakers' areas in England, or
  - between a river basin in England and a water undertaker's area in England.

2.3.6 As set out in **Section 1.3**, alongside the development of the NPS, the Government is reviewing the Planning Act 2008 definitions of the types of water supply infrastructure that are classed as 'nationally significant' in order to ensure that the right type and scale of projects are included to address the water scarcity challenge. It intends to consult on options to amend these thresholds in winter 2017.

Scope of the National Policy Statement

2.3.7 The NPS, once designated, will provide the framework for decision making on development consent order applications for the construction of nationally significant infrastructure related to water resources in England. The NPS will be non-site specific and will present the evidence base and identify how new strategic infrastructure contributes towards meeting Government objectives. It will also provide planning policy guidance against which development consent order applications will be examined.

Indicative Contents of the National Policy Statement

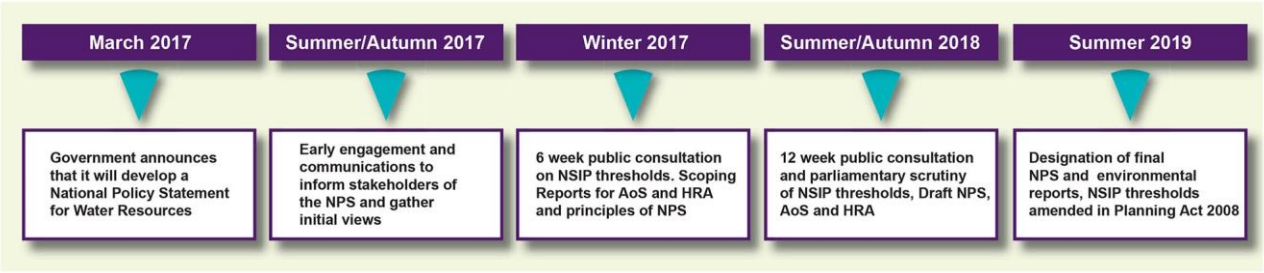
2.3.8 The NPS is likely to contain information concerning:

- the policy context for water resources infrastructure;
- the need for water resources infrastructure;
- development principles including criteria for good design; and
- generic impacts and siting considerations, including generic mitigation measures.

Preparation of the National Policy Statement

2.3.9 The key stages and indicative timetable for preparation of the NPS are set out in **Figure 2.2**. Public consultation on the principles for the NPS (and nationally significant infrastructure project thresholds) is taking place concurrently with the consultation on this Scoping Report. The responses to this consultation will help guide the development of the draft NPS that will be subject to public consultation in summer/autumn 2018. Taking into account the responses received to this consultation, any new evidence and assessment, Defra will then finalise the NPS. It is currently expected that designation of the NPS will take place by summer 2019.

Figure 2.2 Preparation of the National Policy Statement



AOS=Assessment of sustainability, **HRA**=Habitats regulation assessment, **NSIP**=Nationally significant infrastructure project, **NPS**=National policy statement

2.4 Reasonable Alternatives to the Draft National Policy Statement for Water Resources

Overview

2.4.1 Article 5(1) of the SEA Directive requires the identification, description and evaluation of "*the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives [our emphasis] taking into account the objectives and the geographical scope of the plan or programme*". Information to be provided includes "*an outline of the reasons for selecting the alternatives dealt with*" (Annex I (h)).

2.4.2 The European Commission guidance[24] on the SEA Directive discusses possible interpretations of handling 'reasonable alternatives' as required by article 5(1). It states that "*The alternatives chosen should be realistic. Part of the reason for studying alternatives is to find ways of reducing or avoiding the significant adverse effects of the proposed plan or programme*".

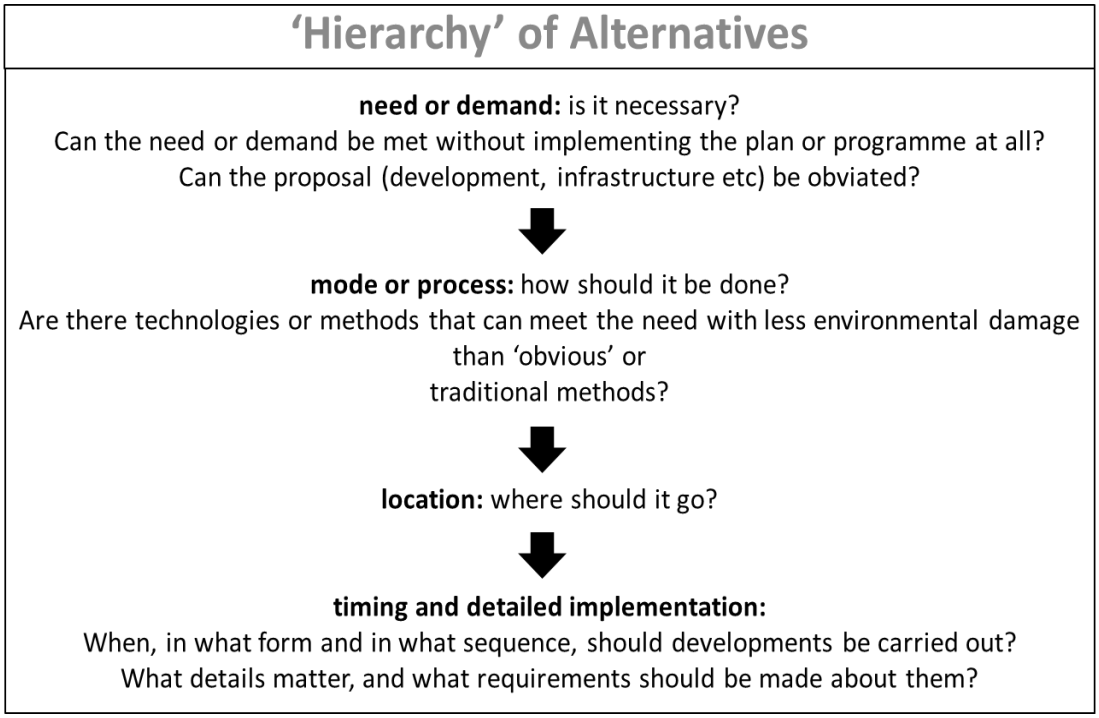
2.4.3 Department for Communities and Local Government's (DCLG) guidance[25] on the issue of alternatives within an emerging NPS is that:

"*The accompanying Appraisal of Sustainability should support this by considering the implications of the alternatives to building new infrastructure. If some of the possible alternatives go against established Government policy, then consider the scope for considering policy alternatives within the AoS without reopening settled policy*".

2.4.4 The Office of the Deputy Prime Minister's SEA guidance[26] includes a 'hierarchy' of alternatives (see **Figure 2.3**).

[24] European Commission (2001*) Implementation Of Directive 2001/42 On The Assessment Of The Effects Of Certain Plans And Programmes On The Environment.* Available from http://ec.europa.eu/environment/archives/eia/pdf/030923_sea_guidance.pdf [Accessed August 2017]
[25] DCLG (2013) *How to prepare a National Policy Statement – A High Level Advice Note for Departments' Department for Communities and Local Government Aug 2013*.
[26] ODMP (2005) *A Practical Guide to the Strategic Environmental Assessment Directive*. Available from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7657/practicalguidesea.pdf [Accessed August 2017].

Figure 2.3 Hierarchy of Alternatives



2.4.5 Consideration of the reasonable alternatives for the NPS should take into account the hierarchy of alternatives. The following sets out provisional thinking on the application of the questions to the NPS for Water Resources and explores some of the factors that will be considered in developing the reasonable alternatives.

2.4.6 **With regard to the first question of is it necessary** (whether nationally significant water resources infrastructure is necessary), the Government has concluded that a 'twin track' approach to meeting future water resource needs is required, that utilises both demand management and regionally and nationally significant new water resources infrastructure. The NPS will establish the need for new nationally significant infrastructure in line with the Government's stated objectives (see **Section 2.3**) and will detail the evidence base for this conclusion. Ofwat and water companies have also identified a need for strategic water resources infrastructure in conjunction with optimising demand management and improved local schemes. As it is the Government's view that there is a need for nationally significant water resources infrastructure, the question of whether this infrastructure is necessary is not considered likely to be a relevant or feasible alternative.

2.4.7 **A second aspect of the first question of whether it is necessary** is whether the NPS is required. Whilst it is the view of Government that an NPS would reduce uncertainty in the planning process and facilitate the timely delivery of nationally significant water resources infrastructure, it is still considered likely to be useful (in order to provide a comparator) to assess the socio-economic and environmental effects of proceeding with no NPS. In such circumstances, for nationally significant water resources infrastructure projects, a development consent order would still be required under the Planning Act 2008; however, its development and subsequent examination would be undertaken without the explicit guidance of an NPS.

2.4.8 **With regard to the second question of how it should be done**, this assumes that the NPS will be developed and that there are a number of alternatives that could be considered concerning its scope. These could include (but should not be viewed as being limited to):

- amending infrastructure types in the Planning Act 2008 and further specifying criteria for these infrastructure types in the NPS (the least flexible alternative);
- specifying criteria for types of infrastructure in the Planning Act 2008 which the NPS will refer to; and

- setting out generic nationally significant water resources infrastructure criteria in the Planning Act 2008 which are not specific to any type of infrastructure but which consider the volume thresholds a scheme would need to meet to be nationally significant (the most flexible alternative).

2.4.9 These alternatives will be explored more fully in the parallel consultation on the thresholds for nationally significant water resources infrastructure.

2.4.10 **The third question within the hierarchy, 'where should it go?**' requires consideration specifically of the alternatives to the proposed non-site specific NPS, which could include:

- an NPS that is non-site specific but applies location criteria (for example, criteria based on excluding areas of specific environmental concern such as nationally/internationally designated nature conservation sites or national landscape designations);
- a location-specific NPS that identifies candidate sites for nationally significant water resources infrastructure. There are examples of other NPSs taking a site specific approach; for example, the nuclear generation NPS (EN-6) identifies potentially suitable sites for the deployment of new nuclear power stations whilst the draft Airports NPS identifies Heathrow as the preferred location for new runway capacity and infrastructure in south east England; and
- a location-specific NPS that sets thresholds for nationally significant water resources infrastructure based on the scale of the supply demand deficit forecast by a water company and for which demand management and local supply options would be insufficient.

2.4.11 In all of the above instances, the approach would need to relate to the projects identified in the WRMPs for companies operating wholly or mainly in England.

2.4.12 **With regard to the fourth question, the timing and detailed form of implementation**, as these are issues that would be addressed by a developer in an application for development consent, they are considered outside the scope of a national, long-term assessment.

2.4.13 **The application of the hierarchy of alternatives to the NPS for Water Resources above outlines preliminary views of the alternatives that could be considered as the NPS is developed. They are not definitive or intended to prevent other options coming forward, either as part of the ongoing analysis or as a consequence of consultation on this Scoping Report. All alternatives that are proposed through the consultation will be considered, with those considered reasonable and realistic (given the objectives of the NPS) taken forward for appraisal.**

3. Context and Baseline

3.1 Introduction

3.1.1 This section, alongside **Appendix B**, provides an overview of the context and baseline information that has informed the development of the appraisal framework (see **Section 4**). It includes details of the review of other relevant plans and programmes (**Section 3.2**) and baseline information (**Section 3.3**) and culminates in the identification of key issues to be considered by the draft NPS and AoS (**Section 3.4**).

3.1.2 Baseline information and relevant plans and programmes have been considered for England, Wales and Scotland. The proposed geographical scope of the context and baseline has been arrived at through consideration of the fact that the hydrological systems of each country cross national borders.

3.1.3 Annex I of the SEA Directive requires that the subsequent appraisal (to be contained in the AoS Report) should include information on the "*likely significant effects on the environment, including on issues such as: biodiversity; population; human health; fauna; flora; soil; water; air; climatic factors; material assets; cultural heritage, including architectural and archaeological heritage; landscape; and the inter-relationship between the issues referred to*".

3.1.4 These topics have formed the basis for the collection and analysis of contextual and baseline information alongside additional socio-economic topics. **Table 3.1** presents how the topics in this report are consistent with the SEA Directive requirements. Whilst information is presented by topic, the appraisal of the draft NPS will consider linkages between the topics as appropriate.

Table 3.1 Topics Considered in this Scoping Report

Annex I SEA Directive Effects	**Topics Considered in this AoS Scoping Report**
Biodiversity, Flora and Fauna	Biodiversity and Nature Conservation
Population	Population, Economics and Skills
Human Health	Human Health
Soil	Land Use, Geology and Soils
Water	Water Quality
	Water Quantity
Air	Air Quality
	Noise
Climatic Factors	Climatic Factors (including climate change mitigation and adaptation and energy)
	Flood Risk and Coastal Change
Material Assets	Waste and Resources
	Traffic and Transport

Annex I SEA Directive Effects	Topics Considered in this AoS Scoping Report
Cultural Heritage, including architectural and archaeological heritage	Cultural Heritage (including architectural and archaeological heritage)
Landscape	Landscape and Townscape

3.1.5 Consistent with the requirements of Annex 1 (b), (c) and (d) of the SEA Directive, **Appendix B** sets out the collated contextual and baseline information, on a topic-by-topic basis, for each of the 14 AoS topics above, structured as follows:

- I**ntroduction**: provides an overview and definition of the topic.
- **Review of Plans and Programmes**: provides an overview of the international/European, UK and national (England, Scotland and Wales) policy context in which the draft NPS sits.
- **Overview of the Baseline**: summarises the baseline for each of the topic areas at the UK and national (England, Scotland and Wales) level. This includes the key environmental characteristics of each topic or area most likely to be significantly affected.
- **Summary of Existing Problems Relevant to Water Resources**: identifies the key topic specific issues that will need to be considered as part of the appraisal.
- **Likely Evolution of the Baseline**: describes the likely evolution of baseline conditions without the implementation of the draft NPS, an understanding of this is key to determining the effects of the NPS on the topic area.
- **Assessing Significance**: outlines the objectives and guide questions related to the topic area which have been identified for use in the appraisal of the effects of the draft NPS alongside guidance that will be utilised during the appraisal to help determine the relative significance of potential effects on the objectives.

3.2 Review of Plans and Programmes

3.2.1 One of the first steps in undertaking the AoS (and to meet the requirements of the SEA Directive) is to identify and review other relevant plans, programmes, policies and strategies (hereafter referred to as 'plans and programmes') that could have an effect on the draft NPS. These may be plans and programmes at an international/European, UK or national level, as relevant to the scope of the NPS. For the purposes of this AoS, it is assumed that the broad objectives of extant European Union (EU) legislation will be maintained once the UK has withdrawn from the EU and that similar or equivalent environmental protections will remain in place.

3.2.2 The summary within each topic section in **Appendix B** identifies the relationships between the draft NPS and these other documents; i.e. how the NPS could be affected by the other plans' and programmes' aims, objectives and/or targets, or how it could contribute to the achievement of any environmental and sustainability objectives and targets set out in these plans and programmes.

3.2.3 The review of plans and programmes has also informed the environmental and socio-economic baseline and helped determine the key sustainability issues for the NPS and AoS. It will also provide the policy context for the appraisal of the draft NPS.

3.2.4 From the review of these plans and programmes, a number of key environmental protection and socio-economic objectives have been identified. These are summarised in **Table 3.2**, along with an indication of where the policy objectives are reflected in the AoS objectives (discussed further in **Section 4**). The key objectives have been structured around the AoS topics set out in **Table 3.1**.

Table 3.2 Summary of Key Objectives Identified from the Review of Plans and Programmes Relevant to the AoS

Topic	Summary Objectives from Other Plans and Programmes	AoS Objectives Link (see Section 4)
1. Biodiversity and Nature Conservation	**International:** • to protect international/European protected wildlife areas (including Special Areas of Conservation, Special Protection Areas and Ramsar sites); • to contribute to the conservation of global biodiversity; • to ensure the conservation and enhancement of natural heritage including wetland conservation; • to ensure the conservation of biodiversity in order to contribute to the health and wellbeing of the population; • to identify where operators are financially liable for threats of or actual damage to the environment under the "polluter pays" principle; and • to anticipate, prevent and act on causes of significant reduction or loss of biodiversity. **UK, England, Scotland and Wales:** • to conserve and enhance biological diversity within the UK; • to ensure that the quality of habitats and biodiversity is enhanced or at least conserved and take account of key priority habitats and species in decision making; • to protect the network of nationally protected wildlife areas (including Sites of Special Scientific Interest); • to create an ecological network which is resilient to changing pressures; • to ensure new developments contribute to a net gain in the value of nature; and • to safeguard vulnerable non-renewable resources for future generations.	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity Objective 7: Flood Risk and Coastal Change Objective 10: Climatic Factors
2. Population, Economics and Skills	**International:** • to achieve economic development and reduction of inequalities whilst adhering to the principles of social and environmental justice and sustainable development; • to promote full employment, quality and productivity at work and promote inclusion by addressing disparities in access to labour markets; • to promote the economic development of disadvantaged areas within the European Union; • to grant public rights to information, public participation and access to justice; and • to undertake appropriate consultation with consultation bodies and the public. **UK, England, Scotland and Wales:** • to promote economy and efficiency in water infrastructure investment decisions and value to consumers; • to create strong, prosperous and sustainable communities; • to narrow the gap between deprived neighbourhoods and the rest of the UK; • to remove barriers to growth; • to develop and support successful, thriving, safer and inclusive urban and rural communities; • to support the transition to a low carbon economy; • to develop a culture of innovation and research and development; and • to enhance educational attainment and skills.	Objective 2: Population, Economics and Skills Objective 3: Human Health
3. Human Health	**International:** • to ensure children have safe water and clean air;	Objective 2: Population, Economics and Skills Objective 3: Human Health

Topic	Summary Objectives from Other Plans and Programmes	AoS Objectives Link (see Section 4)
	• to ensure that measures to improve the health and wellbeing of the population are appropriately supported; • to preserve, protect and improve the quality of the environment and to protect human health; • to promote good health throughout the lifespan of the population; • to reduce inequities in health; • to prevent critical health effects as a result of high levels of noise in and around dwellings; and • to avoid, prevent or reduce harmful effects including annoyance due to exposure to environmental noise. **UK, England, Scotland and Wales:** • to reduce and where possible avoid the effects and causes of statutory nuisance and to comply with all relevant UK environmental legislation; • to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business; • to ensure noise reduction occurs where there may be adverse impacts of noise on human health; • to protect and enhance the quality of the environment, including the availability of green space; • to promote good health and good quality of life through the effective management of noise in the context of Government policy on sustainable development; and • to maintain and enhance public and worker safety.	
4. Land Use, Geology and Soils	**International:** • to protect soil on the basis of the principles of: preservation of soil functions; prevention of soil degradation (and mitigation of its effects); and restoration of degraded soils; • to take precautionary measures where soil function may be affected; • to identify areas at risk of erosion, organic matter decline, salinisation, compaction and landslides; and • to limit the introduction of dangerous substances into soils and to avoid accumulation in soil that would hamper soil functions and create a risk to human health and the environment. **UK, England, Scotland and Wales:** • to ensure contaminated land is identified and remediated where appropriate; • to protect and preserve the environment and guard against pollution to land; • to preserve, where possible, the best and most versatile agricultural land; • to promote more sustainable patterns of development; • to adopt a sustainable approach to land use though consideration of: economic development, social inclusion, environmental protection and prudent use of resources; • to promote development of previously developed land; • to protect and enhance geological conservation interests and soils; • to safeguard workable resources and ensure that an adequate and steady supply is available to meet the needs of the construction, energy and other sectors; and • to secure the sustainable restoration of sites to a relevant use after operation has ceased.	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity
5. Water Quality	**International**: • to ensure that there is no deterioration to the quality of freshwater and marine environments; • to ensure that the water and ecological quality of freshwater and marine environments is conserved and enhanced; • to ensure sustainable use of water resources and reduced pollution and physical impacts;	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity

Topic		Summary Objectives from Other Plans and Programmes	AoS Objectives Link (see Section 4)
		• to protect the environment from the adverse effects of urban waste water discharges and discharges from industrial processes; • to prevent the pollution of groundwater; and • to protect the health of European water consumers. **UK, England, Scotland and Wales:** • to protect and enhance the water environment in a way that allows it to adjust flexibly to a changing climate; • to manage water resources sustainably without causing environmental damage; • to maintain and enhance water quality; • to maintain and enhance the quality of water sources; • to understand and manage diffuse pollution sources; and • to improve the quality of the UK water environment and the ecology which it supports.	
6.	Water Quantity	**International:** • to encourage the sustainable use of water resources and protect aquatic ecology, drinking water and bathing waters; • to facilitate the integrated management of both the coastal zone and river basin districts to ensure sustainable use and protection of resources; and • to encourage the uptake of sustainable drainage systems (SuDS). **UK, England, Scotland and Wales:** • to reduce pressure on the environment caused by water taken for human use; • to promote water use efficiency; • to protect vital water supply infrastructure; • to protect and enhance the water environment in a way that allows it to adjust flexibly to a changing climate; • to secure long term resilience of water supplies to the impacts of drought and climate change; and • to increase water efficiency throughout the cycle of abstraction, treatment, supply and use.	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity
7.	Flood Risk and Coastal Change	**International:** • to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity; and • to provide a consistent approach to managing flood risk across Europe. **UK, England, Scotland and Wales:** • to reduce the threat of flooding to people and their property; • to avoid inappropriate development in areas at risk of flooding; • to sustainably manage risks from flooding and coastal erosion; • to ensure that policies and decisions in coastal areas are based on an understanding of coastal change over time; • to enable an appropriate and consistent approach to marine planning across UK waters, and to ensure the sustainable use of marine resources and the strategic management of marine activities from renewable energy to nature conservation, fishing, recreation and tourism; and • to prevent new development from being put at risk from coastal change.	Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 5: Water Quality Objective 6: Water Quantity Objective 7: Flood Risk and Coastal Change Objective 10: Climatic Factors
8.	Air Quality	**International:** • to promote cleaner transport technologies and manage the demand for transport to prevent detrimental effects to human health from air pollution; • to ensure that air quality is enhanced or at least maintained and ensure that measures are adopted to support continued air quality standards;	Objective 1: Biodiversity and Nature Conservation Objective 3:Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality

Topic	Summary Objectives from Other Plans and Programmes	AoS Objectives Link (see Section 4)
	• to monitor and reduce trans-boundary atmospheric pollution; • to maintain air quality where it is good and improving; • to attain levels of air quality that do not give rise to significant negative impacts on, and risks to, human health and the environment; and • to reduce emissions from industrial processes. **UK, England, Scotland and Wales:** • to improve air quality and reduce the impact of air pollution on human health; • to improve air quality and reduce the impact of air pollution on biodiversity; and • to ensure new development is appropriate for its location and takes into account the effects of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution.	Objective 6: Water Quantity Objective 8: Air Quality
9. Noise	**International:** • to ensure that measures to improve the health and wellbeing of the population are appropriately supported; • to preserve, protect and improve the quality of the environment and to protect human health; • to prevent critical health effects as a result of high levels of noise in and around dwellings; and • to avoid, prevent or reduce harmful effects including annoyance due to exposure to environmental noise. **UK, England, Scotland and Wales:** • to reduce, and where possible avoid, the effects and causes of statutory nuisance and to comply with all relevant UK environmental legislation; • to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business; and • to ensure noise reduction occurs where there may be adverse impacts of noise on human health.	Objective 1: Biodiversity and Nature Conservation Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 9: Noise
10. Climatic Factors (including climate change and adaptation)	**International:** • to prevent “dangerous” human interference with the climate system, namely through reductions in the emissions of greenhouse gases; • to promote renewable energy sources; • to promote sustainable development with regards to energy development, efficiency and consumption, transportation, industrial development, terrestrial and marine resource development and land use; • to reduce emissions of carbon dioxide and combat the serious threat of climate change; • to enable Europe’s transition to a low-carbon economy and increase its energy security; and • to ensure that energy efficiency measures are put in place and, where possible, renewables are employed to contribute to appropriate climate change targets. **UK, England, Scotland and Wales:** • to improve carbon management and help the transition towards a low carbon economy; • to promote climate change risk management in all aspects of business to ensure future resilience for communities, businesses and the environment; • to pursue new development in places that are resilient to climate change and in ways that are consistent with social cohesion and inclusion;	Objective 1: Biodiversity and Nature Conservation Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 5: Water Quality Objective 6: Water Quantity Objective 7: Flood Risk and Coastal Change Objective 8: Air Quality Objective 10: Climatic Factors Objective 12: Traffic and Transport

Topic	Summary Objectives from Other Plans and Programmes	AoS Objectives Link (see Section 4)
	• to conserve and enhance biodiversity, recognising that the distribution of habitats and species will be affected by climate change; • to reduce energy consumption; and • to minimise detrimental effects on the climate from greenhouse gases and maximise resilience to climate change.	
11. Waste and Resources	**International:** • to adopt waste management principles such as the "polluter pays principle", the "waste hierarchy" and "circular economy"; • to protect human health and the environment against harmful effects caused by the collection, transport, treatment, storage and tipping of waste; • to help Europe become a recycling society that seeks to avoid waste and uses waste as a resource; • to ensure the prudent use of resources; and • to ensure there are effective defences against potential hazards so that individuals, society and the environment are protected now and in the future. **UK, England, Scotland and Wales:** • to decouple waste growth (in all sectors) from economic growth and put more emphasis on waste prevention and re-use; • to increase diversion from landfill of municipal and non-municipal waste and secure better integration of treatment for all waste; • to ensure waste is disposed of as near as possible to the place of production; • to ensure the layout and design of new development supports sustainable waste management; • to make the best use of resources currently in use, reducing as far as practicable the quantity of material used and waste generated, and using as much recycled and secondary material as possible, before securing the remainder of material needed through new primary extraction; • to safeguard workable resources and ensure that an adequate and steady supply is available to meet the needs of the construction, energy and other sectors; • to minimise the impacts of aggregate extraction on local communities, built and natural heritage, and the water environment; and • to place higher activity waste out of reach and therefore improve security.	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity Objective 10: Climatic Factors Objective 11: Waste and Resources
12. Traffic and Transport	**International:** • to achieve a 60% cut in transport emissions by 2050 through: no more conventionally-fuelled cars in cities; 40% use of sustainable low carbon fuels in aviation; and a 50% shift of medium distance intercity passenger and freight journeys from road to rail and waterborne transport. **UK, England, Scotland and Wales:** • to encourage sustainable local travel and economic growth by making public transport and cycling and walking more attractive and effective, promoting lower carbon transport and tackling local road congestion; • to integrate planning and transport to promote more sustainable transport choices, promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling and to reduce the need to travel, especially by car; • to promote patterns of development which optimise the use of existing infrastructure, reduce the need to travel, provide safe and convenient opportunities for walking and cycling for both active travel and recreation, enable the integration of transport modes and facilitate freight movement by rail or water; and • to deliver national networks that meet long term needs, supporting a prosperous and competitive economy and improving overall quality of life, as part of a wider transport system.	Objective 1: Biodiversity and Nature Conservation Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 8: Air Quality Objective 12: Traffic and Transport

Topic	Summary Objectives from Other Plans and Programmes	AoS Objectives Link (see Section 4)
13. Cultural Heritage	**International:** • to identify, protect and preserve World Heritage Sites; • to protect and sustain the historic environment for the benefit of current and future generations; • to identify and protect important heritage features; and • to collect and disseminate scientific information on cultural and archaeological heritage to aid conservation and public awareness. **UK, England, Scotland and Wales:** • to protect listed buildings, scheduled monuments and buildings within conservation areas; • to protect and promote stewardship of the historic environment; • to promote positive planning and management to bring about sensible solutions to the treatment of sites with archaeological remains and to reduce the areas of potential conflict between development and preservation; • to protect heritage assets and their wider settings; and • to safeguard internationally and nationally-designated historically or culturally significant sites.	Objective 2: Population, Economics and Skills Objective 4: Land Use, Geology and Soils Objective 13: Cultural Heritage Objective 14: Landscape and Townscape
14. Landscape and Townscape	**International:** • to ensure that development is 'appropriate' particularly in relation to protected landscapes; and • to protect, manage and plan for landscape change throughout Europe. **UK, England, Scotland and Wales:** • to conserve and enhance nationally designated landscapes (Areas of Outstanding Natural Beauty and National Parks); • to maintain the character of the undeveloped coast, protecting and enhancing its distinctive landscapes, particularly in areas defined as Heritage Coast; • to provide public access to the countryside and promote sustainable farming and protection of wildlife; • to retain attractive landscapes, and enhance landscapes near to where people live; • to improve damaged and derelict land around towns; • to work within the framework of landscape to help shape future places and manage change everywhere; and • to retain land in agricultural, forestry and related uses.	Objective 1: Biodiversity and Nature Conservation Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 13: Cultural Heritage Objective 14: Landscape and Townscape

3.3 Analysis of the Baseline

3.3.1 An essential part of the SEA compliant AoS process is to identify the current state of the environment and its likely evolution under a 'business as usual' scenario. Only with sufficient knowledge of the existing baseline conditions can the likely significant effects of the draft NPS be identified and appraised. Compliance with the SEA Directive also requires that the actual effects of implementing the NPS on baseline conditions are monitored.

3.3.2 To inform the baseline analysis contained in **Appendix B**, information has been used from a variety of sources including, amongst others: Defra; the Department for Business, Energy and Industrial Strategy (BEIS); the Environment Agency; Natural England; Historic England; the Office for National Statistics; Welsh Government; Natural Resources Wales; and the Scottish Environment Protection Agency.

3.3.3 As set out above, the analysis of the baseline and its likely evolution represents a 'business as usual' scenario in which an NPS for Water Resources is not designated. This is in order to provide the basis for the assessment of the draft NPS. The baseline contained in **Appendix B** is separate and distinct from the possible 'no NPS' reasonable alternative outlined in **Section 2** in which it is

assumed that nationally significant water resource infrastructure would still come forward for development consent and implementation but without the explicit guidance of an NPS.

3.4 Key Issues Relevant to the Draft National Policy Statement for Water Resources

3.4.1 From the analysis of current and projected baseline conditions, a number of issues have been identified as being relevant to the draft NPS. These are summarised in **Table 3.3**. Against each topic, the reference to the AoS objectives indicates how these issues have been reflected within the appraisal framework (see **Section 4**).

Table 3.3 Key Issues Relevant to the NPS for Water Resources

Topic	Summary of Key Issues	AoS Objectives link (see Section 4)
1. Biodiversity and Nature Conservation	<u>Relevance to Water Resources Infrastructure</u> • The construction of water resources infrastructure can affect biodiversity. Impacts may be direct (for example, the loss of, or damage to, habitats and species) or indirect (for example, disturbance due to noise and emissions to air associated with construction works). • The operation of water resources infrastructure can have a range of positive and negative impacts on habitats and species due to, for example, changes in hydrology, changes in water chemistry and the spread of invasive non-native species. Water infrastructure can contribute positively to biodiversity, introducing new features that can provide opportunities for nature and wildlife in the medium to long term. <u>Key Trends</u> • Special Areas of Conservation (SACs), Sites of Community Importance (SCIs), Special Protection Areas (SPAs) and Ramsar sites are important for biodiversity at the international level. The total extent of land and sea in the UK protected by national and international designations has increased from 10.8 million hectares in December 2010 to 17 million hectares at the end of July 2015, comprising 2.6 million hectares on land and 14.4 million hectares at sea. • Since 2005, the percentage of features or area of Areas/Sites of Special Scientific Interest (A/SSSIs) in favourable or recovering condition has increased from 67% to 84% in 2010 and to 94.3% in 2017. This change reflects improved management of sites, but may also be affected by a greater number of sites/features having been assessed over time. The majority of protected areas on land are A/SSSIs, so the condition indicator is not representative of marine sites. • The annual review of UK Biodiversity Indicators comprises 51 measures, of which 5 are not assessed in the long term and 8 are not assessed in the short term. Of the 46 long-term measures, 22 show an improvement, compared to 13 of the measures that were deteriorating. Of the 43 short term measures, 17 show an improvement, as compared to 10 in decline. Measures that improved or deteriorated in the short term have not necessarily continued to improve or deteriorate respectively in the long term. • Key pressures and risks in respect of biodiversity and nature conservation that are relevant include, inter-alia: o habitat loss and fragmentation by development; o agricultural intensification and changes in agricultural management practices; o water abstraction, drainage or inappropriate river management; o lack of appropriate habitat management; o atmospheric pollution (acid precipitation, nitrogen deposition);	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity Objective 7: Flood Risk and Coastal Change Objective 10: Climatic Factors

Topic	Summary of Key Issues	AoS Objectives link (see Section 4)
	○ water pollution from both point and wider (diffuse) agricultural sources; ○ climate change and sea level rise; ○ recreational pressure and human disturbance; and ○ invasive and non-native species.	
2. Population, Economics and Skills	<u>Relevance to Water Resources Infrastructure</u> • The growing population within the UK will increase population densities and, in-turn, would be expected increase the pressure on water resources. • Long-term growth of the economy would be expected to lead to an increase in demand for water for commercial and industrial purposes. In turn, the risk of drought or interruptions to accessing water may pose a risk to economic productivity. • The construction of large scale water resources infrastructure in particular can represent a significant capital investment with the potential to create employment opportunities, deliver supply chain benefits and contribute to skills development in the working population. • The affordability of water, protection of vulnerable customers and delivering best value for money is a key consideration in water company investment decisions. <u>Key Trends</u> • The current UK population is generally increasing and is projected to reach 74.3 million by 2039, a rise of 9.7 million people. Assumed net migration accounts for 51% of the projected increase, with natural increase (more births than deaths) accounting for the remaining 49% of growth. • The increase in population is anticipated to increase demand for water resources, particularly in London and the south east where not only is the population expected to increase most rapidly, these areas also experience the highest levels of water stress. • The respective indicators and areas of multiple deprivation in England, Scotland and Wales are similar in that there continues to be deprivation in specific areas. This suggests that the affordability of water bills will remain an issue for certain communities in the UK. Research by the Consumer Council for Water in 2015 revealed that 12% of customers said they were struggling to pay their water bills and which disproportionately affects those on low incomes. This trend could be exacerbated by increasing living costs. • There are current uncertainties over future market conditions, following the UK's vote to leave the EU; however, as the Bank of England highlights, whilst financial conditions are currently stable, there are a number of possible exit scenarios from the EU that could test the resilience of the financial system.	Objective 2: Population, Economics and Skills Objective 3: Human Health
3. Human Health	<u>Relevance to Water Resources Infrastructure</u> • A reliable source of clean water is required for basic sanitation and to ensure human health. • The increase in the severity of drought, particularly in the south and east of England, poses a risk to health. <u>Key Trends</u> • Health inequalities exist in many communities. This is due to a number of factors (and the interplay between them) including housing quality, economic wellbeing, employment, lifestyle, heredity factors, cultural and environmental factors. • Sustained exposure to elevated air pollution levels (including exposure to elevated concentrations of particulate matter, oxides of nitrogen and sulphur) contributes to respiratory illness.	Objective 2: Population, Economics and Skills Objective 3: Human Health

Topic	Summary of Key Issues	AoS Objectives link (see Section 4)
	• Whilst relatively uncommon, the freshwater environment poses a number of health risks that can be easily exacerbated if the environment is poorly managed.	
4. Land Use, Geology and Soils	Relevance to Water Resources Infrastructure • Soils are a non-renewable resource vulnerable to changes in both hydrology and land use. • Hydrogeology will affect the distribution and movement of groundwater and surface water and is a key consideration for water resources planning. • The construction of water resources infrastructure can affect land use and soil. Impacts may be direct (for example, the loss of, or damage to, land and soil from new development) or indirect (for example, the location of new infrastructure affecting adjacent land uses). Key Trends • The principal land uses in the UK are grassland, arable/horticulture and forestry. The 2011 UK National Ecosystem Assessment classifies 6.8% of the UK's land area as urban. • Approximately 1.6% of the land in the UK has been affected by contamination from industrial activity, although this is progressively being addressed as sites are redeveloped. • Disturbance of contaminated sites carries the risk of pollution pathways being created or re-opened for any existing ground contamination. • There is currently increasing pressure on rural and agricultural land from developers as urban areas expand. Future population growth leading to an increase in the need for housing and related urban development infrastructure will put more pressure on protected land including important geological sites. • Soils in England continue to be affected by human actions including intensive agriculture, historic levels of industrial pollution and urban development, making them vulnerable to erosion (by wind and water), compaction and loss of organic matter. • As the climate (including temperature and rainfall patterns) changes in the future, it is likely that soils have the potential to be further degraded, as a result of both the direct and indirect impacts of climate change.	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity
5. Water Quality (including surface and ground water quality and availability)	Relevance to Water Resources Infrastructure • Reliable access to water of good quality is an essential aspect of water resources planning. • The construction of water resources infrastructure would be expected to help ensure a robust future supply of good quality water in a changing climate. • The construction of water resources infrastructure can have adverse impacts on water quality due to, for example, pollution. • The operation of water resources infrastructure can have both positive and negative impacts on water quality associated with, in particular, changes to water levels as a result of abstraction or discharge. Key Trends • Coastal, estuarine and river water quality has improved since 1990. • The percentage of surface water bodies classified under the Water Framework Directive as having 'high' or 'good' surface water status between 2011 and 2016 decreased from 37% to 35%. There is a need to prevent the deterioration of Water Framework Directive waterbodies, achieve protected area objectives and achieve water body status objectives. • Climate change is expected to have significant impacts on the water environment. Changes in the level of rainfall, the potential for increased droughts and the more intense storms are expected to pose long term challenges to the maintenance of water quality standards.	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity

Topic	Summary of Key Issues	AoS Objectives link (see Section 4)
	• There is a legacy of groundwater pollution in the UK from historical mining and other industrial activities, although this is progressively being addressed as sites are remediated as part of site redevelopment. • Any deterioration in water quality risks making ecosystems more vulnerable to the spread of invasive non-native species. • Many waterbodies are subject to pressure from multiple sources including rural diffuse pollution, waste water discharges, acidification and urban diffuse pollution, that pose a risk to water quality.	
6. Water Quantity	<u>Relevance to Water Resources Infrastructure</u> • There is growing pressure on water resources in parts of the UK, particularly the south east and east of England. • The construction of water resources infrastructure would be expected to increase the volume and resilience of the water supply. <u>Key Trends</u> • There has been a downward trend in the amount of water that households are using each day (decreasing from 145.8 litres per person per day (lpd) in 2011/12 to 139.6 lpd in 2015/16). However, many water companies have forecasted an increase in per capita consumption in their WRMPs. As such, there is an ongoing need to promote water efficiency measures (including metering). • Average actual leakage levels (mega litres per day) have remained broadly level for the last five years and further opportunities exist to reduce leakage rates including using a variety of innovative measures. • Demand for water is expected to increase from a growing population alongside industrial, agricultural and commercial pressures. Water resources in parts of the UK, particularly the south east and east of England are under growing pressure. • The risk of prolonged and more severe droughts is increasing, which in turn risks the increasing use of drought restrictions measures and consequent effects on the environment. • Climate change is expected to have significant impacts on the water environment. Areas where the underlying geology is generally impermeable are expected to be particularly affected as river flows would be likely to fall to low levels in drier periods and quickly react to rainfall episodes.	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity
7. Flood Risk and Coastal Change	<u>Relevance to Water Resources Infrastructure</u> • Flood risk presents a significant planning issue in the development of major infrastructure projects, both in terms of the infrastructure itself being flooded during its construction and operational phases and the changes to flood risk resulting from the infrastructure, such as such as increased run-off raising the flood risk in downstream areas. • The operation of water resources infrastructure (e.g. reservoirs) may provide an opportunity to address flood risk issues (for example, by providing extra space for flood water storage). <u>Key Trends</u> • Some 15% of UK properties are at risk from flooding (surface water, river or coastal), although the degree of risk varies. • The UK Climate Change Risk Assessment 2017: Projections of future flood risk projected that the number of residential properties exposed to flooding more frequently than 1:75 years (on average) increases from 860,000 today to between 1.2 million and 1.7 million properties in 2080, depending on the scenario considered. • Sea levels are rising, with worst case scenarios of a 1.9m increase in sea level by 2100 (with up to 0.76m more likely). The south and east of England will experience the greatest effective increases, due to the effects of post-glacial rebalancing.	Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 5: Water Quality Objective 6: Water Quantity Objective 7: Flood Risk and Coastal Change Objective 10: Climatic Factors

Topic	Summary of Key Issues	AoS Objectives link (see Section 4)
	• Many coastal sites (especially in the south and east of the England) are already prone to erosion, due to their underlying geology, coupled with rising sea levels and increased storm intensity. Shoreline Management Plans (in England and Wales) are taking a long term view of coastal change by identifying sustainable management approaches for up to the next 100 years.	
8. Air Quality	<u>Relevance to Water Resources Infrastructure</u> • Air quality is sensitive to changes in traffic volume and emissions from other sources such as construction plant and machinery. Increases in transport movements and works associated with the construction and operation of nationally significant water resources infrastructure could affect air quality, particularly in areas with existing air quality issues. <u>Key Trends</u> • Air quality has improved in the UK over the last sixty years as a result of the switch from coal to gas and electricity for heating of domestic and industrial premises, stricter controls on industrial emissions, higher standards for the composition of fuel and tighter regulations on emissions from motor vehicles. However, poor air quality, particularly due to vehicle emissions, remains an issue for community health and for biodiversity, especially in/downwind of urban areas and major transport networks. • Poor air quality is generally associated with urban/industrial areas and major road infrastructure. A relatively large number of Air Quality Management Areas are located in urban areas, many of which have been designated due to high NO_2 and PM_{10} levels. • Historical emissions have resulted in high levels of sulphur and nitrogen deposits in wetter parts of the UK such as northern England and the Welsh uplands. This has resulted in acidification and nitrogen eutrophication in some areas. Around a third of the UK land area is sensitive to acid deposition and a third to eutrophication[27].	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity Objective 8: Air Quality
9. Noise	<u>Relevance to Water Resources Infrastructure</u> • The construction and operation of water resources infrastructure is likely to have noise impacts associated with vehicle movements and the operation of plant and machinery. <u>Key Trends</u> • Ambient noise levels are gradually rising in the UK as a result of an increasing , and increasingly mobile, population. The cumulative impacts of noise on sensitive groups in local communities may create or exacerbate existing health issues. • There is a need to address noise issues in the UK's most affected communities.	Objective 1: Biodiversity and Nature Conservation Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 9: Noise
10. Climatic Factors (including climate change and adaptation and flood risk)	<u>Relevance to Water Resources Infrastructure</u> • The availability of additional water supplies can increase the resilience of the existing water network and support adaptation to the effects of climate change such as drought. • The construction and operation of large scale water resources infrastructure is likely to result in a net increase in energy use and greenhouse gas emissions, noting however that new infrastructure may replace older, less energy efficient infrastructure with higher emissions. • Water resources infrastructure may be vulnerable to the effects of climate change such as flood risk and coastal change. <u>Key Trends</u>	Objective 1: Biodiversity and Nature Conservation Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 5: Water Quality Objective 6: Water Quantity Objective 7: Flood Risk and Coastal Change Objective 8: Air Quality

[27] Eutrophication is the enrichment of an ecosystem with chemical nutrients, typically compounds containing nitrogen and phosphorus, and whilst it can be natural, can also be man-made. Man-made eutrophication is commonly associated with elevated levels of nutrient enrichment arising from waste water treatment works discharges into rivers which can lead to algal blooms, decomposition or organic matter and deoxygenation of waters.

Topic	Summary of Key Issues	AoS Objectives link (see Section 4)
	• The input of greenhouse gasses (e.g. CO_2, CH_4, N_2O, O_3) resulting from fossil fuel usage, agriculture and other land uses have been linked with atmospheric warming and climate change. • Fossil fuel dependency remains high and is likely to remain so for some time. • Legally binding EU and Government targets (the Climate Change Act 2008 and subsequent revisions, The Carbon Budgets Order 2009) seek to reduce emissions (based on a carbon budget of $MtCO_2$ equivalent) by 80% on 1990 levels by 2050. The Government has confirmed its intention within the Fifth Carbon Budget to reduce UK greenhouse gas emissions by 57% by 2030 relative to 1990 levels. • Changes in temperature and rainfall patterns, along with more frequent extreme weather events, create the situation where a greater degree of resilience will have to be incorporated into plans and proposals. • The UK's Climate Projections (UKCP09) show that the UK as a whole is likely to experience hotter, drier summers, warmer, wetter winters and rising sea levels, particularly in the south east of England. This is likely to have a significant effect on a range of environmental conditions, including the water environment. • Sensitive ecosystems and UK water resources are likely to come under increasing pressure as a result of climate change.	Objective 10: Climatic Factors Objective 12: Traffic and Transport
11. Waste and Resources	<u>Relevance to Water Resources Infrastructure</u> • Large scale infrastructure projects have the potential to generate very high volumes of waste during both construction and operation. This waste should be managed in accordance with the waste hierarchy. <u>Key Trends</u> • The total amount of municipal and commercial and industrial waste produced each year is likely to decrease in coming years. • The consumption of non-renewable sources will deplete overall stocks and result in a scarcity of resources for future generations.	Objective 1: Biodiversity and Nature Conservation Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 5: Water Quality Objective 6: Water Quantity Objective 10: Climatic Factors Objective 11: Waste and Resources
12. Traffic and Transport	<u>Relevance to Water Resources Infrastructure</u> • The construction and operation of large scale water resources infrastructure projects can result in increased traffic volumes and may involve pipeline works within/across roads which in-turn can lead to an increase in congestion on road networks and driver delay. <u>Key Trends</u> • There are areas of the UK's transport network which are stretched beyond their capacity at peak times. • Increasing levels of congestion are being experienced on the UK's road network. • There is a need for investment in transportation infrastructure to meet future demand and support economic growth. • There is a need to reduce the need to travel and facilitate a shift towards more sustainable modes of transport.	Objective 1: Biodiversity and Nature Conservation Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 8: Air Quality Objective 12: Traffic and Transport
13. Cultural Heritage	<u>Relevance to Water Resources Infrastructure</u> • Wetlands are fragile and vulnerable to subtle changes in burial conditions, in addition to the usual threats from development and changes in land-use and changes to the hydrological regime. • The construction and operation of large scale water resources infrastructure can have adverse impacts on the significance of heritage	Objective 2: Population, Economics and Skills Objective 4: Land Use, Geology and Soils Objective 13: Cultural Heritage Objective 14: Landscape and Townscape

Topic	Summary of Key Issues	AoS Objectives link (see Section 4)
	assets both directly (through the loss of, or damage to, assets) or indirectly (through effects on setting). Key Trends • The impact of climate change on wetland heritage is currently poorly understood. Measures introduced to protect and enhance natural environmental qualities (water quality or biodiversity) may also inadvertently threaten wetland heritage if not handled sensitively. • The UK has over 459,000 listed buildings, approximately 33,720 scheduled monuments, 2,416 historic parks and gardens, in excess of 10,259 conservation areas and 28 World Heritage Sites. • The settings of some heritage assets are at risk from new development. • Scheduled monuments in rural areas are at risk from agricultural practices, land disturbance and unrestricted plant, scrub or tree growth.	
14. Landscape and Townscape	Relevance to Water Resources Infrastructure • The construction and operation of large scale water resources infrastructure can have adverse impacts on landscape character and visual amenity. Where works are located in areas of high landscape value (for example, National Parks), these effects could be significant. • Water infrastructure can also contribute positively to landscapes, introducing new features that can provide opportunities for nature and wildlife in the medium to long term. Key Trends • Some 10% of the UK is covered by National Parks, with other designations extending the area of landscape covered by a further 15%. • Key issues that could affect landscape could include the effects of climate change (and effects arising from the increased frequency and intensity of storm and flood events, increased likelihood of droughts and the anticipated increased in wildfires), changes to agricultural practices, new energy infrastructure and development pressures. • Light pollution appears to have increased considerably over the last 30-40 years over much of the UK. The growth of urban areas, road networks and industrial areas are all major contributors to increased light levels.	Objective 1: Biodiversity and Nature Conservation Objective 2: Population, Economics and Skills Objective 3: Human Health Objective 4: Land Use, Geology and Soils Objective 13: Cultural Heritage Objective 14: Landscape and Townscape

3.5 Limitations of the Data

3.5.1 Data have generally been sourced from national bodies to enable comparison between baseline information for England, Scotland and Wales. However, in some cases baseline information collected by national bodies differs meaning that data are not directly comparable.

3.5.2 The information used has been sourced, so far as is possible, from the most recent datasets available utilising a wide range of authoritative and official sources. It is important to acknowledge that there are variable time lags between raw data collection and its publication. Consequently, at the time of this Scoping Report's publication, the baseline or predicted future trends may have varied from those described above and in **Appendix B**.

4. Appraisal Methodology

4.1 Introduction

4.1.1 This section describes the proposed approach to undertaking the AoS of the draft NPS. It draws on the information presented in **Section 2**, **Section 3** and **Appendix B** to define the scope of the appraisal (in terms of what is to be appraised and the environmental and socio-economic issues to be considered) and develop the appraisal framework. The appraisal framework includes proposed AoS objectives and guide questions supported by definitions of significance that will help the reader understand how the appraiser will determine the effects of the draft NPS against the objectives.

4.2 Scope of the Appraisal

Topics

4.2.1 The range of potential environmental and socio-economic effects under consideration has been informed primarily by the SEA Directive and through giving due consideration to the nature and scope of the potential significant environmental effects resulting from the draft NPS. As discussed in **Section 3.1**, Annex I of the SEA Directive and Schedule 2 of the SEA Regulations require that the assessment includes information on the "*likely significant effects on the environment, including on issues such as: biodiversity; population; human health; fauna; flora; soil; water; air; climatic factors; material assets; cultural heritage, including architectural and archaeological heritage; landscape; and the inter-relationship between the issues referred to*". The scope of the draft NPS presented in **Section 2** and the outputs from the review of other relevant plans and programmes and baseline information have also been used to define the scope of the appraisal.

4.2.2 In **Table 4.1**, each of the 12 SEA topic areas listed above are considered in turn. All of these topic areas will be addressed in the AoS.

4.2.3 It should be noted that, whilst the appraisal of the draft NPS will be presented on a topic-by-topic basis, where there are linkages between the impacts and effects identified (for example, the potential impact of water resource extraction on water dependent habitats), these will be highlighted in the appraisal commentary as appropriate.

Table 4.1 Basis for Scoping out Topic Areas from the AoS

SEA Topic Area	Propose to Include in Draft Water Resources NPS AoS?	AoS Topic Area
Biodiversity	Yes	Biodiversity and Nature Conservation
Population	Yes	Population, Economics and Skills Traffic and Transport
Human Health	Yes	Human Health Air Quality Noise
Fauna	Yes	Biodiversity and Nature Conservation
Flora	Yes	Biodiversity and Nature Conservation
Soils	Yes	Land use, Geology and Soils

SEA Topic Area	Propose to Include in Draft Water Resources NPS AoS?	AoS Topic Area
Water	Yes	Water Quality Water Quantity
Air	Yes	Air Quality Traffic and Transport
Climatic Factors	Yes	Climatic Factors Flood Risk and Coastal Change
Material Assets	Yes	Waste and Resource Management
Cultural Heritage	Yes	Cultural Heritage
Landscape	Yes	Landscape and Townscape

Geographic Scope

4.2.4 The AoS will consider the potential effects of the draft NPS in England in addition to Scotland and Wales. This reflects the potential for water resource management schemes in England to impact upon adjacent areas in Scotland and Wales due to the transboundary nature of hydrological systems, such as rivers flowing across borders.

4.2.5 In order to comply with the transboundary consultation requirements of the SEA Directive (article 7) and SEA regulation 14 (1), consideration will also be given to whether any likely significant negative effect would arise and whether there would be an effect on other areas and states.

Timescales

4.2.6 When considering the timing of potential effects of the draft NPS, the appraisal will classify effects as 'short,' 'medium' or 'long-term.' This reflects an intention to capture the differences that could arise at different timescales, consistent with the requirements of Annex II (2) of the SEA Directive where the assessment of the effects should have regard to "*the probability, duration, frequency and reversibility of the effects"*.

4.2.7 **Table 4.2** below summarises the proposed timescales to be applied in the AoS. Water resources infrastructure of the scale to qualify as a nationally significant infrastructure project, such as reservoirs and dams, are typically built with the intention of lasting for significant periods (as long as correct maintenance procedures are followed). Given the 50 year timeframe in the Water UK report, 'Water resources long term planning framework', it is proposed that for the purposes of the assessment, any duration beyond this is considered long term.

Table 4.2 Duration of Short, Medium and Long Term

Estimated Length (years)	Duration
1-10 years	Short
10-50 years	Medium
50 years and beyond	Long

4.3 Appraisal Framework

4.3.1 Establishing appropriate AoS objectives and guide questions is central to appraising the effects of the draft NPS. The proposed AoS objectives and guide questions to be used in the appraisal of the draft NPS reflect the topics contained in Annex I of the SEA Directive and have been informed by:

- the review of plans and programmes and the associated environmental protection objectives identified (see **Section 3** and **Appendix B**);
- the baseline information and key sustainability issues (see **Section 3** and **Appendix B**); and
- a broad understanding of the likely generic effects arising from the construction and operation of water resources infrastructure.

4.3.2 Broadly, the AoS objectives present the preferred environmental and socio-economic outcome, which typically involves minimising detrimental effects and enhancing positive effects. Associated guide questions have been developed for each AoS objective to provide a detailed framework against which the draft NPS can be appraised. The appraisal objectives and guide questions are presented in **Table 4.3**. For the avoidance of doubt, the AoS objectives are not the same as the proposed NPS objectives.

Table 4.3 Proposed Appraisal Objectives and Guide Questions

AoS Topic Area	Proposed AoS Objectives		Proposed Guide Questions	SEA Directive Topics
Biodiversity and Nature Conservation	1.	To protect and enhance biodiversity (habitats, species and ecosystems) working within environmental capacities and limits.	• Will the Water Resources NPS protect and/or enhance internationally designated nature conservation sites e.g. Special Areas of Conservation, Special Protection Areas, Marine Protected Areas and Ramsar Sites? • Will the Water Resources NPS protect and/or enhance nationally designated nature conservation sites e.g. Sites of Special Scientific Interest? • Will the Water Resources NPS affect animals or plants including protected species? • Will the Water Resources NPS lead to a change in the ecological quality of habitats due to changes in groundwater/river water quality and/or quantity? • Will the Water Resources NPS protect and/or enhance priority species and habitats? • Will the Water Resources NPS affect the structure and function of natural systems (ecosystems)? • Will the Water Resources NPS affect public access to areas of wildlife interest? • Will the Water Resources NPS have an impact on fisheries?	Biodiversity, Flora and Fauna
Population, Economics and Skills	2.	To support a strong, diverse and stable economy through the provision of nationally significant water resources infrastructure with opportunities to improve skills and employment, minimise disturbance to local communities and maximise positive social impacts.	• Will the Water Resources NPS help to ensure that sufficient water resources infrastructure is in place to meet increased demand associated with population growth and to support economic development? • Will the Water Resources NPS ensure that an affordable supply of water is maintained and that vulnerable customers are protected? • Will the Water Resources NPS promote economically efficient solutions that deliver best value for money? • Will the Water Resources NPS affect opportunities for investment in education and skills development? • Will the Water Resources NPS reduce the effects of drought restrictions on the economy? • Will the Water Resources NPS affect existing abstractors?	Population

AoS Topic Area	Proposed AoS Objectives		Proposed Guide Questions	SEA Directive Topics
			• Will the Water Resources NPS affect the number or types of jobs available in local economies? • Will the Water Resources NPS affect the social infrastructure and amenities available to local communities?	
Human Health	3.	To ensure the protection and enhancement of human health and wellbeing.	• Will the Water Resources NPS adversely affect human health by resulting in increased nuisance and disruption (e.g. as a result of increased noise levels)? • Will the Water Resources NPS disproportionately affect communities already identified as vulnerable / at risk? • Will the Water Resources NPS ensure the continuity of a safe and secure drinking water supply? • Will the Water Resources NPS affect opportunities for recreation and physical activity? • Will the Water Resources NPS maintain surface water and bathing water quality within statutory standards?	Population Human Health
Land Use, Geology and Soils	4.	To conserve and enhance soil and geology and contribute to the sustainable use of land.	• Will the Water Resources NPS have an effect on soil quality/function, variety, extent and/or compaction levels? • Will the Water Resources NPS increase the risk of significant land contamination? • Will the Water Resources NPS have an effect on any known and existing contamination? • Will the Water Resources NPS protect and/or enhance Geological Conservation Sites, important geological features and geophysical processes and functions? • Will the Water Resources NPS change patterns of land use or affect best and most versatile agricultural land?	Soils
Water Quality	5.	To protect and enhance water quality and help achieve the objectives of the Water Framework Directive.	• Will the Water Resources NPS protect and improve surface, ground, estuarine and coastal water quality? • Will the Water Resources NPS prevent the deterioration of Water Framework Directive waterbody status (or potential)? • Will the Water Resources NPS support the achievement of protected area objectives, such as groundwater source protection zones and nitrate vulnerable zones? • Will the Water Resources NPS support the achievement of environmental objectives set out in River Basin Management Plans? • Will the Water Resources NPS ensure a new activity or new physical modification does not prevent the future achievement of good status for a water body?	Water
Water Quantity	6.	To protect and enhance surface and ground water levels and flows and ensure sustainable water resource management.	• Will the Water Resources NPS affect river flows and groundwater levels? • Will the Water Resources NPS reduce the impact of drought measures on the environment? • Will the Water Resources NPS affect demand for water resources? • Will the Water Resources NPS ensure the sustainable and resilient supply of water resources?	Water
Flood Risk and Coastal Change	7.	To minimise the risks from coastal change and flooding to people, property and communities, taking into account the effects	• Will the Water Resources NPS help to avoid development in areas of flood risk and, where possible, reduce flood risk? • Will the Water Resources NPS help to avoid development in areas affected by coastal erosion and	Water Climatic Factors

AoS Topic Area	Proposed AoS Objectives	Proposed Guide Questions	SEA Directive Topics
	of climate change.	not affect coastal processes and/or erosion rates?	
Air	8. To minimise emissions of pollutant gases and particulates and enhance air quality, helping to achieve the objectives of the Air Quality and Ambient Air Quality and Cleaner Air for Europe Directives.	• Will the Water Resources NPS affect air quality? • Will the Water Resources NPS create a nuisance for people or wildlife (for example from dust or odours)?	Air Human Health Biodiversity, Flora and Fauna
Noise	9. To minimise noise pollution and the effects of vibration.	• Will the Water Resources NPS help to minimise noise and vibration effects from construction and operational activities on residential amenity and on sensitive locations and receptors?	Human Health Biodiversity, Flora and Fauna
Climatic Factors	10. To minimise greenhouse gas emissions as a contribution to climate change and ensure resilience to any consequences of climate change.	• Will the Water Resources NPS help to ensure a low carbon design solution to the construction and operation of water resources infrastructure? • Will the Water Resources NPS increase resilience to the effects of climate change? • Will the Water Resources NPS promote climate change adaptation (including rising temperatures and more extreme weather events)?	Climatic Factors
Waste and Resources	11. To minimise waste arisings, promote reuse, recovery and recycling, minimise the impact of wastes on the environment and communities and contribute to the sustainable use of natural and material assets.	• Will the Water Resources NPS maximise re-use and recycling of recovered components and materials? • Will the Water Resources NPS help achieve government and national targets for minimising, recovering and recycling waste? • Will the Water Resources NPS increase the burden on limited natural resources? • Will the Water Resources NPS make best use of existing infrastructure and resources?	Material Assets
Traffic and Transport	12. To minimise the volume of traffic and promote more sustainable transport choices**.**	• Will the Water Resources NPS help to minimise traffic volumes? • Will the Water Resources NPS help to minimise the direct effects of transport such as noise and vibration, severance of communities and wildlife habitats and safety concerns? • Will the Water Resources NPS encourage alternative and sustainable means of transporting freight, waste and minerals, where possible?	Biodiversity, Flora and Fauna Population Human Health
Cultural Heritage	13. To conserve and where appropriate enhance the historic environment including cultural heritage resources, historic buildings and archaeological features and their settings.	• Will the Water Resources NPS conserve or enhance the historic environment, including heritage assets such as historic buildings, conservation areas, features, places and spaces, and their settings • Will the Water Resources NPS affect designated or locally-important archaeological features or their settings? • Will the Water Resources NPS avoid damage to important wetland areas with potential for paleoenvironmental deposits? • Will the Water Resources NPS affect the fabric and setting of historic buildings, places or spaces that contribute to local distinctiveness, character and appearances? • Will the Water Resources NPS affect public access to, or enjoyment of, features of cultural heritage?	Cultural Heritage

AoS Topic Area	Proposed AoS Objectives	Proposed Guide Questions	SEA Directive Topics
Landscape and Townscape	14. To protect and enhance landscape and townscape quality and visual amenity.	• Will the Water Resources NPS have detrimental visual impacts? • Will the Water Resources NPS affect protected/designated landscapes or their setting? • Will the Water Resources NPS affect the intrinsic character or setting of local landscapes or townscapes? • Will the Water Resources NPS help to minimise light pollution from construction and operational activities on residential amenity and on sensitive locations and receptors? • Will the Water Resources NPS affect public access to open spaces or the countryside?	Landscape Human Health

4.4 Completing and Recording the Appraisal

Appraising the Effects of the Draft NPS

4.4.1 In accordance with the ODPM (now CLG) Practical Guide to the SEA Directive[28], the appraisal process will seek to predict the significant effects of the draft NPS. This will be done by identifying the likely changes to the baseline conditions as a result of implementing the draft NPS (or reasonable alternatives). These changes will be described (where possible) in terms of their geographic scale, the timescale over which they could occur, whether the effects would be temporary or permanent, positive or negative, likely or unlikely, frequent or rare. Where numerical information is not available, the appraisal will be based on professional judgement and with reference to relevant legislation, regulations and policy. More specifically, in undertaking the appraisal, consideration will be given to:

- baseline information including existing socio-economic and environmental problems and their evolution;
- the likely activities and potential sources of effects associated with the construction and operation of water resources infrastructure;
- the regulatory framework;
- consultation with statutory consultees and other stakeholders;
- the AoS objectives and guide questions; and
- definitions of significance (see below).

4.4.2 The elements of the draft NPS that, based on the current understanding of the likely content of the document, would be subject to appraisal are likely to include:

- the proposed vision and objectives of the draft NPS;
- the proposed assessment principles (including criteria on good design) and guidance on impacts contained within the draft NPS;
- the reasonable alternatives to the draft NPS.

4.4.3 The proposed NPS vision and objectives will be assessed by testing their compatibility with the AoS objectives. This assessment will be undertaken using a compatibility matrix. The scoring system that will be used to determine their compatibility is shown in **Table 4.4**.

[28] ODPM (CLG) (2005) *A Practical Guide to the Strategic Environmental Assessment Directive*.

Table 4.4 Proposed Scoring System to be used in the Compatibility Assessment of Draft NPS Objectives

Score	Compatibility
+	Objectives are potentially compatible.
?	Uncertain if objectives are related.
~	No clear relationship between objectives.
-	Objectives are potentially incompatible.

4.4.4 The proposed assessment principles and guidance on impacts, as well as reasonable alternatives, will be assessed against the AoS objectives on a topic-by-topic basis to identify likely significant environmental and socio-economic effects using an appraisal matrix (see **Table 4.5**). The resulting appraisal and identification of effects will be used to determine the extent to which any principles and generic impacts identified in the draft NPS are sufficient and appropriate to cover the likely effects of water resources infrastructure, along with any proposed mitigation and enhancement measures.

Table 4.5 Proposed Appraisal Matrix

NPS Section	Draft NPS	Option 1	Option 2	Appraisal
Generic Impacts	**+**	**+/?**	**+/?**	**Draft NPS** *A description of the effects of the Water Resources NPS sub-section on the topic under consideration will be provided here, with reasoning and justification included. Mitigation and enhancement measures will also be identified.*
				Alternative 1: *A description of the effects of the reasonable alternative to the NPS will be provided here, with reasoning and justification included.*
				Alternative 2: Etc…
Generic Mitigation Measures	**+**	**+**	**+/?**	**Draft NPS:**
				Alternative 1:
				Alternative 2:
Etc	**+/?**	**+/?**	**+/?**	**Draft NPS:**
				Alternative 1:
				Alternative 2:

NPS Section	Draft NPS	Option 1	Option 2	Appraisal		
Summary of Recommended Mitigation and Enhancement	*A summary of the mitigation and enhancement measures identified through the appraisal will be presented here.*					
Score Key:	**+ +** **Significant** positive effect	**+** **Minor** positive effect	**0** No overall effect	**-** **Minor** negative effect	**-- Significant** negative effect	**Score uncertain**
NB: where more than one symbol is presented in a box it indicates that the AoS has found more than one score for the category. Where the scores are both positive and negative, the boxes are deliberately not coloured (i.e. 'no overall effect'). Where a box is coloured but also contains a ?, this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed in the colour used. A conclusion of uncertainty arises where there is insufficient evidence for expert judgement to conclude an effect.						

Note: This draft AoS matrix is for illustrative purposes only. The full matrix will be finalised after comments have been received on the AoS categories, objectives and appraisal criteria.

Guidance on Determining Significance

4.4.5 Topic-specific guidance has been developed for what constitutes a significant effect, a minor effect or a neutral effect for each of the AoS objectives. These definitions of significance will help to ensure a consistent approach to interpreting the significance of effects and will assist the reader in understanding the decisions made by the appraiser. The proposed guidance on significance can be found in the relevant topic chapters in **Appendix B** and are summarised in **Appendix C**. **Table 4.6** shows an example of this guidance along with the symbols used to record the effects within the appraisal.

Table 4.6 Illustrative Guidance for the Appraisal of Significance for Biodiversity and Nature Conservation

Effect	Description	Illustrative Guidance
++	Significant positive	• Option would have a significant and sustained positive effect on European or national designated sites and/or protected species. (e.g. – fully supports all conservation objectives on site, long-term increase in population of designated species); • Option will create new areas of wildlife interest with improved public access in areas where there is a high demand for access to these sites.
+	Positive	• Option would have a minor positive effect on European or national designated sites and/or protected species (e.g. – supports one of the conservation objectives on site, short-term increase in population of designated species); • Option would have a positive effect on local biodiversity (e.g. – through removal of all existing disturbance/pollutant emissions, or creation of new habitats leading to long-term improvement to ecosystem structure and function); • Option would enhance existing public access to areas of wildlife interest in areas where there is some demand for these sites.
0	Neutral	• Option would not have any effects on European or national designated sites and/or any species (including both designated and non-designated species); • Option would not affect public rights of way or access to areas of wildlife interest.
-	Negative	• Option would have negative effects on local biodiversity (e.g. – through an increase in disturbance/pollutant emissions, or some loss of habitat leading to temporary loss of ecosystem structure and function); • Option would decrease public access to areas of wildlife interest in areas where there is some demand for access to these sites.

Effect	Description	Illustrative Guidance
--	Significant negative	• Option would have a negative effect on European or national designated sites and/or protected species (i.e. on the interest features and integrity of the site, by preventing any of the conservation objectives from being achieved or resulting in a long-term decrease in the population of a priority species). These effects could not be reasonably mitigated.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Mitigation

4.4.6 Identifying effective mitigation measures will also be a fundamental part of the AoS. **Box 2** provides information on types and examples of mitigation measures that might be proposed and includes an overview of the mitigation hierarchy. The mitigation hierarchy is based on the principle that it is preferable to prevent the generation of an impact rather than counteract its effects. It thus suggests that mitigation measures higher up the hierarchy should be considered in preference to those further down the list.

Box 2 Mitigation Hierarchy and Example Measures

Mitigation measures should be consistent with the mitigation hierarchy (after DETR 1997[29] and CLG 2006[30]):

- Avoidance – making changes to a design (or potential location) to avoid adverse effects on an environmental feature. This is considered to be the most acceptable form of mitigation.
- Reduction – where avoidance is not possible, adverse effects can be reduced through sensitive environmental treatments/design.
- Compensation – where avoidance or reduction measures are not available, it may be appropriate to provide compensatory measures (e.g. an area of habitat that is unavoidably damaged may be compensated for by recreating similar habitat elsewhere). It should be noted that compensatory measures do not eliminate the original adverse effect, they merely seek to offset it with a comparable positive one.
- Remediation – where adverse effects are unavoidable, management measures can be introduced to limit their influence.
- Enhancement – where there are no negative impacts, but measures are adopted to achieve a positive move towards the sustainability objectives e.g. through innovative design.

Examples of how mitigation measures could be incorporated into the NPS for Water Resources

- Promoting high quality, sustainable design in liaison with local communities.
- Avoiding adverse impacts associated with the construction and operation of water resources infrastructure on ecology.
- Maximising positive impacts such as job creation, multiple use of water resources infrastructure and ecological enhancements.
- Seeking to deliver net gains through water resources infrastructure development and operation.

Appraisal of Secondary, Cumulative and Synergistic Effects

4.4.7 The AoS, in complying with the SEA Directive and its implementing regulations in the UK, will need to demonstrate that secondary, cumulative and synergistic effects have been considered as part of the appraisal (see definitions presented in **Table 4.7**).

Table 4.7 Definitions of Secondary, Cumulative and Synergistic Effects

Type of Effect	Definition*
Secondary (or indirect)	Effects that do not occur as a direct result of the draft NPS's implementation, but occur at distance from the direct impacts or as a result of a complex pathway. Examples of a secondary effect of the draft NPS could include the materials (and embodied carbon) used in the construction of the water resources infrastructure (such as a reservoir), or health effects of changes to air quality associated with HGV emissions from the transportation of construction materials.

[29] Department of the Environment, Transport and the Regions (1997) *Mitigation Measures in Environmental Statements*. London: DETR
[30] Department for Communities and Local Government (2006) *Consultation Document - EIA: A guide to good practice and procedures.* London: CLG

Type of Effect	Definition*
Cumulative	Effects that occur where several individual activities which each may have an insignificant effect, combine to have a significant effect. Examples of a cumulative effect resulting from the implementation of the draft NPS could include potential effects on a European designated site where a habitat or species is vulnerable and the cumulative effects of disturbance and pollutant emissions arising from development and operation causes a significant impact. Cumulative effects will also include the potential effects (if any) of a proposed activity and any other proposed and consented developments.
Synergistic	Effects that interact to produce a total effect that is greater than the sum of the individual effects. For example, this can occur where the toxicity of two chemicals is greatly increased when they are combined.

*Adapted from SEA guidance, ODPM (2005)[16]

4.4.8 Through the AoS of the constitute elements of the draft NPS, the appraisal of the cumulative effects of the collective implementation of the draft NPS will be completed. Additionally, the effects of the draft NPS in-combination with other plans and programmes will also be considered. A matrix similar to that shown in **Table 4.8** could be used to summarise the cumulative effects of the draft NPS with other plans and programmes.

Table 4.8 Example of a Cumulative Assessment Matrix

AoS Objective	**Plan/ Programme 1**	**Plan/ Programme 1**	**Plan/ Programme 3**	**Plan/ Programme 4**	**Commentary**
1.Biodiversity and Nature Conservation *To protect and enhance biodiversity (habitats, species and ecosystems) working within environmental capacities and limits..*	--	-	-	+	*A description of the biodiversity and nature conservation effects of the draft NPS and other plans and programmes in-turn will be provided here, with reasoning and justification included…*

Score Key:	**+ +** **Significant** positive effect	**+** **Minor** positive effect	**0** No overall effect	**-** **Minor** negative effect	**- -** **Significant** negative effect	**?** **Score uncertain**

NB: where more than one symbol is presented in a box it indicates that the AoS has found more than one score for the category. Where the scores are both positive and negative, the boxes are deliberately not coloured (i.e. 'no overall effect'). Where a box is coloured but also contains a '?', this indicates uncertainty over whether the effect could be a minor or significant effect although a professional judgement is expressed in the colour used. A conclusion of uncertainty arises where there is insufficient evidence for expert judgement to conclude an effect.

Note: This draft AoS matrix is for illustrative purposes only. The full matrix will be finalised after comments have been received on the AoS categories, objectives and appraisal criteria.

5. Next Steps

5.1 Summary

5.1.1 This Scoping Report presents the proposed approach to undertaking the AoS of the draft NPS. It has been prepared to meet the requirements of the SEA Directive and associated Regulations. It fulfils the requirements of Stage A, as outlined within the quality assurance checklist presented in **Appendix A**.

5.1.2 The Scoping Report is being issued for consultation to those consultees listed in **Box 1** (see **Section 1.5**), and will also be made publicly available for purposes of openness and transparency. Details on the questions posed in this consultation and how you can respond can be found in **Section 1.9**.

5.2 Next Steps and Structure of the AoS Report

5.2.1 Defra is consulting on this Scoping Report for a period of six weeks. Using the approach set out in this report, as amended on the basis of consultation responses where appropriate, the potential effects of the draft NPS will then be appraised.

5.2.2 The next stages of the AoS process (Stages B and C) involve the prediction and evaluation of the effects that the draft NPS and reasonable alternatives to the NPS are likely to have. The appraisal will propose, where appropriate, mitigating measures for adverse effects as well as opportunities to enhance beneficial aspects. The appraisal will be presented in the AoS Report, which will be published for public consultation. The AoS Report has the following purposes:

- to ensure that the significant potential environmental and socio-economic effects associated with the draft NPS and alternatives are identified, characterised and appraised;
- to propose measures to mitigate the adverse effects identified and, where appropriate, to enhance potential positive effects;
- to provide a framework for monitoring the potential significant effects arising from the implementation of the draft NPS; and
- to provide sufficient information to those affected so that the development of the draft NPS is open and transparent.

5.2.3 In accordance with the requirements of Schedule 2 of the SEA Regulations (which reproduce the SEA Directive Annex I issues), the AoS Report will consist of:

- a Non-Technical Summary;
- a chapter setting out the scope and purpose of the appraisal;
- a chapter providing an overview of the draft NPS and its main objectives;
- a chapter summarising the key objectives of other plans and programmes and sustainability issues relevant to the draft NPS;
- a chapter setting out the proposed approach to appraisal;
- a chapter outlining the likely significant environmental and socio-economic effects of the implementation of the draft NPS and the reasonable alternatives to it, including cumulative effects, mitigating measures, uncertainties and risks. The reasons for selecting the draft NPS as proposed and for the rejection of alternatives, together with any difficulties encountered in completing the appraisal, will be explained;
- a chapter presenting views on implementation and monitoring;

- an appendix outlining statutory and selected consultee responses to scoping (and any additional views provided by interested members of the public or other organisations);
- an appendix, structured by each draft NPS AoS topic, setting out the review of plans and programmes, baseline analysis (including evolution of the baseline) and key sustainability issues alongside the detailed appraisal. It is anticipated that each topic section will contain:
  - **Introduction**: providing an overview and definition of the topic;
  - **Review of Plans and Programmes**: providing an overview of the international/European, UK and national policy context in which the draft NPS sits;
  - **Overview of the Baseline**: summarising the baseline for each of the topic areas at the UK and national (England, Scotland and Wales) level. This includes the key environmental characteristics of each topic or area most likely to be significantly affected;
  - **Summary of Existing Problems Relevant to Water Resources**: identifying the key topic specific issues considered as part of the appraisal;
  - **Likely Evolution of the Baseline**: describing the likely evolution of baseline conditions without the implementation of the draft NPS;
  - **Assessing Significance**: identifying the AoS objectives, guide questions and associated definitions of significance related to the topic area and used in the appraisal of the effects of draft NPS; and
  - **Appraisal**: including completed appraisal matrices providing information on the potential nature and scale of effects, proposed mitigation measures (where appropriate) and measures for enhancement, assumptions and uncertainties and additional information that may be required.
- an appendix detailing monitoring requirements; and
- an appendix outlining how the quality assurance checklist identified in the ODPM SEA Guidance has been met.

Appendix A
Quality Assurance Checklist

The Government's Guidance on SEA contains a quality assurance checklist to help ensure that the requirements of the SEA Directive are met. Those requirements relevant to the scoping stage have been highlighted below and a signpost provided to where the requirements are met in this AoS Scoping Report.

Objectives and Context	
The plan's purpose and objectives are made clear.	Presented in Section 2.
Environmental issues, including international and EC objectives, are considered in developing objectives and targets.	Section 3 and Appendix B identify the sustainability baseline issues and set out the environmental protection objectives and targets and how these are linked to the AoS objectives. Section 4 presents the AoS objectives and guide questions. AoS objectives are clearly set out and linked to indicators and targets where appropriate. Section 3 and Appendix B identify relevant plans and programmes. Links to other related plans, programmes and policies are identified and explained.
Scoping	
The environmental consultation bodies are consulted in appropriate ways and at appropriate times on the content and scope of the Scoping Report.	This AoS Scoping Report is subject to consultation.
The SEA focuses on significant issues.	Key sustainability issues that could arise from the implementation of the draft NPS have been identified in this Scoping Report (see Section 3) and Appendix B.
Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.	Section 3 describes the key difficulties encountered during the preparation of this Scoping Report.
Alternatives	
Realistic alternatives are considered for key issues, and the reasons for choosing them are documented.	Potential alternatives are identified in Section 2.
The environmental effects (both adverse and beneficial) of each alternative are identified and compared.	To be presented in the AoS Report.
Inconsistencies between the alternatives and other relevant plans, programmes or policies are identified and explained.	To be presented in the AoS Report.
Reasons are given for selection or elimination of alternatives.	To be presented in the AoS Report.
Baseline Information	

Relevant aspects of the current state of the environment and their likely evolution without the plan are described.	Refer to Section 3 and Appendix B.
Characteristics of areas likely to be significantly affected are described, including areas wider than the physical boundary of the plan area where it is likely to be affected by the plan where practical.	Refer to Appendix B.
Difficulties such as deficiencies in information or methods are explained.	These are stated throughout the Scoping Report where appropriate and in Section 3.
Prediction and Evaluation of Significant Environmental Effects	
Effects identified include the types listed in the Directive (biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage and landscape) as relevant; other likely environmental effects are also covered as appropriate.	Set out as part of the appraisal methodology in Section 4.
Both positive and negative effects are considered, and the duration of effects (short, medium, or long term) is addressed.	Set out as part of the appraisal methodology in Section 4.
Likely secondary, cumulative and synergistic effects are identified where practicable.	Set out as part of the appraisal methodology in Section 4.
Inter-relationships between effects are considered where practicable.	Set out as part of the appraisal methodology in Section 4.
The prediction and evaluation of effects makes use of relevant accepted standards, regulations and thresholds.	Set out as part of the appraisal methodology in Section 4.
Methods used to evaluate the effects are described.	Set out as part of the appraisal methodology in Section 4.
Mitigation Measures	
Measures envisaged to prevent, reduce and offset any significant adverse effects of implementing the plan or programme are indicated.	To be presented in the AoS Report.
Issues to be taken into account in project consents are identified.	To be presented in the AoS Report.
Environmental Report	
Is clear and concise in its layout and presentation.	The proposed structure of the AoS Report is set out in Section 5. The structure is subject to early consultation and review as part of consultation on the Scoping Report.
Uses simple, clear language and avoids or explains technical terms.	To be presented in the AoS Report.

Uses maps and other illustrations where appropriate.	To be presented in the AoS Report.
Explains the methodology used.	To be presented in the AoS Report.
Explains who was consulted and what methods of consultation were used.	To be presented in the AoS Report.
Identifies sources of information, including expert judgement and matters of opinion.	To be presented in the AoS Report.
Contains a non-technical summary covering the overall approach to the SEA, the objectives of the plan, the main options considered, and any changes to the plan resulting from the SEA.	To be presented in the AoS Report.
Consultation	
The SEA is consulted on as an integral part of the plan-making process.	Defra is undertaking separate consultation on the NPS options and the draft NPS. The responses to the AoS scoping consultation will be presented in the final AoS Scoping Report. A summary of the consultation on the AoS Report will then be included in the Post Adoption Statement.
Consultation Bodies and the public likely to be affected by, or having an interest in, the plan or programme are consulted in ways and at times which give them an early and effective opportunity within appropriate timeframes to express their opinions on the draft plan and Environmental Report.	Defra is undertaking separate consultation on the NPS options and the draft NPS. It is also undertaking consultation on the scope of the AoS and the findings of the AoS. Defra will select the most appropriate methods to consult to ensure early and sustained interest from consultees in order to provide timely and insightful views.
Decision-making and Information on the Decision	
The Environmental Report and the opinions of those consulted are taken into account in finalising and adopting the plan or programme.	This will be included in the Post Adoption Statement (to be issued following consultation on the AoS Report).
An explanation is given of how they have been taken into account.	This will be included in the Post Adoption Statement (to be issued following consultation on the AoS Report).
Reasons are given for choosing the plan or programme as adopted, in the light of other reasonable alternatives considered.	This will be included in the Post Adoption Statement (to be issued following consultation on the AoS Report).
Monitoring Measures	
Measures proposed for monitoring are clear, practicable and linked to the indicators and objectives used in the SEA.	To be presented in the AoS Report.
Monitoring is used, where appropriate, during implementation of the plan or programme to make good deficiencies in baseline information in the SEA.	To be presented in the AoS Report.

Monitoring enables unforeseen adverse effects to be identified at an early stage (these effects may include predictions which prove to be incorrect).	To be presented in the AoS Report.
Proposals are made for action in response to significant adverse effects.	To be presented in the AoS Report.

Appendix B
Baseline and Contextual Information

[Presented Separately]

Appendix C
Definitions of Significance

Illustrative Guidance for the Assessment of Significance for Biodiversity and Nature Conservation

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would have a significant and sustained positive effect on European or national designated sites and/or protected species. (e.g. fully supports all conservation objectives on site, long-term increase in population of designated species); • Option will create new areas of wildlife interest with improved public access in areas where there is a high demand for access to these sites.
+	Positive	• Option would have a minor positive effect on European or national designated sites and/or protected species (e.g. – supports one of the conservation objectives on site, short-term increase in population of designated species); • Option would have a positive effect on local biodiversity (e.g. through removal of all existing disturbance/pollutant emissions, or creation of new habitats leading to long-term improvement to ecosystem structure and function); • Option would enhance existing public access to areas of wildlife interest in areas where there is some demand for these sites.
0	Neutral	• Option would not have any effects on European or national designated sites and/or any species (including both designated and non-designated species); • Option would not affect public rights of way or access to areas of wildlife interest.
-	Negative	• Option would have negative effects on local biodiversity (e.g. through an increase in disturbance/pollutant emissions, or some loss of habitat leading to temporary loss of ecosystem structure and function); • Option would decrease public access to areas of wildlife interest in areas where there is some demand for access to these sites.
--	Significant Negative	• Option would have a negative effect on European or national designated sites and/or protected species (i.e. on the interest features and integrity of the site, by preventing any of the conservation objectives from being achieved or resulting in a long-term decrease in the population of a priority species). These effects could not be reasonably mitigated.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Population, Economics and Skills

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would help ensure sufficient water resources infrastructure is in place to meet increased future long term regional demand for water and to support economic development; • Option would ensure a significant additional regional affordable supply of water is maintained and vulnerable customers protected; • Option would incorporate the provision of social infrastructure and amenities; • Option would provide educational services/facilities and offer long-term opportunities for skills development including, for example, apprenticeship schemes; • Option would generate in the order of 800 or more direct full time equivalent (FTE) employment opportunities per annum[1], a large proportion of which would benefit the local community; • Option would generate significant investment in local supply chains fostering economic growth, generating indirect employment opportunities and enhancing the robustness of the local economy (e.g. through the procurement of local contractors to undertake construction activities); • Option would significantly enhance the attractiveness of an area to existing and prospective residents and businesses (e.g. through the generation of employment opportunities).
+	Positive	• Option would help ensure water resources infrastructure is in place to contribute towards meeting increased future long term sub-regional demand for water and to support economic development; • Option would ensure an additional affordable supply of water is maintained and vulnerable customers protected; • Option would stimulate some limited investment in existing services and amenities (e.g. associated with any increase in the work place population); • Option would provide some educational opportunities and skills development including, for example, apprenticeship schemes; • Option would generate some direct full time equivalent (FTE) employment opportunities per annum (below 800) which may benefit the local community; • Option would generate some limited investment in local supply chains (e.g. through the procurement of local contractors to undertake construction activities); • Option would enhance the attractiveness of an area to existing and prospective residents and businesses (e.g. through the generation of employment opportunities and provision of infrastructure).
0	Neutral	• Option would not affect the provision of water resources infrastructure. • Option would not affect affordable supplies of water. • Option would not affect social infrastructure and amenities available to local communities; • Option would not affect the provision of educational services/facilities or offer opportunities for skills development; • Option would not affect any local employment opportunities/increase local unemployment rates;

Effect	Description	Illustrative Guidance
		• Option would have no effect on wider economic benefits/undermine the growth and diversity of the local economy; • Option would not affect the attractiveness of an area to existing and prospective residents and businesses.
-	Negative	• Option would reduce/restrict the provision of water resources infrastructure. • Option would adversely affect affordable supplies of water. • Option would cause some disruption to existing services and amenities available to local communities which is likely to be felt in the short term; • Option would lead to a loss of some direct FTE jobs (below 800 per annum) (e.g. due to the cessation of some activities or rationalisation of activities on sites); • Option would reduce the resilience and diversity of the local economy (e.g. through loss of local supply chain opportunities); • Option would reduce local investment in an area and affect growth of local economy; • Option would undermine the attractiveness of an area to existing and prospective residents and businesses (e.g. due to impacts arising from construction activities or concerns regarding operational impacts); • Option would undermine the quality of life of the local population (e.g. due to noise and vibration associated with HGV movements during construction or operation) such that some complaints could be expected.
--	Significant Negative	• Option would reduce/restrict the provision of nationally significant water resources infrastructure. • Option would adversely affect affordable regional supplies of water. • Option would result in the loss of existing services and amenities available to local communities (e.g. where development is proposed on a site in community use); • Option would lead to a significant loss of direct FTE jobs (a minimum of 800 per annum) (e.g. due to the closure of local employment sites); • Option would significantly reduce the resilience and diversity of the local economy (e.g. through significant loss of local contracts and supply chain opportunities); • Option would lead to a significant reduction in investment in an area that would affect the growth of local economy; • Option would significantly undermine the attractiveness of an area to existing and prospective residents and businesses (e.g. due to impacts arising from construction activities or concerns regarding operational impacts); • Option would seriously undermine the quality of life of the local population (e.g. due to noise and vibration associated with HGV movements during the construction or operation of facilities) such that the project and local authority would be likely to experience a considerable number of complaints.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

[1] The proposed threshold of significance represents around 0.5% of the estimated 166,500 jobs supported by the water sector in the UK (https://www2.warwick.ac.uk/fac/soc/ier/ngrf/lmifuturetrends/sectorscovered/energy/sectorinfo/subsectors/).

Illustrative Guidance for the Assessment of Significance for Human Health

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would have a significant positive effect on the likely determinants of good health (including employment opportunities, level of deprivation, physical activity, access to open space and recreational activities, environmental quality and community safety); • Option would have a strong and sustained positive effect on health and well-being and acknowledges the health needs of specific groups in society (e.g. children, mums to be and the elderly); • Option would support the provision of healthcare facilities (i.e. as a result of an increase in the local population linked with employment provision).
+	Positive	• Option would have a positive effect on the likely determinants of good health (including employment opportunities, level of deprivation, physical activity, access to open space and recreational activities, environmental quality and community safety); • Option would have a positive effect on health and well-being and acknowledges the health needs of specific groups in society (e.g. children, mums to be and the elderly).
0	Neutral	• Option would have no observable effects (short, medium and long-term) on the health and well-being of individuals, specific groups in society (e.g. children, mums to be and the elderly) and communities.
-	Negative	• Option would have a negative effect on the likely determinants of good health (including employment opportunities, level of deprivation, physical activity, access to open space and recreational activities, environmental quality and community safety); • Option would have a negative effect on the health and well-being of individuals, specific groups in society (e.g. children, mums to be and the elderly) and communities; • Option would result in some nuisance and/or disruption to communities, such that some complaints could be expected.
--	Significant Negative	• Option would have a significant negative effect on the likely determinants of good health (including employment opportunities, level of deprivation, physical activity, access to open space and recreational activities, environmental quality and community safety); • Option would have a significant negative effect on the health and well-being of individuals, specific groups in society (e.g. children, mums to be and the elderly) and communities; • Option would cause statutory nuisance or a sustained and significant nuisance and/or disruption to communities.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Land Use, Geology and Soils

Effect	Description	Illustrative Guidance
++	Significant positive	• Option would restore and significantly improve soil quality and land stability to conditions beyond current levels and remove all soil contamination so that soil functions and processes would be significantly improved in the long term; • Option would minimise the use of, and protect from irreversible damage, high quality agricultural land; • Option would have a significant and sustained positive impact on national designated geological sites; • Option would seek to minimise the use of any undeveloped land, and look to preferentially reclaim and redevelop significant areas of previously developed or derelict land.
+	Positive	• Option would generate minor improvements in soil quality and land stability and would remove some soil contamination so that soil functions and processes would be improved in the long term; • Option would reduce any potential damage to high quality agricultural land; • Option would reduce any potential hazard associated with existing soil contamination; • Option would have a minor and temporary positive impact on a national designated geological site; • Option would seek to preferentially make use of previously developed land.
0	Neutral	• Option would not significantly affect potential hazards associated with any existing contamination; • Option would not cause damage or loss to soil such that soil function and processes would not be affected; • Option would not affect land stability; • Option would not involve significant loss of any undeveloped or developed land.
-	Negative	• Option would lead to an increase in pollutant discharges to soil; however, these would be less than permitted limits, such that there would be minor short-term increases in land contamination; • Option would cause minor increases in potential hazards associated with existing soil contamination; • Option would cause minor increases in potential hazards associated with land stability; • Option would cause a temporary loss of soil so that soil function and processes would be negatively affected in the short/medium term; • Option would cause minor short-term negative effects on geological conservation sites/important geological features or soils of high importance; • Option would lead to the majority of development using undeveloped land or land that has reverted to a 'wild' state.

Effect	Description	Illustrative Guidance
--	Significant negative	• Option would lead to a statutory limit being reached or exceeded in relation to land contamination, such that there would be a major and sustained increase in land contamination; • Option would cause major and sustained increases in potential hazards associated with existing soil contamination; • Option would cause major increases in potential hazards associated with land stability; • Option would cause considerable loss of soil quality, such that soil function and processes would be irreversibly and significantly affected; • Option would cause a substantial and permanent loss of, or damage to, soil of high importance (such as best and most versatile agricultural land) and/or designated geological conservation sites/important geological features; • Option would not develop derelict or previously developed land, but would lead to development of significant areas of undeveloped land/ land that has reverted to a 'wild' state.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Water Quality

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would significantly decrease the amount of waste water, surface run-off and pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking water receptors) would be significantly improved and sustained and water targets (including those relevant to chemical and ecological condition) reached and exceeded; • Option would significantly improve surface, ground, estuarine and coastal water quality; • Option would significantly improve Water Framework Directive waterbody status (or potential).
+	Positive	• Option would lead to minor decreases in the amount of waste water, surface run-off and/or pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking water receptors) may be improved to some level temporarily and some water targets (including those relevant to chemical and ecological condition) would be reached/exceeded; • Option would improve surface, ground, estuarine and coastal water quality; • Option would improve Water Framework Directive waterbody status (or potential).
0	Neutral	• Option would not change the amount of waste water, surface run-off and/or pollutant discharges such that the quality of water receptors would not be affected; • Option would not affect Water Framework Directive waterbody status (or potential).
-	Negative	• Option would lead to minor increases in the amount of waste water, surface run-off and/or pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking water receptors) may be decreased to some level temporarily and it may prevent some water targets (including those relevant to chemical and ecological condition) from being achieved; • Option would decrease (directly or indirectly) surface, ground, estuarine and coastal water quality; • Option would lead to a decrease in Water Framework Directive waterbody status (or potential).
--	Significant Negative	• Option would lead to major increases in the amount of waste water, surface run-off and/or pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking water receptors) would be considerably increased and some or all water targets (including those relevant to chemical and ecological condition) would not be achieved. • Option would significantly decrease (directly or indirectly) surface, ground, estuarine and coastal water quality • Option would significantly decrease Water Framework Directive waterbody status (or potential).
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Water Quantity

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would lead to a major increase in water supply/availablity such that the risk of water shortages in an area is significantly decreased and abstraction is at a sustainable level in the long term; • Option would lead to a major reduction in water use compared to prior to development such that the risk of water shortages in an area is significantly decreased and abstraction is at a sustainable level in the long term; • Option would lead to a major reduction in the risk and/or severity of droughts.
+	Positive	• Option would lead to a minor increase in water supply/availablity such that the risk of water shortages in an area is decreased and abstraction is at a sustainable level in the long term; • Option would lead to a minor reduction in water use compared to prior to development such that the risk of water shortages in an area is decreased in the short term and abstraction is closer to sustainable levels than prior to development; • Option would lead to a minor reduction in the risk and/or severity of droughts.
0	Neutral	• Option would not significantly affect water demand and abstraction levels would not be altered.
-	Negative	• Option would lead to a minor reduction in water supply/availablity such that the risk of water shortages in an area is increased; • Option would lead to a minor increase in water use compared to prior to development such that the risk of water shortages in an area is increased to some level in the short term, particularly in periods of low flow, and abstraction is considered beyond sustainable levels; • Option would lead to a minor increase in the risk and/or severity of droughts.
--	Significant Negative	• Option would lead to a major reduction in water supply/availablity such that the risk of water shortages in an area is significantly increased and abstraction is not at a sustainable level in the long term; • Option would lead to major increases in water use compared to prior to development such that the risk of water shortages in an area is significantly increased and abstraction is significantly beyond sustainable levels; • Option would lead to an exceedance of an abstraction license limits. • Option would lead to a major increase in the risk and/or severity of droughts.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Flood Risk and Coastal Change

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would result in a significant decrease in people or property at risk of, or affected , flooding, coastal inundation or sea level rise.
+	Positive	• Option would result in a decrease in people or property at risk of, or affected by, flooding, coastal inundation or sea level rise.
0	Neutral	• Option would not lead to an overall change in the number of people or property at risk of, or affected by, flooding, coastal inundation or sea level rise; • Option would result in development being sited in Flood Zone 1 (or equivalent) areas.
-	Negative	• Option would result in an increase in people or property at risk of, or affected by, flooding, coastal inundation or sea level rise; • Option would result in development being sited in Flood Zone 2 (or equivalent) areas.
--	Negative	• Option would result in a significant number of people or property affected by flooding, coastal inundation or sea level rise; • Option would result in development being sited in Flood Zone 3 (or equivalent) areas.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Air Quality

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would significantly improve local air quality through a sustained reduction in concentrations of pollutants identified in national air quality objectives.
+	Positive	• Option would lead to a minor improvement in local air quality from a reduction in concentrations of pollutants identified in national air quality objectives.
0	Neutral	• Option would not affect local air quality.
-	Negative	• Option would result in a minor decrease in local air quality; • Option would have a negative effect on local communities and biodiversity due to an increase in air and odour pollution and particulate deposition.
--	Significant Negative	• Option would cause a significant decrease in local air quality (e.g. leading to an exceedance of Air Quality Objectives for designated pollutants and the designation of a new Air Quality Management Area); • Option would have a strong and sustained negative effect on local communities and biodiversity due to significant increases in air and odour pollution and particulate deposition.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Noise

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would significantly improve the ambient noise environment in the vicinity of potential or actual sites.
+	Positive	• Option would lead to an improvement in the ambient noise environment in the vicinity of potential or actual sites.
0	Neutral	• Option would not affect the noise environment of potential or actual sites.
-	Negative	• Option would result in a minor negative effect on the ambient noise environment in the vicinity of potential or actual sites; • Option would cause minor disturbance associated with vibration on potential or actual sites.
--	Significant Negative	• Option would result in a major negative effect on the ambient noise environment in the vicinity of potential or actual sites over the short or longer term; • Option would cause major disturbance associated with vibration on potential or actual sites over the short or longer term.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Climate Change

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would help to significantly reduce carbon and other greenhouse gas emissions; • Option would significantly increase resilience/decrease vulnerability to climate change in the water supply and wider environment.
+	Positive	• Option would help to reduce carbon and other greenhouse gas emissions; • Option would increase resilience/decrease vulnerability to climate change in the water supply and wider environment.
0	Neutral	• Option would not lead to an overall change in carbon and other greenhouse gas emissions and would not contribute to climate change or resilience to climate change within the wider environment.
-	Negative	• Option would increase carbon and other greenhouse gas emissions; • Option would decrease resilience/increase vulnerability to climate change in the water supply and wider environment.
--	Significant Negative	• Option would significantly increase carbon and other greenhouse gas emissions; • Option would significantly decrease resilience/increase vulnerability to climate change in the water supply and wider environment.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Waste and Resource Use

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would increase the capacity of waste management infrastructure; • Option would create no additional hazardous or non-recyclable waste, whilst maximising the proportion of materials that are re-useable or recyclable; • Option would ensure the safe handling of hazardous wastes; • Option would make best use of existing infrastructure and resources (e.g. buildings and other facilities on sites) and help conserve natural resources.
+	Positive	• Option would not create an increase in the volume of hazardous and non-recyclable wastes that require disposal; • Option would increase the volume of materials reused and recycled; • Option would make best use of existing infrastructure and resources (e.g. buildings and other facilities on sites).
0	Neutral	• Option would not create an increase in the volume of hazardous and non-recyclable wastes that require disposal; • Option would have no effect on the capacity of waste management infrastructure; • Option would not have any impact on existing natural resources.
-	Negative	• Option would increase volumes of hazardous and non-recyclable waste that would require disposal; • Option would have a limited adverse impact on the capacity of existing waste management systems; • Option would require the limited use of natural resources during construction and operational stages.
--	Significant Negative	• Option would generate a high volume of hazardous and non-recyclable waste that would require disposal; • Option would impede the achievement of Government and national targets for minimising, recovering and recycling waste; • Option would have a significant adverse impact on the capacity of existing waste management systems (e.g. leading to the permitting of additional landfill capacity to accommodate waste); • Option would increase risks associated with the handling of hazardous wastes; • Option would require a significant volume of natural resources and result in the direct loss of resources.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Traffic and Transport

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would make a significant positive and long-term contribution to minimising the direct and indirect effects of traffic and transport associated with nationally significant water resources infrastucture.
+	Positive	• Option would make a positive contribution to minimising the direct and indirect effects of traffic and transport associated with nationally significant water resources infrastucture.
0	Neutral	• Option would not have any effects on traffic and transport.
-	Negative	• Option would have minor, short-term adverse effects associated with the direct and indirect impacts of traffic and transport realted to nationally significant water resources infrastucture.
--	Significant Negative	• Option would cause significant long-term effects associated with the direct and indirect impacts of traffic and transport related to nationally significant water resources infrastucture.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Cultural Heritage

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would make a significant positive and long-term contribution to the setting and conservation of designated and locally important cultural heritage features (e.g. through enhancement of setting, permanent removal of a structure creating a negative visual impact or large scale enhancement of designated features).
+	Positive	• Option would bring minor short-term improvements to the setting and conservation of designated and locally important cultural heritage features (e.g. temporary removal of a structure creating a negative visual impact).
0	Neutral	• Option would not have any significant effects on any cultural heritage sites or assets or their setting.
-	Negative	• Option would result in minor short-term degradation to the setting and conservation of designated and locally important cultural heritage features (e.g. temporary use of equipment/structures creating a negative visual impact).
--	Significant Negative	• Option would cause long-term degradation to the setting and conservation of designated and locally important cultural heritage features (e.g. through direct and permanent loss or damage to designated assets or the introduction of a structure that will have a considerable and permanent negative visual impact).
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

Illustrative Guidance for the Assessment of Significance for Landscape and Townscape

Effect	Description	Illustrative Guidance
++	Significant Positive	• Option would make a significant positive contribution to statutorily-designated landscapes and/or their setting; • Option would have a significant positive effect on local landscapes and townscapes and/or their setting (e.g. through the replacement of poorly designed/derelict buildings with high quality development); • Option would enhance public access to the countryside and increase open space provision.
+	Positive	• Option would serve to enhance statutorily-designated landscapes and/or their setting; • Option would have a positive effect on local landscapes and townscapes and/or their setting; • Option would enhance public access to open spaces and the countryside.
0	Neutral	• Option would not have any effect on statutorily-designated landscapes or their setting; • Option would not have any effects on local landscapes and townscapes or their setting • Option would not affect visual amenity; • Option would not enhance or restrict public access to open spaces and the countryside.
-	Negative	• Option would have short-term negative effects on statutorily-designated landscapes and/or their setting; • Option would have a negative effect on the intrinsic character of local landscapes and townscapes and/or their setting; • Option would affect the visual amenity of local communities; • Option would temporally restrict public access to open spaces and the countryside.
--	Significant Negative	• Option would have long-term negative effects on statutorily-designated landscapes (such as Areas of Outstanding Natural Beauty) and/or their setting; • Option would severely affect the intrinsic character of local landscapes and townscapes and/or their setting; • Option would severely affect the visual amenity of local communities; • Option would result in the loss of open spaces and restrict public access to the countryside.
?	Uncertain	• From the level of information available, the effect that the option would have on this objective is uncertain.

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