Hampshire Water Transfer and Water Recycling Project

Environmental Statement – Chapter 5 EIA approach and methodology

VOLUME NUMBER: 6

PLANNING INSPECTORATE SCHEME NUMBER: WA010002

APPLICATION DOCUMENT REFERENCE: 6.1

APFP REGULATION: 5(2)(a)

May 2026

Version 0

from Southern Water

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5.1 Introduction

5.1.1 This chapter sets out the purpose of the Environmental Impact Assessment (EIA) process and the approach taken to identify and assess the likely significant effects associated with the Hampshire Water Transfer and Water Recycling Project (hereafter referred to as the 'Proposed Development') for the purposes of this Environmental Statement (ES). This chapter describes the scope and methodology for the assessment and the overall approach taken to the EIA, as well as details of the consultation and engagement undertaken throughout the process. Details of topic specific methodologies, such as survey methods, are provided in ES Chapters 6 to 19, Volume I (topic chapters) (Document reference 6.1, DCO Volume 6).

5.1.2 The purpose of the EIA process is to identify, describe and assess the direct, indirect, secondary, cumulative, in-combination, transboundary, temporary, permanent, beneficial and adverse likely significant effects of the Proposed Development on the environment. This is achieved by identifying the baseline conditions and sensitive receptors within this baseline and understanding how these may be altered as a result of the Proposed Development to determine the likely significant effects on the environment. This considers the magnitude of the impact (degree of change) and the importance, sensitivity or value of the impacted receptor or resource. Mitigation is identified and applied to avoid, prevent, or reduce any likely significant adverse effects, where appropriate. An assessment of the residual effects is undertaken, after all mitigation has been applied.

5.1.3 The information gathered through the EIA process will be taken into account by the Secretary of State (SoS) in deciding whether to grant or refuse the Development Consent Order (DCO) application. Three main EIA documents are produced as part of the DCO pre-application process:

1. EIA scoping: The EIA Scoping Report set out the proposed scope of the EIA for the Proposed Development. It presented the data collected at the time and proposed further survey work and data collection, as well as the assessment methodology and approach to be used for the EIA. The EIA Scoping Report was submitted to the SoS in July 2023 and subsequently issued to statutory consultees by the Planning Inspectorate on behalf of the SoS for comment on the scope, methodology and approach proposed. The EIA Scoping Opinion was adopted by the Planning Inspectorate on behalf of the SoS in August 2023, see section 5.2 for details.
2. Preliminary Environmental Information (PEI) Report: The PEI Report set out the preliminary environmental information compiled by the Applicant which "*is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)*" (Regulation 12(2)(b) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations')) [1]. The PEI Report was made available for public consultation for a period of eight weeks from May to July 2024 as part of the statutory

consultation under sections 42, 47 and 48 of the Planning Act 2008 (PA 2008) [2] (hereafter referred to as the 'Summer 2024 Consultation').

3. Environmental Statement: The ES (this document) sets out the findings of the EIA undertaken for the Proposed Development. It presents the likely significant effects that would result from the Proposed Development if it was implemented, any mitigation to avoid, reduce or mitigate the likely significant effects and any residual likely significant effects after the implementation of mitigation measures. The ES and Non-Technical Summary (NTS) are submitted as part of the DCO application.

5.1.4 The EIA is undertaken in accordance with the EIA Regulations [1], notably Schedule 4 Information for Inclusion in Environmental Statements, and in line with Planning Inspectorate (2025) Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statement [3]. The EIA is also in accordance with the Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on Preparing Applications for Linear Projects [4].

5.1.5 Regulation 14(2) (a)-(f) of the EIA Regulations sets out the information that should be included in an ES. Table 5-1 shows how this ES provides the required information.

Table 5-1 Summary of Environmental Statement requirements (Regulation 14(2) of the Environmental Impact Assessment Regulations)

Required information	Location within the ES
(a) *a description of the proposed development comprising information on the site, design, size, and other relevant features of the development*	ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6).
(b) *a description of the likely significant effects of the proposed development on the environment*	ES Chapters 6 to 19 (topic chapters), and ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).
(c) *description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*	ES Chapter 3 Description of the Proposed Development, ES Chapters 6 to 19 (topic chapters), and ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6). ES Appendix 3.1 Primary mitigation, Volume II (Document reference 6.2, DCO Volume 6).
(d) a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;	ES Chapter 4 Consideration of alternatives, Volume I (Document reference 6.1, DCO Volume 6).

Required information	Location within the ES
(e) *a non-technical summary of the information referred to in sub-paragraphs (a) to (d);*	NTS (submitted alongside the ES), Volume I (Document reference 6.1, DCO Volume 6).
(f) *any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected*	Schedule 4, paragraphs 1-8 and 10: ES Chapters 6 to 19 (topic chapters) and ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6). Schedule 4, paragraph 9: the NTS (submitted alongside the ES), Volume I (Document reference 6.1, DCO Volume 6).

5.2 Environmental Impact Assessment scoping

5.2.1 An EIA Scoping Report was prepared in accordance with the EIA Regulations and was submitted to the Planning Inspectorate, acting under delegation on behalf of the SoS, on 21 July 2023, refer to ES Appendix 5.1 EIA Scoping Report, Volume II (Document reference 6.2, DCO Volume 6).

5.2.2 The EIA Scoping Report described the Proposed Development, the topics the Applicant proposed to assess in the EIA, as well as topics the Applicant proposed to be scoped out on the basis that there is no potential for likely significant effects.

5.2.3 Following a period of consultation with statutory consultees under the EIA Regulations, the Planning Inspectorate, on behalf of the SoS, issued an EIA Scoping Opinion for the Proposed Development on 31 August 2023 [5], refer to ES Appendix 5.2 EIA Scoping Opinion, Volume II (Document reference 6.2, DCO Volume 6). Responses received from scoping statutory consultees are included in an appendix to the EIA Scoping Opinion. Some consultees also provided comments on the EIA Scoping Report in January 2024, these were incorporated where possible in the PEI Report accompanying the Summer 2024 Consultation and have been fully addressed through technical engagement through the preparation of this ES. The EIA Scoping Opinion has been used to inform the assessment work and iterative design development for the Proposed Development.

5.2.4 ES Appendix 5.3 Response to EIA Scoping Opinion, Volume II (Document reference 6.2, DCO Volume 6), sets out responses to all general and topic-specific comments in the EIA Scoping Opinion, confirming how they have been addressed within this ES.

5.2.5 A summary of topics scoped in and out of this ES is presented in Table 5-2.

Table 5-2 Summary of Environmental Impact Assessment topics scoped in and out

Topic	Scoped in	Scoped out
Air quality and odour	✓	
Archaeology and cultural heritage	✓	
Terrestrial and freshwater biodiversity	✓	
Marine biodiversity	✓	

Topic	Scoped in	Scoped out
Carbon and climate change	✓	
Land quality and ground conditions	✓	
Land use and agriculture	✓	
Landscape and visual	✓	
Noise and vibration	✓	
Resources and waste management	✓	
Socio-economics, tourism and health	✓	
Traffic and transport	✓	
Water environment (including flood risk)	✓	
Major accidents and disasters	✓	
Shipping and navigation		✓
Coastal and marine processes		✓
Other marine uses		✓
Heat and radiation		✓

5.2.6 The following sections describe the rationale for scoping out topics. All scoped out topics/sub-topics (listed below) were agreed by the Planning Inspectorate, on behalf of the SoS in the EIA Scoping Opinion.

5.2.7 As well as the scoped out topics listed in Table 5-2, this section also includes the sub-topic of major accidents and disasters that was scoped in following receipt of the EIA Scoping Opinion.

Shipping and navigation

5.2.8 The topic of shipping and navigation has been scoped out of further assessment as installation of the Pipelines between Budds Farm Wastewater Treatment Works (WTW) and the Water Recycling Plant (WRP) site beneath the seabed would not have a physical connection with the water column.

5.2.9 The proposed location of the WRP site Sustainable Drainage System (SuDS) outfall is between the Harts Farm Way and A27 Havant Way Bridges, upstream of the nearest berthing areas associated with the Tarmac facility on the east bank of Hermitage Stream.

5.2.10 There is limited clearance under Harts Farm Way Bridge and as such there would not be sufficient clearance at high tide for most vessels to travel upstream of this point, and at mid-low tide there would be insufficient draft for vessels to navigate upstream. If a vessel were to navigate upstream beyond the Harts Farm Way bridge it would need to use the centre of the stream to find sufficient draft to not become grounded. In addition to this, there are no identified slipways or berths further upstream accessible from the Langstone Harbour direction and there are several weirs, pipelines and other obstructions across Hermitage Stream beyond both the Harts Farm Way and A27 bridges.

5.2.11 Furthermore, the SuDS outfall is to be constructed into the existing artificial bank and not protrude into the stream more than existing outfalls in the Hermitage Stream, refer to the Design Principles Document (Document reference 5.11, DCO Volume 5). Construction of the SuDS outfall may temporarily require use of a cofferdam, this would be for a limited period of approximately six weeks. The cofferdam, if used, would extend approximately 2m into the Hermitage Stream, and approximately 4m along the Hermitage Stream.

5.2.12 Given the information above, there would be no pathway for effects on shipping or navigation during construction, operation or decommissioning.

Coastal and marine processes

5.2.13 The topic of coastal and marine processes has been scoped out of further assessment as installation of the Pipelines between Budds Farm WTW and the WRP site beneath the seabed would not have a physical connection with the water column.

5.2.14 Effects from the construction or decommissioning of the WRP site SuDS outfall between the Harts Farm Way and A27 bridges are expected to be localised and temporary. The Hermitage Stream is heavily canalised for much of its length, including in the location of the WRP site SuDS outfall and construction of the SuDS would be through the canalised bank. As the banks on both sides of Hermitage Stream are canalised there is no risk of coastal erosion from the construction of the SuDS as long as management measures secured through the Outline Construction Environmental Management Plan (CEMP) (Document reference 7.1, DCO Volume 7) are followed. The SuDS outfall would be designed in keeping with other outfalls along the banks of Hermitage Stream and not protrude into the stream more than existing outfalls in the Hermitage Stream, refer to the Design Principles Document (Document reference 5.11, DCO Volume 5), meaning no effects on coastal process are anticipated from the existence of the structure during operation.

5.2.15 Potential operational impacts include erosion of the riverbed from the released water from the WRP site SuDS outfall. However, the WRP site SuDS outfall would be designed using good practice measures secured through the Design Principles Document (Document reference 5.11, DCO Volume 5) to avoid scour of the bed of the Hermitage Stream. Another potential operational impact would be changes to the release volumes and concentrations of treated wastewater from the existing Eastney Long Sea Outfall, and releases from the WRP site SuDS outfall into the lower reaches of the Hermitage Stream with potential for changes to the quality of water in the surrounding marine environment. This effect is considered in ES Chapter 9 Marine biodiversity and ES Chapter 19 Water environment, Volume I (Document reference 6.1, DCO Volume 6).

Other marine uses

5.2.16 Similarly, the topic of other marine uses has been scoped out for further assessment as installation of the Pipelines between Budds Farm WTW and the WRP site beneath the seabed would not have a physical connection with the water column.

5.2.17 Any effects associated with the construction and decommissioning of the WRP site SuDS outfall would have a physical connection but impacts are likely to be localised and temporary as the outfall would be built in line with measures secured through the Outline CEMP (Document reference 7.1, DCO Volume 7) and Design Principles Document (Document reference 5.11, DCO Volume 5). Any potential impacts from the installation of the SuDS outfall are assessed in ES Chapter 9 Marine biodiversity, Volume I (Document reference 6.1, DCO Volume 6). Furthermore, given the distant location of the WRP site SuDS outfall from the coast and the absence of recreational fishing activities in the immediate area, it is unlikely to impact marine users during the construction phase. No works, other than maintenance activities, would be taking place in the operational phase and therefore any effects on other marine users during the operational phase would be temporary and not significant.

Heat and radiation

5.2.18 The topic of heat and radiation has been scoped out for further assessment as the Proposed Development is a water transfer and water recycling project. As such, the nature and characteristics of the Proposed Development mean it would not generate any emissions of heat and/or radiation from its construction or operation, that could result in likely significant effects on the environment.

5.2.19 Potential likely significant effects of lighting on sensitive receptors are considered within ES Chapter 8 Terrestrial and freshwater biodiversity, ES Chapter 13 Landscape and visual and ES Chapter 17 Socio-economics, tourism and health, Volume I (Document reference 6.1, DCO Volume 6).

Major accidents and disasters

5.2.20 The topic of major accidents and disasters was proposed to be scoped out during the Applicant's EIA scoping process. However, based on comments received in the EIA Scoping Opinion (ID 3.15.1 to 3.15.10), the topic has been scoped into the EIA and presented in this ES in relation to the following sub-topics:

1. Fire risk
2. Unexploded ordnance
3. Bird strike risk
4. Industrial accidents, including hazardous chemicals and flooding from high pressure water pipe leak
5. Pollution incidents
6. Flooding related to the interaction between the Proposed Development with Havant Thicket Reservoir and emergency use of washouts and overflows
7. Transport accidents

5.2.21 The assessment for major accidents and disasters, which considers effects during construction, operation and decommissioning, is set out in ES Chapter 14 Major accidents and disasters, Volume I (Document reference 6.1, DCO Volume 6).

5.3 Environmental Impact Assessment methodology

Overview

5.3.1 This section sets out the general EIA methodology followed in this ES. The specific assessment methodology for each topic is detailed within the relevant technical chapters and supporting appendices. Some topics deviate from the general EIA methodology presented in this section; in each case this is explained within the ES topic chapters.

5.3.2 This section identifies key legislation, policy and guidance, the significance criteria applied to the topic assessments and any overarching assumptions or limitations made. This section also sets out the general approach to baseline, mitigation and assessment of cumulative and in-combination effects, with detail provided in ES Chapters 6 to 19 (topic chapters) and ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).

5.3.3 Archaeology and cultural heritage, carbon and climate change, land quality and ground conditions, land use and agriculture, noise and vibration, socio-economics and tourism (as part of the socio-economics, tourism and health chapter), and water environment follow a standard approach to the structure and form of each assessment based around the different components of the Proposed Development. However, the other chapters namely air quality and odour, terrestrial and freshwater biodiversity, marine biodiversity, major accidents and disasters, landscape and visual, resources and waste management, health (as part of the socio-economics, tourism and health chapter), and traffic and transport follow a structure more appropriate to their assessments, and in each case this is explained within the chapters.

Legislation, policy and guidance

5.3.4 The EIA Regulations [1] provide the legislative framework for the EIA process for applications for a DCO. This ES has been prepared in accordance with the EIA Regulations.

5.3.5 The approach to the EIA and the production of the ES has also taken account of relevant policy including:

1. Department of Environment, Food and Rural Affairs (2025) National Policy Statement for Water Resources Infrastructure [6].
    a. The framework under which applications for development consent for water resources infrastructure projects in England are determined.
2. Ministry of Housing, Communities and Local Government (December 2024 and subject to minor amendments in February 2025) National Planning Policy Framework [7].
    a. Sets out the Government's planning policies for England and how these are to be applied when determining an application. The framework does not contain specific policies for projects that require development consent under the PA 2008. However, its policies may be considered important and relevant in the determination of DCO applications under section 104 of the PA 2008.

5.3.6 Other relevant primary and secondary legislation and policies are set out in ES Chapter 2 Planning legislation and policy, Volume I (Document reference 6.1, DCO Volume 6), and the ES Chapters 6 to 19 (topic chapters), Volume I (Document reference 6.1, DCO Volume 6).

5.3.7 Local planning authorities and their policies, including other policy documents, are identified within the topic chapters (ES Chapters 6 to 19, Volume I (Document reference 6.1, DCO Volume 6)) where it is directly relevant to a topic assessment.

5.3.8 Overarching EIA guidance and advice documents taken into account in the EIA are set out below.

Planning Inspectorate Advice Notes

1. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation [8]
2. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements [3]
3. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope [9]
4. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Commitments Register [10]
5. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process [11]
6. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on Habitats Regulations Assessments [12]
7. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment [13]
8. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive [14]
9. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on Preparing Applications for Linear Projects [4]

The Institute of Sustainability and Environmental Professionals

1. Institute of Sustainability and Environmental Professionals (ISEP) (formerly the Institute of Environmental Management and Assessment) (2016) Environmental Impact Assessment Guide to: Delivering Quality Development [15]
2. Institute of Sustainability and Environmental Professionals (2017) Delivering Proportionate EIA [16]

5.3.9 Other topic specific methodologies, standards and good practice guidelines are set out in topic chapters, as necessary.

Baseline

5.3.10 To identify the effects of the Proposed Development on the environment, it is important to understand the existing environment (the 'baseline conditions').

Understanding the baseline allows any changes that would be caused by the Proposed Development to be predicted and assessed.

5.3.11 Environmental data used to inform the ES have been obtained primarily through desktop studies and site surveys.

Current baseline

5.3.12 Each topic chapter includes a description of the current environmental conditions. This is based on the study area(s) identified for each topic, and the information available.

5.3.13 The ES presents baseline information representing the conditions of the environment at the time of writing. The baseline year is topic specific depending on when the majority of baseline information has been obtained or modelled. For each topic, the most up-to-date data have been used and where this is not possible, justification is provided within ES Chapters 6 to 19, Volume I (Document reference 6.1, DCO Volume 6). Details of the baseline environment are provided within the individual topic chapters (ES Chapters 6 to 19, Volume I (Document reference 6.1, DCO Volume 6)).

Future baseline

5.3.14 For the purposes of the EIA, the future baseline conditions are identified for all assessment years considered by topics. Assessment years are stated in the assessment methodology section of the topic chapters of this ES, Volume I(Document reference 6.1, DCO Volume 6). The identification of the future baseline conditions involves predicting changes that are likely to happen between now and the relevant future baseline year, for reasons unrelated to the Proposed Development. This entails taking current conditions and committed development into consideration and using experience and professional judgment to predict what the future baseline conditions might look like prior to the start of construction, operation and decommissioning.

5.3.15 The future baseline is defined by considering the changes to the baseline that may result from factors, such as other plans, programmes and developments, that would occur over time in the absence of the Proposed Development. This includes policy-driven changes such as more renewable energy feeding the electricity grid and cleaner vehicles emitting less air pollution. Where there is an expected change in baseline for a topic over time, this change is predicted and reported to enable robust identification of the effects of the Proposed Development against a future baseline.

5.3.16 The consideration of future baseline conditions also takes into account the likely effects of climate change, as predicted at the time of writing. This has been based on information available from the Met Office UK Climate Projections 2018 [17]. Along with climate change, biosecurity risks in the form of plant pathogens and pests (e.g. ash dieback/*Hymenoscyphus fraxineus* and box tree caterpillar) are increasing, as such their impact on the future baseline has been considered.

5.3.17 This ES presents consideration of future baseline conditions from climate change where relevant within each topic chapter. Plans, programmes and developments considered as future baseline are presented in section 20.5 of ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO

Volume 6). This future baseline includes the Havant Thicket Reservoir Project[1] which has commenced construction and is due for completion in 2031. The site clearance and the impacts of enabling and early construction works are considered as future baseline. As noted in ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6), the Havant Thicket Reservoir Project as well as the pipeline element[2] are considered in the cumulative effects assessment as there would be an overlap in later construction activities and the early construction activities associated with the Proposed Development.

5.3.18 Water quality modelling undertaken for the Proposed Development (described in ES Chapter 19 Water environment, Document reference 6.1, DCO Volume 6) covers a range of different potential scenarios, with the future baseline scenario assuming a 'classic' phase whereby Havant Thicket Reservoir is initially filled by spring water and has a period of stabilisation (approximately two years) before recycled water is added. An additional scenario has also been considered where this stabilisation phase does not occur (for example, in the event of an extended Havant Thicket Reservoir Project construction period) and the filling of the reservoir is achieved through a combination of both spring water and recycled water. This additional future baseline scenario is reflected in relevant topic assessments which consider whether the environmental effects of the Proposed Development would be any different if the Havant Thicket Reservoir Project construction period extended. This is considered in Chapters 8 Terrestrial and freshwater biodiversity, 9 Marine biodiversity, 18 Traffic and transport, 19 Water environment and 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).

5.3.19 As required by the EIA Scoping Opinion (Scoping Opinion ID 3.14.8) the future baseline also considers any consequential or related works that are proposed to be delivered by the Applicant outside of the DCO where expected works would be completed before construction of the Proposed Development commences. Details of these developments are given in section 20.5 of ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).

Spatial and temporal scope

5.3.20 For each environmental topic assessed in this ES, the issues to be addressed, the study area(s) (i.e. the spatial scope) within which likely significant effects may occur, and the periods in time when the issues are assessed (i.e. the temporal scope) are set out in topic chapters. Consideration is given to effects that would arise during construction, operation (including maintenance) and decommissioning of the Proposed Development. This includes the identification of temporary, permanent, direct, indirect, cumulative and in-combination effects.

[1] Havant Thicket Reservoir is a development proposed by Portsmouth Water that received planning permission in October 2021 (Havant Borough Council planning application ref. APP/20/00990 and East Hampshire District Council planning application ref. 51680/001), with amended planning permissions received in 2024 (Havant Borough Council planning application ref. APP/23/00979, APP/24/00312 and APP/25/00837), and is now under construction.

[2] Pipeline from Bedhampton Springs to Havant Thicket Reservoir is a development by Portsmouth Water that received planning permission in October 2021 (Havant Borough Council planning application ref. APP/20/00991), with a revised application approved in May 2025 (Havant Borough Council planning application ref. APP/24/00405).

Spatial scope

5.3.21 The Order Limits are shown in ES Figure 1.1 Location of the Proposed Development and Order Limits, Volume III (Document reference 6.3, DCO Volume 6). The Order Limits represent the maximum extent of land required for temporary or permanent purposes in order to construct and operate (including maintain) the Proposed Development. Therefore, the EIA presented in this ES is undertaken on a worst case basis in accordance with the 'Rochdale Envelope' principle, see paragraph 5.3.35 for more details.

5.3.22 This allows for consideration of the environmental effects of the Proposed Development, to ensure that the likely significant effects, both adverse and beneficial, are identified. The land required for the Proposed Development has been refined, considering environmental and technical factors, consultation feedback and engagement with stakeholders.

5.3.23 Prior to DCO submission, the Applicant undertook final checking of the Order Limits against land parcel boundaries. This resulted in some very minor clipping of some of the Order Limits which, while reflected on the Works Plans (Document reference 2.3, DCO Volume 2) and Land Plans (Document reference 2.2, DCO Volume 2), is not reflected in the ES figures. These very small changes in the Order Limits do not change the effects reported in the ES.

5.3.24 Based on the Order Limits, each topic identifies appropriate study areas taking into account specific receptors or resources under consideration for that topic. Each topic chapter provides a description of the approach taken to define the study area, including ensuring it is of sufficient size to encompass the spatial extent over which impacts relevant to that topic and the related receptors and resources could occur.

5.3.25 The approach to the spatial scope (study area) for each topic assessment takes into account the following factors:

1. The physical extent of the Proposed Development
2. The nature of the baseline environment
3. The anticipated type, extent and characteristics of the environmental and social effects
4. Relevant guidance, standards, best practice and legislation

Temporal scope

5.3.26 The EIA predicts the likely significant effects of the Proposed Development against the future baseline during the construction, operation and decommissioning phases of the Proposed Development.

5.3.27 The phases of the Proposed Development assessed within the EIA presented in this ES are described below.

5.3.28 Effects may extend for a longer period than the phase in which the effects originally occur. For example, effects as a result of vegetation clearance during construction may be experienced for a number of years after construction has been completed, until any replanted habitats have matured. For the purposes of the EIA, the effects are described under the phase within which the impact arises (i.e. in the above example, vegetation loss is assessed for the construction phase).

Construction phase

5.3.29 Construction phase effects are those that are likely to occur during the construction of the Proposed Development, including temporary effects arising from construction activities (e.g. effects of noise and dust on nearby communities) and temporary and permanent existence effects as a result of the physical presence of the Proposed Development (e.g. effects of the use of land on habitats). This includes effects resulting from the activities associated with the construction and installation of the Proposed Development, effects associated with the temporary works such as access roads, haul roads, construction compound areas and work activities, as well as permanent land take associated with components such as Above Ground Plant and commissioning of the Proposed Development pre-operation.

5.3.30 Construction, which includes enabling and pre-construction works and commissioning works, would take place over a period of approximately five years with the main construction works taking place over a four year period. The intensity and scale of construction works would vary across the Order Limits over this period. ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6), sets out the high-level construction programme establishing the likely duration of works for each component. The assessment of construction effects is based on this programme. For each topic, a worst case construction scenario is assessed, either across the whole construction programme or a particular phase representing the 'peak' of activity within the construction programme for that topic. This is set out in each topic chapter of this ES, Volume I. For topics with shared impacts, such as air quality and noise and vibration, the same assessment years have been used.

Operational phase

5.3.31 Operational phase effects are those likely to occur as a result of the operation and maintenance of the Proposed Development. Operation would start following completion of construction and commissioning works. This would include effects resulting from maintenance activities as authorised under the DCO. Section 3.6 of ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6), sets out the maintenance activities which have been assessed in topic chapters, ES Chapters 6 to 19, Volume I (Document reference 6.1, DCO Volume 6). For each topic, operational impacts have been assessed based on the worst case assessment year, either across the whole assumed design life or a particular period. This is set out in each of the topic chapters, ES Chapters 6 to 19, Volume I (Document reference 6.1, DCO Volume 6).

Decommissioning phase

5.3.32 This phase is when the Proposed Development is at the end of its useful life, when it ceases to be operational. The expected design life of specific assets of each component are set out in ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6). The Applicant is not seeking consent for decommissioning. The Applicant is therefore not submitting an Outline

Decommissioning Environmental Management Plan as part of the DCO application.

5.3.33 While the Applicant is not seeking consent for decommissioning, reasonably foreseeable effects from decommissioning are assessed within the topic chapters in accordance with the EIA Scoping Opinion (Scoping Opinion ID 2.2.1). The assessment of decommissioning effects is concise and proportionate, undertaken on a qualitative basis, based on high-level assumptions and existing knowledge, techniques and equipment. For the majority of topics this means that decommissioning effects are considered to be no greater than during construction of the Proposed Development. This is due to the likely nature and scale of decommissioning activities being similar to or less than construction activities. The assessment of decommissioning effects assumes that works would follow good industry practice and would comply with all relevant statutory requirements applicable at the time. Any decommissioning works would take place in the context of the regulatory framework in place at that time, which may include a requirement to seek additional consents, permits or licences. Control measures are expected to be similar in nature to those in the Outline CEMP (Document reference 7.1, DCO Volume 7).

Temporal scales

5.3.34 The environmental assessments use defined temporal scales to characterise the duration of effects. For the purposes of assessment, the following definitions are applied unless otherwise defined in topic chapters. These are based on professional judgement and the characteristics of the Proposed Development:

1. Short-term: This is assumed to be temporary effects typically during the construction phase. However, it is acknowledged that construction, including enabling and commissioning works, would span a duration of approximately five years and therefore topic assessments take account of the duration of effects in the determination of magnitude of construction impacts and significance of construction effects. Short-term effects may also occur during the operational or decommissioning phases depending on the nature of the activity taking place, e.g. routine maintenance.
2. Medium-term: This is used to describe effects with a duration of 5-15 years, during the operational phase.
3. Long-term: This is used to describe effects with a duration that extends longer than 15 years. These effects typically arise during the operational phase.

Parameter approach – The 'Rochdale Envelope'

5.3.35 In assessing the effects of the Proposed Development from an environmental perspective, the principle of the 'Rochdale Envelope' is applied, in accordance with Planning Inspectorate (2025) Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope [9]. The advice note states:

> *"The 'Rochdale Envelope' approach is employed where the nature of the Proposed Development means that some details of the whole project have not been confirmed (for instance the precise dimensions of structures) when the application is submitted, and flexibility is sought to address uncertainty."*

5.3.36 This approach involves establishing a maximum design envelope within which the final detailed design of the Proposed Development will sit. These parameters are defined in ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) and are secured in the DCO through the Works Plans (Document reference 2.3, DCO Volume 2) and Design Principles Document (Document reference 5.11, DCO Volume 5). These provide clear parameters for environmental assessment, whilst allowing for flexibility of detailed design post-DCO. Each topic assessment therefore establishes those parameters likely to result in the maximum adverse effect (the worst case scenario) and an assessment is undertaken on this basis. While the EIA Scoping Opinion makes reference to confirming minimum design parameters (Scoping Opinion ID 2.1.8, 2.1.9 and 2.1.15), it is not necessary to provide these as assessing minimum parameters would not give rise to any new, different or additional effects compared to those reported for the worst case scenario topic assessments which are based on the maximum parameters.

5.3.37 ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) sets out areas of optionality which include the use of trenchless construction underneath the River Meon and within Wickham Park Golf Club. This optionality is being retained so further refinement of the location of the pipeline can be undertaken during detailed design and to provide flexibility for construction vehicle access. In areas of optionality, topics assume the worst case scenario within the parameters of the DCO for their assessment, for example in the case of Wickham Park Golf Club, topics assess the worst case location for the Pipeline within the Limits of Deviation.

5.3.38 Alternative construction methods are also presented for the tunnel shafts of the underground sections of the pipeline, where the method would be determined by the Contractor following further detailed ground investigation. The worst case construction method is identified and assessed for each topic chapter in this ES based on the options presented in ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6). A Trenchless Crossing and Tunnelling Schedule is appended to the Outline CEMP (Document reference 7.1, DCO Volume 7) which provides details of the specific locations at which trenchless and tunnelling crossing technology would be adopted to avoid or reduce impacts on the environment, communities or key transport infrastructure.

5.3.39 ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6), sets out the detail of the temporary construction compound locations and construction working widths for the Proposed Development. This provides the basis of the assumptions for the topic assessments, commitments for which are provided and secured through the Outline CEMP (Document reference 7.1, DCO Volume 7). These can be summarised as:

1. Construction works would take place across the entirety of temporary construction compound areas and within a 40m pipeline construction working width (for trenched open-cut pipeline construction), with each topic identifying a worst case location of the 40m construction working width within the Order Limits taking account of the Limits of Deviation for the pipeline.
2. There would be reduced working widths of 20m at specific and agreed locations in response to sensitive constraints (e.g. vegetation and roads) as presented

in the Reduced Working Width Schedule appended to the Outline CEMP (Document reference 7.1, DCO Volume 7).

3. Each side of reduced working width locations, the working width may need to be expanded beyond 40m to provide sufficient areas for storage of excavated materials. For every metre of reduced working width, an additional 14m^2 may be required. The sections of wider working width would be a maximum of 50m in width (remaining within the Order Limits) and 42m in length[3]. This may be provided at one or the other end of a reduced working width or be split across each side of the reduced working width.
4. There would be no construction works undertaken within Environmental Mitigation and Enhancement Areas (EMEA) that lie outside the relevant work numbers identified in the Works Plans (Document reference 2.3, DCO Volume 2), excluding temporary construction compounds or site access.
5. Vegetation is assumed to be removed across the full extent of temporary construction compound locations and the construction working width of the pipeline.

5.3.40 A worst case approach has been taken to the assessment of the removal of Portsmouth Water-installed mitigation planting. This means that in the areas impacted by the Proposed Development at the Bedhampton Springs site, there is the assumption that all mitigation planting installed by Portsmouth Water (as detailed in Portsmouth Water pipeline mitigation plans [18]) would be removed and then reinstated following construction, in accordance with the Outline Landscape and Ecology Management Plan (LEMP) (Document reference 7.5, DCO Volume 7).

Assessment of significance

5.3.41 The EIA Regulations require the identification of the likely significant effects of the Proposed Development. This includes consideration of the likely significant effects during the construction, operation and decommissioning phases of the Proposed Development.

5.3.42 The assessment of the significance of effects for the majority of topics is based on a three-step process:

1. Assigning value (or sensitivity) to receptors or resources
2. Assigning magnitude of impact
3. Assigning significance of effect

5.3.43 The methodology is designed to consider whether the construction, operation and/or decommissioning of the Proposed Development would have likely significant adverse or beneficial effects on any receptors or resources. Where appropriate, a matrix approach is applied to frame and present the judgements and conclusions made. This involves combining elements of topic-specific receptor or resource sensitivity and magnitude of impact to determine the significance of effects resulting from the Proposed Development.

[3] 42m length assumption for EIA purposes is based on the longest section of reduced working width which is 30m in length. As a worst case this assumed 42m length of widened working width (up to 50m in width) is assessed at all reduced working width locations.

Assigning receptor or resource value (or sensitivity)

5.3.44 Receptors or resources are environmental features that have the potential to be affected by the Proposed Development, either beneficially or adversely. The ability of a receptor or resource to adapt to change, tolerate, and/or recover from potential impacts will be key in assessing its value (or sensitivity). The value (or sensitivity) of receptors or resources is an important consideration in the EIA process, and takes into account whether, for example, the receptor or resource is rare, or has protected or threatened status. In some instances, the value (or sensitivity) of a receptor or resource may be prescribed in topic specific guidance.

5.3.45 Value (or sensitivity) is defined within each topic chapter of this ES and takes into account factors including the following:

1. Vulnerability of the receptor or resource to change
2. Recoverability of the receptor or resource (e.g. is the change reversible or irreversible, permanent or temporary)
3. Importance of the receptor or resource

5.3.46 As a basic guide, the definition of the value (or sensitivity) levels for a generic receptor resource are given in Table 5-3, which is based on National Highways Guidance on LA104 Environmental assessment and monitoring [19]. It is acknowledged that whilst the Proposed Development is not a highways project, the definitions of value presented in Table 5-3 are considered standard practice within EIAs.

Table 5-3 Example definitions of value (or sensitivity) for a generic receptor or resource

Value (or sensitivity)	Description
High	Very high and high importance and rarity, international/national scale (for example internationally or nationally protected site)
Medium	Medium importance and rarity, regional scale (for example regionally protected site)
Low	Low importance and rarity, local scale
Negligible	Not considered to be important (for example common or widespread)

5.3.47 The overall receptor or resource value (or sensitivity) is determined by considering a combination of value, adaptability, tolerance and recoverability. Expert judgement is particularly important when determining the value (or sensitivity) of receptors or resources and each topic defines its own values within this (or a similar) framework.

Determining magnitude of impact

5.3.48 Impacts caused by a given effect can be either adverse or beneficial. The magnitude of the impact on receptors or resources is reported within this ES. Magnitude refers to the 'size' or 'amount' of an impact on a receptor or resource and is typically defined by four factors:

1. Extent: the area over which an effect occurs
2. Duration: the time for which the effect occurs

3. Frequency: how often the effect occurs
4. Severity: the degree of change relative to existing environmental conditions

5.3.49 The general definitions of magnitude of impact for a receptor or resource are included in Table 5-4, which notes adverse and beneficial changes, which is again based on National Highways Guidance on LA104 Environmental assessment and monitoring [19]. Where relevant, individual topic chapters set out variations on magnitude description requirements.

5.3.50 For each topic, the likely impacts of the Proposed Development are identified and compared with the baseline (the situation without the Proposed Development) or where appropriate the future baseline. Impacts are divided into those occurring during the construction, operation and decommissioning phases.

Table 5-4 Example definitions of magnitude of impact for a generic receptor or resource

Magnitude of impact		Definition
Major	Adverse	Loss of receptor or resource and/or quality and integrity of receptor or resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.
Moderate	Adverse	Loss of receptor or resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Minor	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.

Assessment of significance of effect

5.3.51 After establishing the receptor or resource sensitivity and magnitude of impact, the significance of effect is predicted by using quantitative or qualitative criteria, as well as professional judgement to ensure a robust assessment. Where professional judgement is applied in topic assessments, the factors taken into consideration in making any judgement are explained in relevant topic chapters. Where appropriate, a matrix such as the one presented in Table 5-5 is used to aid the assessment of effect significance. Expert judgement, latest guidance and any specific input from consultation, may increase or decrease the expected significance of effect, refer to ES Chapters 6 to 19 (topic chapters), Volume I (Document reference 6.1, DCO Volume 6).

5.3.52 A description of the approach taken to the assessment and interpretation of significance levels (neutral to major) is provided within each chapter on a topic-by-topic basis. This approach ensures that the definition of significance of effect is transparent, and the approach taken is relevant to and appropriate for each topic under consideration.

Table 5-5 Significance of effect matrix

		Magnitude of impact			
		Major	Moderate	Minor	Negligible
Sensitivity (value) of receptor or resource	High	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Minor
	Low	Moderate	Minor	Minor	Neutral
	Negligible	Minor	Neutral	Neutral	Neutral

5.3.53 Neutral, minor, moderate or major effects may be beneficial or adverse. Except where topic guidance requires otherwise, the significance of effect is described using the terms neutral, minor, moderate or major. Likely significant effects are generally defined as those where the significance of the effect is 'moderate' or greater [19]. Effects determined to be minor or neutral are deemed 'not significant' and do not require specific mitigation. The exception to this is if the combination of multiple neutral or minor effects have the potential to lead to a significant (i.e. 'moderate' or above) in-combination effect.

5.3.54 In some instances, the assessment may conclude that there is no effect on a receptor or resource. It should be noted that 'no effect' has not been included in the significance matrix above and as such these effects would be presented as 'neutral', except where otherwise stated in topic assessment methodologies in ES Chapters 6 to 19 (topic chapters), Volume I (Document reference 6.1, DCO Volume 6).

5.3.55 Not all environmental topics use the above approach. For example, some topics such as noise and vibration do not use a matrix-based approach but instead use numerical values to identify impacts and significance of effects. The approach for each environmental topic is defined in the relevant chapter.

Mitigation

5.3.56 The EIA Regulations require the ES to include a description of the measures envisaged to avoid, prevent, or reduce and, if possible offset likely significant adverse effects on the environment.

5.3.57 In broad terms, the EIA and design incorporate mitigation measures following a hierarchical system (i.e. mitigation hierarchy) as follows:

1. Avoidance and prevention: design and mitigation measures to prevent the effect (e.g. alternative design options or avoidance of environmentally sensitive sites).
2. Reduction: where avoidance is not possible, then mitigation is used to lessen the magnitude of impact or significance of effects.

3. Remediation: where it is not possible to mitigate (i.e. avoid or reduce) a likely significant adverse effect, these are measures incorporated within the Proposed Development to offset the adverse effect (e.g. new habitat to compensate for habitat loss elsewhere).

5.3.58 The Order Limits include Environmental Mitigation and Enhancement Areas (EMEAs) which are areas that have been identified for mitigation and enhancement proposals. The EMEAs will deliver, for example, areas of new planting to create habitat or screen views, protected species mitigation, or improvements to existing habitat. The provision of the environmental mitigation is necessary to deliver the Proposed Development within the 'Rochdale Envelope' assessed in this ES. The Applicant is seeking appropriate powers of compulsory acquisition to safeguard the delivery of the environmental mitigation. EMEAs provide areas of planting in addition to the committed reinstatement planting throughout the Order Limits, the locations of the EMEAs are shown in the Works Plans (Document reference 2.3, DCO Volume 2) and in the Design Principle Plans, appended to the Design Principles Document (Document reference 5.11, DCO Volume 5). Mitigation areas are secured in the DCO via the Design Principles Document (Document reference 5.11, DCO Volume 5).

5.3.59 For the purposes of the EIA, mitigation has been defined using ISEPs guidance Environmental Impact Assessment Guide to: Delivering Quality Development [15] as falling into three categories:

1. Primary (inherent) mitigation: modifications to the location or design of the Proposed Development which are a result of design evolution. Modifications which are an inherent part of the Proposed Development design for the purpose of avoiding, preventing or reducing likely significant environmental effects. For example, re-routing the Proposed Development to avoid passing through an ancient woodland. Primary mitigation embedded in the design for the Proposed Development that is taken into account in the assessments contained within this ES is described in the Primary and tertiary mitigation section of each topic chapter and in ES Appendix 3.1 Primary mitigation, Volume II (Document reference 6.2, DCO Volume 6).
2. Secondary (foreseeable) mitigation: measures or actions to prevent or reduce any remaining significant adverse environmental effects of the Proposed Development identified through the EIA process. For example, reptile translocation will be undertaken to mitigate for the potential killing or injury of common reptile species by the permanent loss of suitable habitat at the WRP site. These measures are identified during the EIA process and are described in the relevant topic chapters of this ES.
3. Tertiary (inexorable) mitigation: standard industry good practice measures or actions to reduce impacts, regardless of the design process and EIA assessment. These include actions that would be undertaken to meet existing legislative requirements, and/or actions that are considered to be standard good practice used to manage commonly occurring environmental effects. For example, considerate Contractors' practices for managing activities which have potential nuisance and environmental effects, such as the spillage of fuels, oils or other chemicals. An Outline CEMP (Document reference 7.1, DCO Volume 7) is provided as part of the suite of documents in the DCO application. This includes, but is not limited to, all identified topic tertiary measures to be adopted

during construction to avoid and reduce environmental effects, such as pollution control measures.

5.3.60 Additional outline management plans containing measures to mitigate likely significant effects, have also been submitted within Volume 7 of the DCO application. These include:

1. Framework Construction Traffic Management Plan (CTMP) (Document reference 7.2, DCO Volume 7), which includes the Framework Construction Worker Travel Plan (CWTP) and Framework Rights of Way Management Plan (RoWMP)
2. Traffic Management Strategy (TMS) (Document reference 7.3, DCO Volume 7)
3. Operational Environmental Management Plan (OEMP) (Document reference 7.7, DCO Volume 7)
4. Outline Landscape and Ecology Management Plan (LEMP) (Document reference 7.5, DCO Volume 7)
5. Outline Written Scheme of Investigation (WSI) (Document reference 7.6, DCO Volume 7)
6. Outline Skills and Employment Plan (SEP) (Document reference 7.9, DCO Volume 7)
7. Invasive Non-Native Species Biosecurity Plan (Document reference 7.10, DCO Volume 7)

5.3.61 This ES reports on the likely significant effects of the Proposed Development following the implementation of primary (inherent) and tertiary (inexorable) mitigation. It then reports on the likely significant effects of the Proposed Development following the implementation of any secondary (foreseeable) mitigation, which are known as 'residual effects'. Where secondary (foreseeable) mitigation is required to mitigate a likely significant effect, secondary mitigation measures are described in the Mitigation and monitoring subsection of each topic chapter in this ES. A clear statement is made as to whether the residual effects are significant or not significant. It should be reiterated that not all such effects are adverse; some are beneficial. Mitigation proposals have been finalised through the design and assessment process, having regard to feedback received through consultation responses and wider stakeholder engagement.

Implementation and enforcement of mitigation

5.3.62 Mitigation is being secured through the DCO. This is secured through requirements in the DCO and through other appropriate control mechanisms, as summarised in the Commitments Register, ES Appendix 5.5 Commitments Register, Volume II (Document reference 6.2, DCO Volume 6). Measures secured by way of DCO requirements or other control mechanisms are required to be implemented in accordance with the DCO.

5.3.63 Post-DCO, the Contractor at the detailed design, construction and operational stages of the Proposed Development will be required to comply with and deliver any requirements of the DCO and other appropriate control mechanisms and obligations.

Monitoring

5.3.64 Where appropriate, monitoring measures are set out within the ES topic chapters, providing details such as the identification of who will be responsible for the monitoring, how it will be reported, how the need for remedial action will be identified, and how this is secured and implemented through the DCO and/or other appropriate control mechanisms. This is reflected in ES Appendix 5.5 Commitments Register, Volume II (Document reference 6.2, DCO Volume 6). Monitoring measures identified to control construction effects are secured through the Outline CEMP (Document reference 7.1, DCO Volume 7). Where necessary, future monitoring and management measures related to the operation of the Proposed Development are secured through operational management plans including the OEMP (Document reference 7.7, DCO Volume 7) and Outline LEMP (Document reference 7.5, DCO Volume 7), respectively.

Enhancement

5.3.65 As well as environmental mitigation, the Proposed Development also seeks to provide additional environmental enhancement (hereafter referred to as environmental enhancements), including biodiversity and environmental net gain, within the Order Limits in order that the Proposed Development does not just remediate or offset any identified effects to the receiving environment, but improves the receiving environment and provides benefits to the local community. Enhancement is defined as measures taken to achieve a benefit, which are unrelated to an adverse impact, or which go beyond that required to mitigate/compensate for an impact. For example, restoration of a degraded habitat to leave it in a measurably better state than it was before the Proposed Development, or other interventions to leave a positive legacy for the environment and community. These enhancement measures have been developed through engagement with statutory consultees, local planning authorities and other stakeholders.

5.3.66 Enhancement areas identified through the design development process are reported within the relevant ES topic chapters but are not considered in the assessments. These enhancement areas are not necessary for the delivery of the Proposed Development and therefore consent is sought to deliver these environmental enhancements, but these will only be implemented subject to securing agreements with landowners. For EMEAs that contain enhancement areas, the differentiation between mitigation areas and enhancement areas is listed in the Design Principles Document (Document reference 5.11, DCO Volume 5).

In-combination effects

5.3.67 Regulation 5(2)(e) of the EIA Regulations requires that the ES considers the interaction of the likely significant effects identified in the assessments of the effects to population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and the landscape associated with a Proposed Development. In-combination effects are those that result from the interaction between the individual effects of the Proposed Development (e.g.

interaction of environmental topics such as air quality, noise and health), combined together on a single receptor or resource at a single point in time.

5.3.68 Where the in-combination effects for topics are inherently assessed within topic assessments (for example, the assessment of amenity effects in ES Chapter 12 Land use and agriculture, Volume I (Document reference 6.1, DCO Volume 6), considers the interaction of air quality, noise, landscape and visual, and traffic and transport on individual receptors), these are reported within the assessment section of the individual topic chapters of the ES for effects during construction, operation and decommissioning.

5.3.69 However, there is also the potential for in-combination effects to be experienced by receptors/receptor groups (human and non-human) shared by more than one topic that have not been inherently assessed within the topic chapters. A qualitative assessment of these effects is presented in ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6). The assessment uses a receptor-led process and considers the capacity of a receptor group to accommodate the combined changes that may be experienced from the Proposed Development. Detail on the in-combination assessment methodology is provided in ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).

Cumulative effects

5.3.70 As outlined in Schedule 4 paragraph 5(e) of the EIA Regulations, the ES is required to consider "*the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*". Cumulative effects of the Proposed Development together with the effects of other plans, programmes and developments/schemes may result in likely significant effects. This may be the result of effects on the environment during construction or operation (including maintenance) and decommissioning of the Proposed Development.

5.3.71 A review of local planning authority documents (e.g. local plans, strategies) has been conducted to identify relevant policies, programmes and local plan allocations to be considered in the cumulative effects assessment.

5.3.72 A review of other developments, including developments progressed by the Applicant under permitted development rights, located within 3km of the Order Limits which may give rise to cumulative effects has also been undertaken. For the topics of marine biodiversity, and resources and waste management this search area was widened in order to capture other developments that may impact the same receptors considered in the EIA presented in this ES. This is necessary as the impact pathways for marine biodiversity, and resources and waste management do not diminish with distance as is the case for the other topics.

5.3.73 The identified policies, programmes, allocations and other developments have been discussed with the local planning authorities and any additional policies, programmes, allocations and/or developments identified by the local planning authorities have been taken into account within the cumulative effects assessment presented in this ES. This includes additional developments identified by

Hampshire County Council in relation to potential cumulative effects on local traffic and transport.

5.3.74 Identified policies, programmes, allocations and developments relevant to the cumulative effects assessment are also presented in ES Appendix 20.1 List of 'other developments' – longlist and shortlist, Volume II (Document reference 6.2, DCO Volume 6).

5.3.75 As required by the EIA Scoping Opinion (Scoping Opinion ID 3.14.8), the cumulative effects assessment has considered any consequential or related works that are proposed to be delivered outside of the DCO where expected works would overlap with works associated with the Proposed Development, refer to section 20.5 of ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).

5.3.76 Details on the assessment of cumulative effects can be found in ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6), which provides an overview of the approach to undertaking the cumulative effects assessment and sets out the assessment findings. This follows the guidance set out in Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment [13].

Transboundary effects

5.3.77 Regulation 32 of the EIA Regulations establishes the procedural duties necessary where the SoS is of the view that a Proposed Development is likely to have significant effects on the environment in a European Economic Area (EEA) State; or where an EEA State is of the view that its environment is likely to be significantly affected by a Proposed Development. Planning Inspectorate (2025) Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process [11] sets out the procedures for transboundary notification and consultation associated with applications for development consent under the PA 2008.

5.3.78 Consideration has been given to the potential for transboundary effects on EEA States as a result of the Proposed Development in relation to each of the topic areas and the extent of effects for their receptors. There are no physical works or impacts likely to extend beyond the jurisdiction of the UK. There are no pathways by which impacts could be spread beyond the UK boundary via air and water, hence there are no anticipated effects which are likely to impact an EEA state. No such transboundary effects have been identified in relation to the Proposed Development, as there is no pathway for effects to occur outside the UK. The EIA Scoping Opinion (Scoping Opinion ID 2.2.12) agreed with the Applicant that the likelihood of transboundary effects resulting from the Proposed Development is so low that it does not warrant the issue of a detailed transboundary screening.

Non-Technical Summary

5.3.79 As required by regulation 14(2)(e) of the EIA Regulations a separate NTS, Volume I (Document reference 6.1, DCO Volume 6), is provided as part of the DCO application suite of documents. The NTS provides a summary of the information reported in the ES in an accessible and understandable format with use of simple graphics to communicate as effectively as possible the key information from the assessment.

5.4 Consultation and engagement

5.4.1 The DCO pre-application process includes a statutory requirement to undertake consultation. Ongoing stakeholder engagement is also an important part of the pre-application process, to share information and understand views of statutory and non-statutory stakeholders. For the application to be accepted by the SoS for examination, the Planning Inspectorate on behalf of the SoS needs to be satisfied that consultation has been undertaken adequately and in accordance with the requirements of Part 5, Chapter 2 of the PA 2008 [2]. Decision-making on refinements or amendments to the design of the Proposed Development have given regard to feedback received from both statutory consultees, as defined in section 42 PA 2008 [2], the local community and persons identified under Regulation 11(1)(c) of the EIA Regulations [1]. This ES has given due regard to issues raised through engagement and consultation where it is of relevance to the matters covered in the EIA.

5.4.2 The main aims of consultation and engagement from an EIA perspective are as follows:

1. Ensuring that statutory consultees, other bodies with a particular interest in the environment or the Proposed Development, and members of the public are informed of the proposals and provided with an opportunity to comment
2. Supplementing baseline information
3. Seeking consultee feedback on the design of the Proposed Development
4. Informing the scope of the environmental assessments
5. Obtaining input to the identification of potential impacts and effects and the development of appropriate mitigation
6. Seeking consultee feedback on the preliminary assessment findings set out in the PEI Report, in accordance with Regulation 12(2) of the EIA Regulations

5.4.3 The Applicant's approach to consultation and engagement has been collaborative, providing opportunities to engage and provide confidence that feedback from consultation has been analysed and taken into account.

5.4.4 Five EIA Working Groups were set up by the Applicant in summer 2022 to facilitate engagement with statutory consultees and relevant non-statutory consultees through the progression of the EIA for the DCO application, as described in Table 5-6. This method of engagement was designed to support the EIA process by enabling feedback to be provided on an ongoing basis on the design of the Proposed Development, baseline data, assessment scope and methodology, impact significance and potential mitigation measures and monitoring requirements.

Table 5-6 Overview of Environmental Impact Assessment Working Groups

EIA working Group	EIA attendees	Consultee attendees
Biodiversity and Water Environment	• Terrestrial and freshwater biodiversity • Marine biodiversity • Water environment	• Natural England • The Environment Agency • Marine Management Organisation

EIA working Group	EIA attendees	Consultee attendees
	• Land quality and ground conditions	• Forestry Commission • Local planning authorities
Emissions and Transport	• Traffic and transport • Air quality and odour • Noise and vibration • Resources and waste management • Carbon and climate change	• National Highways • The Environment Agency • Natural England • Local planning authorities
Community	• Socio-economics, tourism and health • Land use and agriculture • Equalities Impact Assessment	• NHS Hampshire, Southampton and Isle of Wight Clinical Commissioning Group • Local planning authorities
Historic Environment and Landscape	• Archaeology and cultural heritage • Landscape and visual	• Historic England • Natural England • Local planning authorities
Resilience	• Major accidents and disasters • Flood risk (part of Water environment) • Carbon and climate change	• Hampshire & Isle of Wight Fire and Rescue Authority • Hampshire Police and Crime Commissioner • The Environment Agency • Local planning authorities

5.4.5 Technical Working Groups were also set up in summer 2022 to engage with the Environment Agency (EA), Natural England (NE) and Marine Management Organisation (MMO) on a regular basis. This method of engagement allowed for the presentation of project updates, survey scopes and findings, and proposed assessment approach. The Terrestrial and freshwater biodiversity and Water environment topic teams were regular attendees, with other topics attending when relevant.

5.4.6 Joint Officer Group (JOG) meetings were set up in spring 2022 to engage with the host authorities (as described in Section 2.3 of ES Chapter 2 Planning legislation and policy, Volume I (Document reference 6.1, DCO Volume 6)) relevant to the Proposed Development on scheme development, programme, consultation, planning and in some cases EIA matters. The members of the JOG include Hampshire County Council, Havant Borough Council, Winchester City Council, Fareham Borough Council, Portsmouth City Council, Eastleigh Borough Council, East Hampshire District Council and when needed the South Downs National Park Authority (which is not a host authority) also attended.

5.4.7 The Wildlife and Water Interest (W&WI) Group was set up in summer 2022 as a forum to share targeted project information, garner feedback and secure support for the Proposed Development with non-statutory stakeholder groups that have a particular interest in the terrestrial, freshwater and marine environment. The members of the W&WI Group include Angling Trust, Chichester Harbour Conservancy, Hampshire Bat Group, Hampshire and Isle of Wight Local Nature Partnership, Hampshire and Isle of Wight Wildlife Trust, Hampshire Ornithological Society, Langstone Harbour Board, Royal Society for the Protection of Birds, Solent Forum, Test and Itchen Association, Test Valley Angling Club and Southampton Piscatorial Society, The Woodland Trust, Upper Itchen Restoration Group, Wessex Rivers Trust, and Wildfish.

5.4.8 Additional information on relevant engagement is provided in each of the ES topic chapters, ES Chapters 6-19, Volume I (Document reference 6.1, DCO Volume 6).

5.4.9 Public consultation on a non-statutory basis (Summer 2022 Consultation) was undertaken between 5 July and 16 August 2022. High-level environmental information was used to consult the public and stakeholders about the Proposed Development. The received non-statutory consultation feedback was reviewed with feedback and responses summarised within the Summer 2022 Consultation 'Response to feedback' Report.

5.4.10 The EIA Scoping Opinion, received on 31 August 2023, included comments from the Planning Inspectorate on behalf of the SoS which have been considered throughout the EIA process. Statutory consultees were also consulted by the Planning Inspectorate as part of the EIA scoping process. Their responses are included in an appendix to the EIA Scoping Opinion, ES Appendix 5.2 EIA Scoping Opinion, Volume II (Document reference 6.2, DCO Volume 6) and have been considered. Responses to the EIA Scoping Opinion can be found in ES Appendix 5.3 Response to EIA Scoping Opinion, Volume II (Document reference 6.2, DCO Volume 6), and is summarised in the topic chapters.

5.4.11 Summer 2024 Consultation was undertaken between 29 May and 23 July 2024. The PEI Report alongside standalone assessments and outline management plans were used to consult the public and stakeholders about the updated Proposed Development and preliminary EIA findings. The responses to this consultation are included in the Consultation Report (Document reference 5.1, DCO Volume 5).

5.4.12 Public consultation was undertaken again between 5 March and 4 April 2025 ('Spring 2025 Consultation'). The Environmental Water Quality Report, alongside a document summarising proposed design refinements were used to consult the public and stakeholders about the updated Proposed Development and provide an overview of the environmental water quality modelling, assessments and potential effects upon Havant Thicket Reservoir, Riders Lane Stream and Hermitage Stream, and Langstone Harbour and the Solent. The responses to this consultation are included in the Consultation Report (Document reference 5.1, DCO Volume 5).

5.5 Competent experts

5.5.1 As described in ES Chapter 1 Introduction, Volume I (Document reference 6.1, DCO Volume 6), the ES has been prepared by a team of competent experts. The EIA has been led by Arup and Haskoning on behalf of the Applicant. Both

companies have been awarded the EIA Quality Mark from ISEP, demonstrating competency in ES preparation. At the individual topic level, the EIA has been undertaken by competent experts with the relevant and appropriate experience in their respective topics.

5.5.2 In accordance with Regulation 14(4) of the EIA Regulations, a Statement of Competence, including professional qualifications and experience of each of the EIA technical leads is provided in ES Appendix 5.4 Statement of competence, Volume II (Document reference 6.2, DCO Volume 6).

5.6 Other environmental assessments

5.6.1 The EIA takes into account other relevant environmental assessments. To avoid duplication of assessment, details on other relevant environmental assessments is presented in section 1.4 of ES Chapter 1 Introduction, Volume I (Document reference 6.1, DCO Volume 6).

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