

# Hampshire Water Transfer and Water Recycling Project Environmental Net Gain Statement

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The Southern Water logo consists of three stylized, wavy blue lines of varying lengths, positioned to the right of the text 'Southern Water'.



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**Hampshire Water Transfer and Water Recycling Project**  
**Environmental Net Gain Statement**

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## Executive summary

1. This Environmental Net Gain (ENG) Statement has been prepared by Southern Water Services Limited (hereafter referred to as the 'Applicant') for the proposed Hampshire Water Transfer and Water Recycling Project ('the Project'). The Vision for the Project is to create a new, resilient and sustainable water supply that will protect and enhance the county's rare and sensitive chalk streams, while maintaining supplies for communities and the local economy.
2. ENG is defined in the National Policy Statement (NPS) for Water Resources Infrastructure (2025) [1] as "an approach to development that aims to leave the natural environment in a measurably better state than beforehand" (para 3.4.1). The NPS (2025) [1] states that applications for development consent should be accompanied by a statement demonstrating how opportunities for delivering ENG have been considered, and where appropriate, incorporated into the design of the Project.
3. This ENG Statement focuses on demonstrating how opportunities for delivering ENG were considered through the different stages of scheme development and where this has influenced and been incorporated into the evolving design; providing detail on the methods and results of the ENG assessment covering expected natural capital impacts and opportunities associated with the Project; and setting out what ENG-related measures the Applicant is committing to.
4. The Project has progressed through a detailed development process, aligned with the Regulators Alliance for Progressing Infrastructure Development (RAPID) gated process. This included six stages of scheme development (described in the Scheme Development Report (Document reference 5.10, DCO Volume 5) [2]), from initial appraisal of options to development of draft Order Limits and detailed design refinements. Aspects of relevance to ENG within each of these stages are described below.
5. **Stage 1: Development and Assessment of Initial Options (Gate 1 of the RAPID gated process)** – Eight potential alternatives in addition to the desalination plant at Fawley were assessed as part of the RAPID Gate 1 process. This included high level natural capital and Biodiversity Net Gain (BNG) assessments. Six options progressed to stage 2.
6. **Stage 2: Options Appraisal Process (Gate 2 of the RAPID gated process)** – Evaluations were carried out on six options using environmental, social, and economic criteria. These included a requirement to mitigate impacts to protected nature conservation sites, high-value habitats (such as ancient woodland), and key land uses like recreational spaces. BNG and natural capital assessments were undertaken, including use of the Statutory Biodiversity Metric (SBM) and monetisation of ecosystem services impacts. Option B.4 was confirmed as the preferred choice.
7. **Stage 3: Scheme development between RAPID Gate 2 and the Summer 2022 Consultation** - Initial pipeline routes were expanded into corridors and assessed against criteria including socioeconomics, land, water, flood risk, biodiversity, heritage, and engineering. The preferred corridor aimed to reduce impacts on

sensitive areas such as ancient woodland, priority habitats, ecological sites, and flood risk zones.

8. **Stage 4: Scheme development between the summer 2022 consultation and the Summer 2024 consultation** – The Applicant developed a Vision of a resilient, sustainable water supply that protects Hampshire’s chalk streams, and Preliminary Design Principles aligned with themes of climate, people, places and value. These included reducing land take, enhancing biodiversity and integrating buildings into their landscape context.
9. **Stage 5: Scheme development between the summer 2024 consultation and spring 2025 consultation** – Further design refinement included developing Environmental Mitigation and Enhancement Areas (EMEAAs) and identifying multifunctional solutions to maximise overall benefits. Measures considered included: reinstatement of grassland and woodland providing mitigation for habitat loss; incorporation of green roof on main process building; and enhancement of wet grassland and habitat connectivity.
10. **Stage 6: Scheme development between the spring 2025 consultation and Development Consent Order application** – Further refinement was made to EMEAAs and design principles, with ten benefits packages being developed to outline the committed benefits and legacy of the Project. A specific ENG assessment was undertaken during Stage 6.
11. The ENG assessment evaluated the direct impacts (positive and negative) to natural capital and ecosystem services as a result of the Project. It did not assess the embedded benefits of the Project’s built infrastructure components (i.e. avoiding low flows within chalk streams including the River Itchen) as this aspect reduces wider pressures on natural capital, rather than directly impacting the natural capital assets themselves. The methodology was agreed with Natural England and the Environment Agency following the Technical Working Group meeting on 13 February 2025. The assessment was delivered through a four-step approach.
12. National and local policy documents were reviewed to identify relevant ENG policy ambitions. Project-specific documentation was used to determine committed and potential mitigation and enhancement measures within and around the Order Limits. Using this information and expert judgement, the level of alignment with policy ambitions was classified as high, medium, or low.
13. The ENG policy review indicated that the Project will deliver multiple environmental benefits through committed measures, including in relation to biodiversity, green infrastructure and landscape, aligning with national and local policy objectives. It also showed that the potential measures, if secured, could enhance the Project’s overall environmental gains.
14. Ecosystem service changes were quantified and monetised in line with the Environment Agency’s Water Resource Planning Guidelines (WRPG) Supplementary Guidance [3] and Defra’s Enabling a Natural Capital Approach (ENCA) [4]. Biodiversity was assessed quantitatively using habitat extents from the Statutory Biodiversity Metric (SBM). Monetary valuation was applied to climate regulation, water purification, food production, recreation and health using recognised tools and datasets, including Department for Business, Energy and

Industrial Strategy carbon values [5], ENCA Services Databook [6], Natural Capital Accounts [7], and the Outdoor Recreation Valuation Tool [8].

15. At the time of assessment, predicted on-site habitat changes (including mitigation and enhancement measures) indicated a mixed impact on ecosystem service provision. There is an anticipated permanent decline in biodiversity (5-12% loss across all unit types) and water regulation/supply values (-£1,709 annually), alongside additional temporary losses in the latter of -£15,601 annually (over the construction period). Carbon sequestration shows a permanent gain (+£2,052 annually) but a temporary reduction (-£9,877 annually during construction). Flood storage capacity is expected to increase permanently (+2,292m<sup>3</sup>) but experience a temporary reduction over the construction period (-15,163m<sup>3</sup>). Recreation and physical wellbeing show temporary net gains (from Public Rights of Way diversions during construction) but permanent net losses annually of £2,120 and £396, respectively.
16. These impacts are limited to the on-site habitat changes. Off-site habitat creation and enhancement, required to deliver at least 10% BNG, will be agreed post-DCO, at the detailed design stage. These off-site BNG opportunities, which will deliver at least 10% BNG, will significantly improve overall ecosystem service provision.
17. The Environmental Benefits from Nature (EBN) tool [9] was used to estimate relative quantitative changes in provision of 18 ecosystem services, from baseline to post-intervention. This analysis was based on habitat spatial data derived from the SBM and the Biodiversity Gain Plan (Document reference 7.11, DCO Volume 7) [10], along with spatial ecosystem service indicators required through the tool.
18. As with Step 2, on-site habitat changes caused by the Project are expected to have mixed impacts on provision of ecosystem services (over a 30-year period). These include:
  - An increase in erosion protection (+8.4%); aesthetic value (+7.0%); pest control (+5.9%); sense of place (+4.8%); water quality regulation (+4.3%); pollination (+3.2%); recreation (+2.9%); interaction with nature (+2.6%); flood regulation (+1.7%); and carbon storage (+1.0%).
  - No change in fish production; noise reduction; education.
  - A decrease in food production (-8.9%); water supply (-7.4%); cooling and shading (-1.6%); air quality regulation (-1.0%); and wood production (-0.1%).
19. A qualitative assessment examined the likely ecosystem services impacts of 38 potential landscape-scale enhancements identified in the Indicative Environmental Masterplan [11] (appendix to the Design Approach Document (Document reference 5.12, DCO Volume 5) [12]). Using spatial datasets and expert judgement, impacts on 18 ecosystem services were evaluated, ranging from major beneficial to major adverse, drawing on EBN-aligned indicators and publicly available data sources including Natural England's Green Infrastructure Framework [13].
20. The qualitative assessment identified the potential for numerous additional benefits from the potential landscape-scale enhancements, with integrating wetland habitat within sustainable drainage measures predicted to have the greatest

multifunctional benefits in terms of carbon, water quality and flood regulation and recreation (amongst other benefits).

21. The Applicant's ambitions for the Project in relation to ENG are to positively promote opportunities for Project wide environmental enhancement and to incorporate multifunctionality to deliver ENG.
22. The benefits and legacy the Project will deliver of relevance to the economy, communities and the environment as set out in the Case for the Project (Document reference 5.6, DCO Volume 5) [14]. The committed benefits packages of most relevance to ENG include:
  - Overarching environmental, social and economic benefits – reduced pressure on sensitive chalk stream environments.
  - BNG benefits – a minimum of 10% BNG for the whole of the development will be delivered as a result of the project, with the precise on and off-site interventions to be finalised post Development Consent Order through the Biodiversity Gain Plan (Document reference 7.11, DCO Volume 7).
  - Broadmarsh Coastal Park Improvement Fund – a package of interventions including enhanced planting and landscaping, improvements to Public Rights of Way, providing biodiversity and social co-benefits.
  - Portsdown Hill Improvement Fund – a package of interventions including upgrades to local footpaths, providing ecological and social co-benefits.
  - Community Fund – support for water-related projects, including nature enhancement, to supporting community resilience and increasing local autonomy in responding to climate and weather events.
  - Environmental Enhancements – 13 EMEAs offering additional environmental enhancements. Of which, four EMEAs provide protection of landscapes in the South Downs National Park (SDNP) and improve their setting, through avoiding harm, and protecting and enhancing chalk streams.

# 1 Introduction

1.1.1 This Environmental Net Gain (ENG) Statement has been prepared by Southern Water Services Limited (the Applicant) to accompany the Development Consent Order (DCO) application for the proposed Hampshire Water Transfer and Water Recycling Project ('the Project').

## 1.2 The Project

1.2.1 The Applicant's overarching Vision for the Project, as set out in ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) [15], states:

*"We're transforming the way we source, treat and supply water across Hampshire. Creating a new, resilient and sustainable water supply will protect and enhance the county's rare and sensitive chalk streams, while maintaining supplies for our communities and the local economy".*

1.2.2 To achieve this, the Project comprises the construction, operation and maintenance of the following components:

- Water Recycling Plant (WRP) and associated pumping stations.
- Pipelines between Budds Farm Wastewater Treatment Works (WTW) and the Water Recycling Plant site.
- Pipelines between the Water Recycling Plant site and Bedhampton Springs, connecting to pipelines being delivered by Portsmouth Water between Bedhampton Springs and Havant Thicket Reservoir.
- Pipeline between the Water Recycling Plant site and Otterbourne Water Supply Works (WSW).
- Above Ground Plant (AGP) comprising Intermediate Pumping Stations and Break Pressure Tanks located along the Pipeline between the Water Recycling Plant site and Otterbourne Water Supply Works.

1.2.3 The Project would also comprise the use of the following infrastructure:

- Havant Thicket Reservoir (which has been consented separately by Portsmouth Water and is currently under construction) for the storage of recycled water.
- The existing Eastney Long Sea Outfall, Eastney Pumping Station, and associated Eastney Transfer Tunnel for the release of reject water from the WRP site.
- Pipelines and other related works (which have been consented separately by Portsmouth Water) for the transfer of recycled water and source water between Bedhampton Springs and Havant Thicket Reservoir.

1.2.4 The construction and operation of the Project would be supported by other temporary and permanent works.

1.2.5 The Project will require the demolition, disassembly and/or temporary relocation of a number of small structures.

- 1.2.6 A detailed description of the Project can be found in ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) [15]. The Application Glossary (Document reference 1.7, DCO Volume 1) sets out the abbreviations and definitions used in the DCO application for the Project.
- 1.2.7 The built infrastructure components of the Project will have embedded environmental and social benefits due to the associated reduction in water abstractions. By recycling treated wastewater it can be used as a source for drinking water supplies, therefore less water will be required to be abstracted from the environment. This reduction in low water flows in Hampshire's rare and sensitive chalk stream rivers will benefit aquatic, riparian and terrestrial biodiversity; enhance fish passage; improve water quality; maintain connection with floodplains; improve aesthetics and the quality of recreation opportunities; as well as facilitate continued irrigation, fisheries management, energy provision and navigation. As stated in ES Chapter 8 Terrestrial and freshwater biodiversity, Volume I (Document reference 6.1, DCO Volume 6) [15], the reduction in abstractions from the River Itchen SSSI and SAC will help maintain natural watercourse flow and contribute to the conservation objective of maintaining or restoring the structure and function of habitats and species long-term.

### 1.3 Purpose of this document

- 1.3.1 Environmental Net Gain is defined in the National Policy Statement (NPS) for Water Resources Infrastructure (2025) [1] as:
- “an approach to development that aims to leave the natural environment in a measurably better state than beforehand. Biodiversity net gain is an essential component of environmental net gain. Projects should consider and seek to incorporate improvements in natural capital, ecosystem services and the benefits they deliver when planning how to deliver biodiversity net gain.” (para 3.4.1)*
- 1.3.2 The NPS requires applications for development consent of water resources projects to be accompanied by:
- “a statement demonstrating how opportunities for delivering wider environmental net gains have been considered, and where appropriate, incorporated into the design (including any relevant operational aspects) of the project. Applicants should make use of available guidance and tools for measuring natural capital assets and ecosystem services, such as the Natural Capitals Committee’s ‘How to Do it: natural capital workbook’ [16] and Defra’s guidance on Enabling a Natural Capital Approach [4]. Where environmental net gain considerations have featured as part of the strategic options appraisal process in the water resources management plan to select a project, the statement should reference that information to supplement the site-specific details.” (para 3.4.3)*
- 1.3.3 The purpose of this ENG Statement is therefore to:
- Demonstrate how opportunities for delivering ENG were considered through the different stages of scheme development and where this has influenced or been incorporated into the evolving design (Chapter 2);

- Provide detail on the methods and results of the ENG assessment covering expected natural capital impacts and opportunities associated with the Project (Chapter 3); and
- Set out what ENG-related measures the Applicant is committing to (Chapter 4).

## 2 How Environmental Net Gain was considered and incorporated into scheme development

- 2.1.1 The Project has progressed through a detailed development process, aligned with the Regulators Alliance for Progressing Infrastructure Development (RAPID) gated process. This process has considered a number of water resources infrastructure options as well as different configurations of these options. The options went through a number of stages of detailed review, considering a range of technical, environmental, planning, social and economic criteria. These stages (described in detail in the Scheme Development Report (Document reference 5.10, DCO Volume 5) [2]) are as follows:
- **Stage 1:** Development and assessment of initial options (Gate 1 of the RAPID gated process).
  - **Stage 2:** Options appraisal process (Gate 2 of the RAPID gated process).
  - **Stage 3:** Scheme development between RAPID Gate 2 and the summer 2022 consultation.
  - **Stage 4:** Scheme development between the summer 2022 consultation and the summer 2024 consultation.
  - **Stage 5:** Scheme development between the summer 2024 consultation and spring 2025 consultation.
  - **Stage 6:** Scheme development between the spring 2025 consultation and DCO application.
- 2.1.2 How ENG was considered at each of these stages, and where appropriate, incorporated into project design, is described in the following sub-sections.

### 2.2 Stage 1: Development and assessment of initial options

- 2.2.1 The Applicant's Water Resources Management Plan (WRMP) [17], published in 2019, identified a 192 Megalitres per day (Ml/d) supply-demand deficit across their Western Area during a 1-in-200-year drought scenario. WRMP19 considered a range of strategic water resources infrastructure solutions to provide new sources of supply, of which a 75Ml/d desalination plant at Fawley was the largest element. In addition, water re-use schemes were also reported in WRMP19 as alternative strategic options to desalination as part of an adaptive planning approach to water resources management.
- 2.2.2 As part of the RAPID regulatory process established in 2019 to oversee and accelerate the development and delivery of new strategic water resource schemes, the Applicant was required to investigate alternative options further whilst progressing its WRMP19 preferred desalination option.
- 2.2.3 Through the RAPID Gate 1 process, the Applicant investigated eight potential alternatives to the desalination plant at Fawley, including water recycling and alternative use of Portsmouth Water's Havant Thicket Reservoir. High level environmental assessments using the principles of Strategic Environmental Assessment, Habitats Regulations Assessments and Water Framework Directive

assessment, were completed for the accelerated Gate 1 submission in September 2020. The Gate 1 work included a gap analysis and look ahead to activities required prior to the Gate 2 submission (September 2021) to further understand the environmental risks of progressing with the desalination plant at Fawley or alternatives. A high level natural capital assessment and an initial look at potential biodiversity net gain (BNG) opportunities were also completed for Gate 1.

- 2.2.4 As a result of the assessment of initial options, three of the nine options were removed: one due to Drinking Water Inspectorate compliance issues (option B.3), one due to commercial viability/issues (D.1), and one due to likely impacts to the River Itchen SAC and SSSI (B.1). The remaining six options progressed to Stage 2.

## 2.3 Stage 2: Options appraisal process

- 2.3.1 The Stage 2 options appraisal process considered the six options progressing from Gate 1 to identify a preferred option and a backup option in order to inform the Gate 2 submission to RAPID.
- 2.3.2 Following the site and route selection which identified a configuration for each solution, various evaluations and assessments were undertaken to consider the suitability of all of the options against a range of environmental, social, economic and other factors. Factors of relevance to ENG included identifying that appropriate routing and mitigation would be required to avoid potentially unacceptable effects to statutorily protected sites for nature conservation, important and irreplaceable habitats (e.g. ancient woodland), and specific types of land (e.g. outdoor recreation space).
- 2.3.3 The appraisal process comprised a consenting evaluation, a multi-criteria decision analysis which reviewed the options against best value criteria, and a review against legal, policy and Water for Life Hampshire strategic objectives. A BNG and natural capital assessment was also undertaken at this stage, using the Statutory Biodiversity Metric (SBM) for the biodiversity assessments, and high level qualitative, quantitative or monetary assessments of the following ecosystem services: climate regulation (carbon storage), water purification, water regulation, natural hazard regulation, food production, recreation and tourism, and air quality.
- 2.3.4 At the Gate 2 submission, Option B.4 was confirmed as the selected option, and became the Project which is being progressed through the consenting process, and Option B.5 was selected as the backup option.

## 2.4 Stage 3: Scheme development between RAPID Gate 2 and the summer 2022 consultation

- 2.4.1 At Stage 3, the initial pipeline routes selected at Stage 2 were expanded into pipeline corridors to allow for micro-siting and refinement of the pipeline route at later stages, taking account of local constraints. Some new routes were also identified in the proximity of the initial pipeline routes to ensure that all reasonable options were considered. Where new routes were identified, these were checked against the criteria that were used to identify pipeline routes at Stage 2.

2.4.2 Pipeline corridors were then evaluated against a range of criteria including socio-economics, land, water quality and resources, flood risk, biodiversity and nature, historic environment and engineering.

2.4.3 Some pipeline corridor sections were not progressed as they intersected with the South Downs National Park, a national landscape designation that is afforded the highest level of protection. The selection of a preferred pipeline corridor sought to reduce intersections with and proximity to sensitive environmental designations including ancient woodland, priority habitats, designated ecological sites and flood risk zones, as far as reasonably practicable.

## 2.5 Stage 4: Scheme development between the summer 2022 consultation and the summer 2024 consultation

2.5.1 As set out in the Design Approach Document (Document reference 5.12, DCO Volume 5) [12], an overarching Vision for the Project was established by the Applicant at Stage 4 of the Project's development. This articulated a clear ambition to deliver a resilient and sustainable water supply that protects Hampshire's chalk streams while supporting communities and the local economy.

2.5.2 To ensure the Vision is delivered, broad design aspirations (underpinned by a clear understanding of the local context and opportunities for creating social value) were defined, providing a benchmark against which design outcomes could be tested:

- Landscape-led – responding to and enhancing local landscape character and heritage.
- Integrated – with the green and blue infrastructure network to support nature recovery on land and water.
- Beneficial – delivering tangible advantages for both nature and local communities.

2.5.3 An Indicative Environmental Masterplan as set out in the Design Approach Document (Document reference 5.12, DCO Volume 5) [12], was developed at the pre application stage to identify locations for potential enhancement measures that could deliver the greatest positive impacts for the environment, stakeholders and communities. This process included the identification of 'focus areas' predominantly around the AGP sites for the Project, except for in one area that explored opportunities around the River Itchen. In developing these focus areas, the Applicant sought to identify and consider local opportunities for delivering environmental enhancement and mitigation. The Indicative Environmental Masterplan is not a secured document and not all of the potential initiatives identified are included within the Project. It demonstrates, however, how potential opportunities for mitigation and enhancement were identified during scheme development.

2.5.4 Preliminary Design Principles (PDPs) were also established at Stage 4, providing an early framework for embedding good design. Structured around the National Infrastructure Commission's (NIC) themes of climate, people, places, and value, these principles addressed issues such as reducing land take, reducing carbon emissions, enhancing biodiversity, and integrating buildings into their landscape

context (see Design Approach Document (Document reference 5.12, DCO Volume 5) [12]) for more detail).

2.5.5 Key PDPs developed at Stage 4 of relevance to ENG are detailed in Table 2-1.

**Table 2-1: Preliminary Design Principles of relevance to ENG**

Reference	Topic	Preliminary Design Principle	NIC theme(s)
PDP_9	Respecting local distinctiveness	Recognise and respect local landscape, heritage and recreational character and values and adopt a landscape-scale approach to design to maximise integration and wider environmental and social benefits beyond the boundary.	People Places Value
PDP_13	Green infrastructure enhancement	Seek to enhance green infrastructure and nature networks, with landscape planting as shown on the environment/landscape masterplans and in accordance with a reinstatement strategy.	People Places Value
PDP_14	Enhance biodiversity	Contribute to and enhance the natural environment by providing net gains for biodiversity. Landscape design will be compliant with the BNG strategy and seek to deliver the best outcomes for biodiversity.	Climate People Places Value
PDP_16	Environmental enhancement	Positively promote opportunities for project wide environmental enhancement and maximise multifunctionality to deliver Environmental Net Gain.	Climate People Places Value
PDP_20	Connectivity and active travel	Seek to connect to and extend walking, equestrian and cycling networks to increase access to the countryside. Include good quality walking, wheeling and cycle routes etc to enhance active transport provision.	People Value
PDP_23	Genuine consideration of feedback	Consider feedback carefully and respond meaningfully taking communities on the journey from inception to operation – to maximise benefits for local communities as far as possible.	People Value

2.5.6 These PDPs set a foundation for the design principles that have been developed and included as part of the application (within the Design Principles Document (Document reference 5.11, DCO Volume 5)). The final design principles (discussed in section 2.7) will act as the secured controlling mechanism for the detailed design of buildings, structures, pipelines and landscaping etc, and must be complied with under the DCO.

## 2.6 Stage 5: Scheme development between the summer 2024 consultation and spring 2025 consultation

- 2.6.1 Scheme development undertaken at Stage 5 was informed by various inputs, including feedback from the summer 2024 consultation, feedback from ongoing engagement with landowners and stakeholders (such as local planning authorities and statutory environmental bodies) and information from ongoing environmental assessments and surveys. Alternative designs were then identified by the Project's engineers to avoid or reduce identified constraints (e.g. required environmental mitigation, flood risk). The alternative designs and the summer 2024 consultation (Stage 4) designs were then evaluated against specific evaluation criteria (including on biodiversity, landscape/visual, water quality). The outcome from this process was the identification of a number of design refinements which were consulted on at the spring 2025 consultation.
- 2.6.2 Part of this design refinement involved the identification of Environmental Mitigation and Enhancement Areas<sup>1</sup> (EMEAs). At this stage, findings from the Environmental Impact Assessment were considered in order to locate mitigation proposals where impacts were identified. The mitigation and enhancement proposals were also developed having regard feedback from the summer 2024 consultation and ongoing engagement with key stakeholders. The enhancement proposals considered opportunities identified by stakeholders such as the Hampshire County Council (HCC) Biodiversity Information Centre.
- 2.6.3 During this stage, consideration was given to identifying proposals that would be multifunctional in order to maximise benefits provided. For instance, where land was identified to be required for mitigation purposes, it was considered whether enhancement proposals could take place at the same location to complement the mitigation, provide additional benefit and incorporate good design.
- 2.6.4 Measures considered at this stage included mitigating impacts to and/or enhancing habitats such as woodland, scrub, wet grassland, veteran trees and chalk grassland to improve habitat connectivity; avoiding effects on protected species and root protection areas through the inclusion of appropriate buffer areas; and additional landscaping including a green roof on main process building.

## 2.7 Stage 6: Scheme development between the spring 2025 consultation and DCO application

- 2.7.1 An assessment of ENG impacts and opportunities was undertaken during Stage 6, specifically making use of available guidance and tools for measuring natural capital assets and ecosystem services – the methods and results of this assessment are presented separately, in Chapter 3.
- 2.7.2 An Indicative Environmental Masterplan [11] (appendix to the Design Approach Document (Document reference 5.12, DCO Volume 5) [12]) was also developed at this stage to identify locations for potential enhancement measures that could

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<sup>1</sup> The location of EMEAs is set out in section 5 of the Design Principles Document (Document reference 5.11) [18]. The plans identify the EMEAs that would provide environmental mitigation and those that would provide additional environmental enhancement.

deliver the greatest positive impacts for the environment, stakeholders and communities. This process included the identification of ‘focus areas’ predominantly around the AGP sites for the Project, except for in one area that explored opportunities around the River Itchen. In developing these focus areas, the Applicant sought to identify and consider local opportunities for delivering environmental enhancement and mitigation. The Indicative Environmental Masterplan is not a secured document and not all of the potential initiatives identified are included within the Project. It demonstrates, however, how potential opportunities for mitigation and enhancement were identified during scheme development.

- 2.7.3 The Stage 6 approach to design refinements was consistent with that undertaken at Stage 5 (i.e. in using feedback from consultation and ongoing engagement, and information from ongoing environmental assessments to identify alternative designs, evaluated alongside the spring 2025 consultation design). The EMEAs were also refined further at Stage 6, including for example: habitat creation to mitigate vegetation loss; enhancement and/or reinstatement of grassland / trees / woodland; landscape enhancement and/or reinstatement; and provision of protected species mitigation.
- 2.7.4 The PDPs discussed in Stage 4 evolved into General and Site Specific Design Principles during Stages 5 and 6, as set out in the Design Principles Document (Document reference 5.12, DCO Volume 5) [18]. These must be adhered to in the development of the detailed design, undertaken by the Contractor. The design principles incorporate 29 EMEAs of which 13 cover additional environmental enhancements and 17 cover environmental mitigation. The design principles include but are not limited to the: creation of habitats, reinstatement and enhancement of habitats, and avoidance of impacts to habitats.
- 2.7.5 A sample of design principles of particular relevance to ENG are shown in Table 2-2.

**Table 2-2: Design principles of relevance to ENG**

Reference	Topic	Design Principle
GDP_9	Landscape-scale approach	Detailed design will adopt a landscape-scale approach to design to maximise integration.
GDP_11	Retention of existing landscape features, wildlife corridors and vegetation	Existing landscape features, wildlife corridors and vegetation within the Order Limits will be retained and protected to the extent it is reasonably practicable to do so having regard to the nature of the works proposed and other measures secured through the DCO, to maintain visual continuity and ecological connectivity.
GDP_12	Respecting local distinctiveness and biodiversity	Detailed design will seek to recognise and respect the positive attributes of local landscape, biodiversity, heritage and recreational character and values whilst having regard to the purpose of the infrastructure and the operational, safety and security standards it needs to meet.

Reference	Topic	Design Principle
WRP_2	Hermitage Stream	<p>Opportunities to improve bank protection, estuarine (including gravel bars and mudflats that are exposed during low tide) and riparian habitats in the tidal Hermitage Stream will be explored during the detailed design of the WRP Sustainable Drainage System (SuDS) outfall and delivered where practicable.</p> <p>The design of the hard infrastructure comprised in the SuDS outfall will seek to reduce disturbance of the existing scour protection on the banks of Hermitage Stream and not protrude into Hermitage Stream more than existing outfalls.</p> <p>The design will retain existing transitional habitats (including gravel bars and mudflats that are exposed during low tide) at the foot of the banks and avoid operational disturbance to these habitats.</p> <p>To deter the passage of eels inside the SuDS outfall pipe, a step will be placed within the SuDS outfall pipe. The step will be a minimum of 0.3m in height and have an overhang/lip.</p>
WRP_17	Environmental mitigation: Green/brown roof	<p>The main process building (within Zone 1) will have a green/brown roof to provide open mosaic habitat mitigation within the facility boundary, enhance biodiversity, and to reduce impacts on key views from the south. The specification for the habitat to be provided on the green/brown roof will be in accordance with the Outline Landscape and Ecology Management Plan or the relevant approved Landscape and Ecology Management Plan as the case may be.</p> <p>The extent of the green/brown roof will be determined at the detailed design stage, covering as large an area as reasonably practicable.</p>
BPT/IPS-E_89	Green roofs/walls	<p>Consideration will be given to green roofs and walls on the north and west facades where practicable to soften the roofline and visual impact in key views from New Down Lane and the residential area to the north, and to enhance biodiversity.</p>

Reference	Topic	Design Principle
BPT/IPS-E_13	Environmental mitigation: Chalk grassland habitat	Outside of the operational area for BPT/IPS-E, chalk grassland habitat will be provided throughout to support the Portsdown SSSI to the south.
IPS-F_3	PRoW diversion and enhancements	<p>The public right of way (PRoW) will be subject to a permanent diversion, as detailed in the Framework RoWMP and other provisions of the DCO. The diverted PRoW will have accessible, multi-functional gates and surfaces.</p> <p>Native hedgerow will be established between the PRoW and AGP where practicable having regard to the highway authority's maintenance requirements. Where the PRoW passes adjacent and through proposed woodland and hedgerow planting, meadow strips will be established on both sides of the diverted path, to improve amenity for local residents of Welborne and habitat connectivity.</p>
IPS-F_8	Environmental mitigation: Woodland and scrub	Woodland and scrub planting will be extended into the northwest and northeast areas of the AGP field. The planting will use species similar to those found locally (such as the Old Chalk Pit woodland south of the AGP), and integrate the AGP into the landscape, enhance biodiversity and protect views from the diverted PRoW.
BPT-K_9	Environmental mitigation: Parkland	<p>In the field west and north of BPT-K, the existing grassland will be enhanced and neutral grassland with a sward dominated by perennial ryegrass and crested dog's tail (UKHab type g3c6) with scattered trees will be planted.</p> <p>The planting will reflect the species mix, density, layout and appearance of the historic landscape surrounding Wintershill Hall, including the wood-pasture and parkland habitat, as well as provide screening of views to the north and enhance biodiversity. Standing and fallen deadwood will be left on site to provide habitat for invertebrates and fungi; a feature associated with the existing wood-pasture and parkland to the south.</p>

## 3 Methods and results of the ENG assessment

- 3.1.1 The ENG assessment focused on direct impacts (positive and negative) to the quantity and quality of natural capital assets that are expected to occur as a result of the Project. This relates to the areas of habitats that will be lost through construction of the built infrastructure components of the Project, as well as those to be gained through habitat creation and enhancement (including for mitigation purposes) around the AGP sites and within EMEAs, the latter incorporating the on-site<sup>2</sup> BNG opportunities.
- 3.1.2 The ENG assessment focused on the wider benefits of habitat-related impacts, mitigation and enhancement opportunities identified within the Biodiversity Gain Plan (Document reference 7.11, DCO Volume 7) [10], Indicative Environmental Masterplan [11] (appendix to the Design Approach Document (Document reference 5.12, DCO Volume 7) [12]) and Environmental Statement Volume 1 (DCO Volume 6) [15]. It did not seek to generate any additional opportunities, and it did not assess the embedded benefits of the Project's built infrastructure components (described in section 1.2). These embedded benefits arise through avoiding some of the current and projected impacts on the water environment (low flows) that are likely to worsen over time due to climate change and increasing population, and thereby reducing wider pressures on natural capital, rather than through direct changes in natural capital assets per se.
- 3.1.3 This assessment approach was agreed with Natural England and the Environment Agency following the Technical Working Group meeting on 13 February 2025.

### 3.2 Methodology

- 3.2.1 The approach to the ENG assessment for the Project followed four steps.

#### **Step 1: Review Project against ENG policy ambitions**

- 3.2.2 The aim of the ENG policy review was to highlight the extent to which the Project is supporting national and local policy ambitions relating to ENG. Firstly, using national and local policy documents, the review identified ENG policy ambitions of relevance to proposed developments. National sources of ENG ambitions included the Environmental Improvement Plan (2025) [19] and the NPS for Water Resources Infrastructure (2025) [1]. Local sources of ENG ambitions included HCC Draft Local Nature Recovery Strategy (LNRS) (2025) [20], and the adopted and emerging local plans of relevant Hampshire councils (i.e. those directly affected by the Project).
- 3.2.3 Secondly, using Project specific documents available at the time of the assessment (including the Environmental Statement Volume 1 (DCO Volume 6) [15], Indicative Environmental Masterplan [11] (appendix to the Design Approach Document (Document reference 5.12, DCO Volume 5) [12]), and Design Principles Document (Document reference 5.11, DCO Volume 5) [18]), it identified mitigation

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<sup>2</sup> Off-site BNG opportunities will be required to deliver the commitment for the project of at least 10% BNG, however these are currently being developed and will be agreed post-DCO, at the detailed design stage. As such, off-site BNG opportunities do not feature in the SBM and therefore are not included in the ENG assessment.

and enhancement measures defined as environmental mitigation or additional environmental enhancements which are committed to as part of the DCO. relevant to each of the policy ambitions. Based on the information provided about these measures, along with expert judgement, the extent to which the ENG policy ambitions are likely to be supported through the Project was identified (as high, medium or low).

## Step 2: Undertake monetary assessment of Project

- 3.2.4 The aim of the monetary natural capital assessment was to identify the likely monetary change in ecosystem service benefits provided by habitats to be lost through the built infrastructure components of the Project, and gained through the proposed EMEAs, and the proposed on-site BNG opportunities. The methodology for quantifying and monetising the changes in ecosystem services followed the approach set out in the Environment Agency's WRPB Supplementary Guidance - Environment and society in decision-making [3], and Defra's ENCA [4]. The assessment included the five key services of biodiversity, climate regulation, water purification, water regulation and natural hazard regulation (as set out in the WRPB Supplementary Guidance), plus food production, recreation and physical health. All monetary values were adjusted to 2024 prices using GDP deflators [21].
- 3.2.5 A quantitative approach was taken for the biodiversity assessment, using spatial extents of habitat derived from the Statutory Biodiversity Metric (SBM), as set out in the Biodiversity Gain Plan (Document reference 7.11, DCO Volume 7) [10]. The detailed UKHab Classifications used in the SBM were converted into broad habitat types. The converted area of each broad habitat, along with the length of hedgerows and watercourses both before (baseline) and after the Project (including permanent loss from the built infrastructure components of the Project, and gains from mitigation and enhancement measures) used in the BNG assessment (i.e. the SBM figures), were reported. The areas under broad habitat types were subsequently used as the input values for the following monetary assessments.
- 3.2.6 A monetary approach was taken for climate regulation, based on carbon sequestration.<sup>3</sup> The carbon sequestration rates for natural capital stocks were taken from the WRPB Supplementary Guidance [3]. The carbon sequestration rates were used to estimate the total carbon sequestration rate for the different broad habitat types identified through the biodiversity assessment. The total carbon sequestration rates were converted into monetary values using the Department for Business Energy Industrial Strategy's Interim Non-Traded Carbon Values [5].
- 3.2.7 A monetary approach was taken for water purification, using the ENCA Services Databook [6] national average for improving water quality in all water bodies (e.g. from moderate to good) plus BNG watercourse data (i.e. the SBM figures). A quantitative approach was taken for natural hazard regulation, using 10-year average flood storage volume values from the ENCA Services Databook [6], plus broad habitat data, to determine flood regulation values. A monetary approach was taken for water regulation, using the ENCA Services Databook [6], which considers

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<sup>3</sup> Carbon sequestration was not included in the carbon assessment reported in Chapter 10 (Carbon and Climate Change) of the Environmental Statement Volume 1 (DCO Volume 6) [15], which focused on carbon emissions.

water regulation within the regulating services and with a final effect on reducing flood damage. The assessment for this ecosystem service employs the annualised replacement cost for flood water storage for the areas of the different broad habitats.<sup>4</sup>

- 3.2.8 A monetary approach was taken for food production, using an adaptation of the whole-farm income method outlined by the Office for National Statistics Natural Capital Accounts [7], and the ENCA Services Databook [6]. Using the identified farmland broad habitats affected by the Project, average annual farmland rents for the various farm types were used to estimate provisioning values for arable and pasture food production services.<sup>5</sup>
- 3.2.9 A monetary approach was taken for recreation, using the Outdoor Recreation Valuation (ORVal) tool [8], to estimate recreation demand from existing or new greenspace and linear routes as a proxy for recreation value. The ORVal tool was used to estimate both the absolute visitor numbers as well as monetary values (welfare impacts). A monetary approach was taken for physical health, using the ENCA Services Databook [6], to calculate the value of 'active' visits (defined as 18.8% of recreational visits by White et al. (2016) [22]), whereby recreation is classed as active or non-active according to a Metabolic Equivalence of Task score.<sup>6</sup>

### Step 3: Undertake quantitative assessment of Project

- 3.2.10 The aim of the quantitative natural capital assessment was to identify the likely relative change in ecosystem service benefits provided by habitats to be lost through the built infrastructure components of the Project, and gained through the proposed EMEAs, and the proposed on-site BNG opportunities.
- 3.2.11 Natural England's Environmental Benefits from Nature (EBN) tool [9] was used to identify the likely relative change (from the baseline to the post-intervention situation) in ecosystem service benefits provided by habitats affected by the Project. It is based on scores (on a scale of 0-10) for the ability of different types of land cover to deliver 18 ecosystem services, influenced by multipliers relating to habitat condition, spatial location, area of habitats, delivery risk and the time taken for new habitats to reach their target condition. Details on the ecosystem services and their multipliers can be found in the EBN Data Catalogue [23].
- 3.2.12 This assessment used the spatial extents of habitat derived from the SBM, as set out in the Biodiversity Gain Plan (Document reference 7.11, DCO Volume 7) [10]. The spatial data underpinning the SBM was also used (in QGIS) in order to identify

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<sup>4</sup> The approach for assessing water-related ecosystem services is different from what is reported in ES Chapter 19 Water Environment Volume 1 (Document reference 6.1, DCO Volume 6) , as here the focus is on impacts caused by changes in habitats (which can slow the flow of water, intercept pollutants, and facilitate percolation into the ground).

<sup>5</sup> Whilst data on pasture land for use in the food production assessment was provided by the authors of ES Chapter 12 Land Use and Agriculture Volume 1 (Document reference 6.1, DCO Volume 6) [15], the focus of the two assessments is different, with the latter focusing on qualitative aspects of land use change.

<sup>6</sup> Chapter 17 (Socio-economics, Tourism and Health) of the Environmental Statement [15] reported on construction impacts on access to green space, recreation and physical activity. Whilst broader than the recreation and health assessments discussed here (e.g. ES Chapter 17 Socio-economics, tourism and health Volume 1 (Document reference 6.1, DCO Volume 6) included consideration of visual effects for users of PRoW) it was a qualitative rather than monetary assessment.

the location of each habitat polygon in relation to spatial data for each ecosystem service.

**Step 4: Undertake qualitative assessment of enhancement opportunities**

3.2.13 The aim of the qualitative natural capital assessment was to identify the potential wider environmental benefits of the 38 proposed ‘landscape-scale approach’ enhancement opportunities identified (at the time of the assessment) through the Green Infrastructure Focus Areas set out in the Indicative Environmental Masterplan [11] (appendix to the Design Approach Document (Document reference 5.12, DCO Volume 5) [12]). These Focus Areas are as follows:

- Focus Area 1: Broadmarsh Coastal Park
- Focus Area 2: Portsdown Hill
- Focus Area 3: River Meon and Forest of Bere
- Focus Area 4: River Hamble
- Focus Area 5: River Itchen

3.2.14 Using spatial datasets and expert judgement, the qualitative assessment identified the potential impacts (ranging from major beneficial to major adverse) of the proposed ‘landscape-scale approach’ enhancement opportunities on the provision of 18 ecosystem services (the same as those included in the EBN tool [9]). The data sources were linked to the indicators included in the EBN tool for each ecosystem service, and included Project-specific spatial datasets, those available through NE’s Green Infrastructure Framework [13], and other publicly available spatial data.

**3.3 Results**

**Step 1: Review Project against ENG policy ambitions**

3.3.1 Table 3-1<sup>7</sup> provides a review of all proposed enhancement measures detailed within documents outlined in Section 3.2 against ENG policy ambitions. This review demonstrates that the Project is expected to meet all the ENG policy ambitions and therefore numerous environmental gains can be expected to occur as a result of the Project.

**Table 3-1: ENG policy review**

Policy ambition	Extent of support (high, medium, low)
<b>Biodiversity ambitions</b>	

<sup>7</sup> The policy documents underpinning the identified policy ambitions are referenced at the end of each cell in the “policy ambition” column. The Project documents containing committed and proposed measures relevant to each of these ambitions are referenced at the end of each cell in the “extent of support” column.

Policy ambition	Extent of support (high, medium, low)
<p>Conserve, restore and enhance international, national and locally designated sites of importance for biodiversity, irreplaceable habitats and functionally linked land affected by/relevant to the scheme. [24], [25], [26], [27], [28], [29], [30], [31], [32]</p>	<p>High - Committed measures (e.g. creation of chalk grassland adjacent to Portsdown SSSI and the Motte &amp; Bailey &amp; Chalk Pit SINC) will contribute to enhancement of three nationally designated sites. [18] [11] [33] [10].</p>
<p>Enhance and restore existing habitats and, where possible, create new wildlife-rich habitats (priority and locally important habitats outside of protected areas). [19], [1], [24], [27], [28], [30], [31], [32]</p>	<p>Medium – Impacted habitats will be restored and enhanced where practicable, maintaining existing levels of biodiversity and ecosystem services provision. Although woodland cover is planned to increase overall, many of the committed measures to create new habitat through the EMEAs are mitigation to replace lost habitat. [18] [11] [15] [33] [10] [34]. The Project is committing to delivering at least 10% BNG which will be delivered through a range of mechanisms including on-site enhancement and utilising the purchase of BNG units through third party providers within the local area to the Project.</p>
<p>Reduce habitat fragmentation through increasing habitat connectivity. [24], [25], [26], [35], [28], [29], [36], [30], [31], [32], [37]</p>	<p>High – In addition to minimising habitat fragmentation, the Project will improve connectivity across a range of habitats (hedgerows, woodland, scrub, grassland), enhancing biodiversity, pollination and water regulation [18] [11] [15] [33] [34].</p>

Policy ambition	Extent of support (high, medium, low)
<p>Optimise BNG (aim to achieve at least 10%). Any off-site habitat creation should follow LNRS guidance. [38], [39], [24], [25], [26], [27], [28], 12, [29], [31], [32]</p>	<p>High – As set out in the Biodiversity Gain Plan, the Applicant has committed to deliver at least 10% BNG [10]. BNG will be delivered through a range of mechanisms including on-site enhancement and utilising the purchase of BNG units through third party providers within the local area to the Project [10]. Various creation and enhancement measures have been committed to on-site (e.g. creation of grassland, scrub and woodland within and around AGPs) [18] [11] [33] [10].</p> <p>To meet 10% BNG, the following habitats will be created off-site: other neutral grassland (92 BNG units); hedgerows (29 BNG units); lowland mixed deciduous woodland (three BNG units); watercourses (three BNG units); open mosaic habitat on previously developed land (74 BNG units) [10].</p>
<p>Contribute towards LNRS delivery. Provide BNG through habitats functionally linking to the wider habitat network creating coherent ecological networks (e.g. around existing designation at Portsdown Hill, Portsmouth Harbour, Langstone Harbour, Broadmarsh Coastal Park). [24], [25], [26], [29], [32]</p>	<p>High – BNG is proposed in line with habitat creation/enhancement measures within the draft Hampshire LNRS (e.g. the Order Limits North of Wardle Road were extended to include an EMEA to provide for an enhancement opportunity identified by the HCC Biodiversity Information Centre, thus maintaining woodland biodiversity and ecosystem services provision) [18] [11] [15] [10].</p>
<b>Water resources ambitions</b>	
<p>Incorporate Natural Flood Management and natural SuDS to provide multi-functional benefits for flood storage, water quality, landscape, soils and biodiversity. [1], [24], [20], [25], [27], [35], [28], [36], [30], [32], [37]</p>	<p>Medium– Committed measures identify on-site SuDS will provide flood storage benefits and accommodate 1 in 100 year rainfall events, whilst the perimeter grass swales and filter strips, loose gravel cover, detention basin, green roof and wet woodland will additionally provide biodiversity and water quality benefits, enhancing the natural landscape [18] [11] [33] [10] [40]. Opportunities to improve riparian habitats in the tidal Hermitage Stream will be explored during the detailed design of the WRP SuDS outfall and delivered where practicable [18].</p>

Policy ambition	Extent of support (high, medium, low)
<p>Ensure protection and enhancement of watercourse corridors.                      [24], [28], [29], [30], [32]</p>	<p>Medium – The Vision of the Project is to avoid low flows in Hampshire’s chalk streams, benefiting biodiversity and water quality (in particular for the River Itchen SAC and SSSI, where maintaining natural flows will contribute to the conservation objective of maintaining or restoring the structure and function of habitats and species long-term) [15]. Watercourses will be protected, and committed measures (e.g. through EMEAs) include enhancements to the Hermitage and Otterbourne streams, along with river bank restoration, riparian grassland creation, species and PRow enhancements associated with the River Hamble (likely improving biodiversity, flood risk, water quality, erosion and aesthetics) [11] [18] [10].</p> <p>Whilst there will be a 7% net loss in on-site watercourse habitats, additional enhancement will be delivered off-site, including three BNG watercourse units [10].</p>
Green infrastructure ambitions	
<p>Ensure the functionality and connectivity of the green infrastructure network (including PRow) is maintained, and improve the network and other areas of multi-functional open green space.                      [1], [24], [20], [26], [27], [35], [28], [29], [36], [30], [32]</p>	<p>Medium – The connectivity (and thus functionality) of PRow, hedgerows and other habitats will largely be maintained, with enhancements where practicable (particularly woodland and riparian strips, green roofs/walls, and new hedgerows and meadow strips alongside diverted PRow), benefitting biodiversity and a wide range of ecosystem services including erosion control and pollination [18] [11] [33] [41] [12].</p> <p>Specific environmental enhancement measures include: landscape reinstatement and enhancements to improve connectivity between South Downs National Park (SDNP) and New Forest National Park (NFPF); as well as consideration of PRow enhancements, river bank restoration, and riparian grassland creation and enhancement. [15] [11] [18]</p>

Policy ambition	Extent of support (high, medium, low)
<p>Provide, protect or enhance recreational facilities and amenities to improve the visual and environmental experience through high quality design and/or screening (such as by natural features). [1], [25], [35], [28], [29], [36]</p>	<p>Medium – Minor contribution from proposed new bench and information boards along New Down Lane, and enhanced diverted PRoW, with new hedgerows and meadow strips alongside PRoWs enhancing amenity value [18] [11]. Modified grasslands provide visual as well as nature connection benefits [34].</p>
<p>Maximise the contribution of green infrastructure to nature recovery. [24], [20], [36], [32], [37]</p>	<p>High – Though provision of new green infrastructure (beyond habitat required for ecology/BNG purposes) is limited, nature recovery is a key part of its design (e.g. ‘biodiverse’ green roof, green walls, and meadow strips and hedgerows along the new, diverted PRoW for habitat connectivity). [18] [11] [33] [34] [10] [12]. In addition to biodiversity, such measures will also enhance aesthetics, flood control and water quality [18] [11].</p>
<b>Landscape ambitions</b>	
<p>Conserve and where possible enhance the special characteristics, value, features and visual amenity of the local landscape, e.g. through woodland planting or natural regeneration. [26], [32], [37]</p>	<p>High – Committed measures go beyond screening views or replacing lost habitat (i.e. mitigation) to specifically enhance the local landscape, e.g. through filling gaps in hedgerows and woodland blocks, and extension of parkland and chalk grassland habitats [18] [11] [33] [34].</p>
<p>Avoid, minimise and mitigate adverse visual and landscape effects through appropriate siting of infrastructure, design (including choice of materials), reinstatement/replacement planting and landscaping schemes. Utilise landscaping off-site where necessary, and use appropriate species informed by the local landscape whilst sourcing responsibly and considering the impacts of climate change. [1], [25], [28], [37]</p>	<p>High - Committed measures will mitigate (reduce or avoid) visual impacts caused by the Project, whilst providing biodiversity benefits through strengthened connectivity [18] [11] [15] [33].</p>
<p>Adopt a landscape scale approach to design, to maximise integration and wider environmental and social benefits beyond the project itself (including recognition of the experiential and cultural interplay with the landscape). [39], [28], [29], [30], [32], [37]</p>	<p>Medium – Committed measures include the adoption of a landscape-scale approach to design and improvements to connectivity between SDNP and NFNP and in collaboration with the Welborne Garden Village development, enhancing various cultural ecosystem services [18] [11] [12].</p>
<b>Natural capital ambitions</b>	

Policy ambition	Extent of support (high, medium, low)
Incorporate improvements in natural capital, ecosystem services and the benefits they deliver (relevant to the local area and to national policy priorities) within the design of the scheme / when planning how to deliver BNG. [1], [39], [24], [20], [25], [26], [27], [28], [42], [29], [31], [32], [37]	Medium – Mitigating habitat loss through design of high quality new, enhanced and/or better connected habitats for biodiversity or landscape benefits will result in a range of natural capital and ecosystem service benefits (in some cases resulting in a net gain) [18] [11] [33] [12] – see following sub-sections of this report (Steps 2-4).
Focus mitigation where the most ecological and ecosystem services benefits can be realised. [1], [24], [26], [35], [42], [29], [31], [37]	Medium – Mitigation and enhancement measures are typically concentrated close to the areas of impact, or where greater connectivity and functionality would be achieved, with some committed and proposed measures referring to multiple/multifunctional benefits (e.g. enhancing/filling gaps between hedgerows to increase biodiversity, green infrastructure connectivity and landscape pattern) [2] [18] [11].
Optimise the use of nature-based solutions to increase resilience for schemes (working with local stakeholders) - with particular reference to climate change and flood risk. [39], [24], [20], [28], [30]	Medium – Though the Environmental Statement Volume 1 (DCO Volume 6) [15] concluded no significant effects of the Project on climate change, or climate change on the Project, some relevant nature-based solutions have been committed to, improving its resilience (e.g. green roofs and SuDS) [18] [11].

## Step 2: Undertake monetary assessment of Project

3.3.2 A summary of the natural capital benefits/disbenefits of the Project, i.e. the likely quantitative or monetary changes in ecosystem service provision as a result of changes to the extent of habitats and PRoW, are presented in Table 3-2.

**Table 3-2: Monetary assessment results**

Ecosystem services	Permanent loss/gain from changes to habitats/PRoW	Temporary loss/gain from changes to habitats/PRoW
Biodiversity	<ul style="list-style-type: none"> <li>• 5% net <b>loss</b> in habitat units (cropland, scrub and trees).</li> <li>• 12% net <b>loss</b> in hedgerow units (especially native hedgerows with trees).</li> <li>• 7% net <b>loss</b> in watercourse units (ditches and other rivers/streams).</li> </ul>	N/A

Ecosystem services	Permanent loss/gain from changes to habitats/PRoW	Temporary loss/gain from changes to habitats/PRoW
Climate regulation	4% <b>gain</b> in annual carbon sequestration rate (+6.85tCO <sub>2</sub> e/yr) and thus carbon value (+£2,051.66 annually).	<b>Loss</b> in annual carbon sequestration rate (-32.97tCO <sub>2</sub> e/yr) and thus carbon value (-£9,877.41 annually).
Water purification	<b>No change</b> to the water quality status of watercourses.	<b>No change</b> to the water quality status of watercourses.
Natural hazard regulation	4% <b>gain</b> in total flood storage capacity (+2,292.40m <sup>3</sup> ).	<b>Loss</b> in total flood storage capacity (-15,162.65m <sup>3</sup> ).
Water regulation	3% <b>loss</b> in replacement cost value (-£1,709.27 annually) of habitats providing water (flood) regulation.	<b>Loss</b> in replacement cost value (-£15,601.38 annually) of habitats providing water (flood) regulation.
Food production	5% <b>loss</b> in value of food production (-£1,565.67 annually).	<b>Loss</b> in value of food production (-£8,787.45 annually).
Recreation	£2,120.01 net <b>loss</b> annually in recreation welfare value (-550 visits annually).	£56,103.02 total net <b>gain</b> in recreational welfare value (+12,376 visits).
Physical health	£7.61 net <b>loss</b> in physical health value per week (-2 active visits weekly).	£146.67 net <b>gain</b> in physical health value per week (+38 active visits weekly).

### Step 3: Undertake quantitative assessment of Project

3.3.3 Direct changes to on-site habitat extent caused by the Project are expected to result in the following changes in ecosystem services (over a 30-year period):

- An **increase** in provision of the following ecosystem services: erosion protection (+8.4%); water quality regulation (+4.3%); pollination (+3.2%); pest control (+5.9%); recreation (+2.9%); aesthetic value (+7.0%); interaction with nature (+2.6%); sense of place (+4.8%).
- A **minor increase** in provision of the following ecosystem services: flood regulation (+1.7%); carbon storage (+1.0%).
- **No change** in provision of the following ecosystem services: fish production; noise reduction; education.
- A **minor decrease** in provision of the following ecosystem services: wood production (-0.1%); air quality regulation (-1.0%); cooling and shading (-1.6%).
- A **decrease** in provision of the following ecosystem services: food production (-8.9%); water supply (-7.4%).

3.3.4 These results are presented in Graphic 3-1 (Note that the EBN tool suggests only losses or gains greater than 25% are 'large', suggesting the Project will not significantly impact on provision of ecosystem services).

	Changes per ha after:						Confidence
	1 year	10 year	30 year	1 year	10 year	30 year	
Food production	↘	↘	↘	-0.9	-0.9	-0.9	2
Wood production	→	→	→	-0.1	-0.1	0.0	2
Fish production	→	→	→	0.0	0.0	0.0	2
Water supply	↘	↘	↘	-0.7	-0.7	-0.7	1
Flood regulation	→	→	→	-0.1	0.1	0.2	1
Erosion protection	↗	↗	↗	0.6	0.8	0.8	1
Water quality regulation	→	↗	↗	0.2	0.4	0.4	1
Carbon storage	→	→	→	0.0	0.0	0.1	2
Air quality regulation	↘	→	→	-0.4	-0.2	-0.1	2
Cooling and shading	↘	→	→	-0.4	-0.2	-0.2	1
Noise reduction	→	→	→	0.0	0.0	0.0	2
Pollination	↘	→	↗	-0.6	0.1	0.3	1
Pest control	→	↗	↗	-0.1	0.5	0.6	1
Recreation	↗	↗	↗	0.3	0.3	0.3	1
Aesthetic value	→	↗	↗	-0.2	0.5	0.7	1
Education	→	→	→	0.0	0.0	0.0	1
Interaction with nature	→	→	↗	-0.1	0.2	0.3	1
Sense of place	→	↗	↗	-0.1	0.3	0.5	1

Change in average score per hectare	
Large decrease (more than -2.5 points out of 10)	↘
Decrease (-0.25 to -2.5 points out of 10)	↘
Minor change (-0.25 to 0.25 points out of 10)	→
Increase (0.25 to 2.5 points out of 10)	↗
Large increase (more than 2.5 points out of 10)	↗

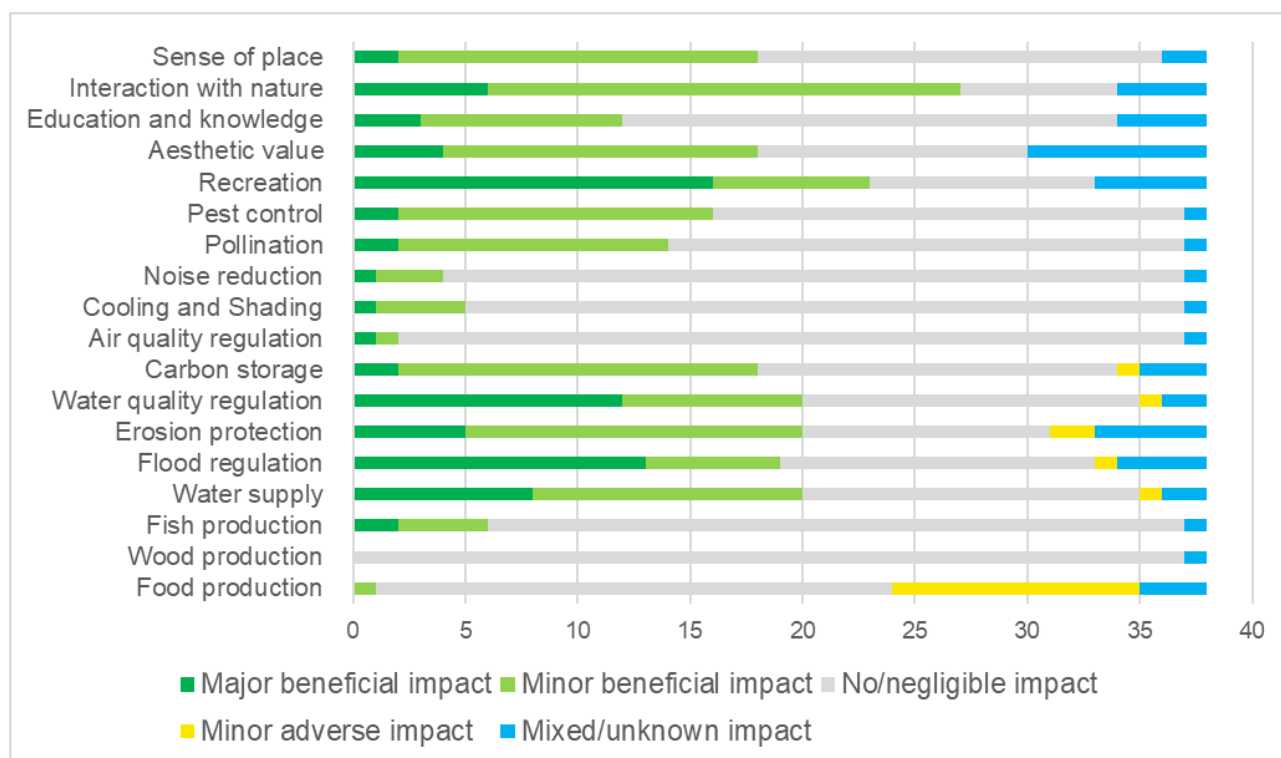
  

Confidence ratings for each service	
1	The relationship between the provision of the ecosystem service and habitats is complex. Evidence for scoring/multipliers is partial, although may be stronger for some habitats than others. Evidence gaps have been filled by consulting experts and with a degree of subjectivity, particularly for cultural services.
2	We have some suitable evidence to calibrate our range of scores across habitats and multipliers and/ or scoring applied to a limited
3	We have a strong evidence base upon which to base scores across the range of habitats and multipliers used for this ecosystem service.

Graphic 3-1 Results of quantitative assessment of the Project

Step 4: Undertake qualitative assessment of enhancement opportunities

3.3.5 Overall, the 38 potential 'landscape-scale approach' enhancement opportunities set out in the Indicative Environmental Masterplan [11] (appendix to the Design Approach Document (Document reference 5.12, DCO Volume 5) [12]) at the time of the assessment were largely predicted to have either beneficial impacts (ranging from minor to major) on provision of a range of regulating and cultural ecosystem services, or negligible impacts. The greatest benefits were identified in terms of recreation, interaction with nature, erosion protection, water quality regulation, and water supply. This is shown in Graphic 3-2.



**Graphic 3-2 Qualitative assessment results of the Project**

3.3.6 The Indicative Environmental Masterplan [11] (appendix to the Design Approach Document (Document reference 5.12, DCO Volume 5) [12]) is not a secured document and not all of the potential initiatives identified are included within the Project. It demonstrates, however, how potential opportunities for mitigation and enhancement were identified during scheme development.

### 3.4 Conclusions

3.4.1 At the time of undertaking the ENG Assessment, based on the expected on-site changes in habitat area due to the Project (including mitigation and proposed enhancement measures) (steps 2-3), the likely impact on ecosystem services provision, including those that are particularly important at the national and local level, is mixed. For example, on-site there is currently predicted to be a decline in biodiversity and water regulation/supply values, an increase in carbon, flood and water quality regulation values, and mixed results for recreation welfare values. There are no significant changes expected for any of the ecosystem services.

3.4.2 However, these impacts are limited to the on-site habitat changes. Off-site BNG opportunities will be required to deliver the commitment for the project of at least 10% BNG, however these are currently being developed and will be agreed post-DCO, at the detailed design stage. The off-site habitats (and BNG units) required to meet 10% BNG are: other neutral grassland (92 BNG units); hedgerows (29 BNG units); lowland mixed deciduous woodland (three BNG units); watercourses (three BNG units); open mosaic habitat on previously developed land (74 BNG units) [10]. The enhancement and creation of ecologically valuable habitats off-site (to achieve the commitment of at least 10% BNG) will substantially increase provision of ecosystem services associated with the Project.

- 3.4.3 Furthermore, step 1 of the assessment revealed that numerous environmental gains will be made through the Project's committed measures (particularly in terms of biodiversity, green infrastructure, landscape and natural capital), supporting both local and national policy ambitions, and delivering a range of ecosystem services. This is largely due to the design refinements that occurred over the different stages of scheme development, particularly in terms of the EMEAs that have been committed to via the final design principles. Step 1 also showed that the potential enhancement measures, if secured, would enhance the Project's overall environmental gains (e.g. recreational measures in Broadmarsh Coastal Park and Focus Areas 3 and 4). Similarly, step 4 revealed the substantial potential additional benefits for the Project of the potential 'landscape-scale approach' enhancement opportunities.
- 3.4.4 The ENG assessment has been used (alongside other Project documents) to inform the identification of benefits the Project will deliver relating to the economy, communities and the environment. Not all of the initiatives assessed through the ENG assessment are included within the Project – particularly the potential 'landscape-scale approach' enhancement opportunities set out in the Indicative Environmental Masterplan [11] (appendix to the Design Approach Document (Document reference 5.12, DCO Volume 5) [12]), assessed in step 4. Nevertheless, these were considered by the Applicant alongside other benefits at the pre-application stage, and some have been incorporated within the 'proposed benefits packages' described in the Case for the Project (Document reference 5.6, DCO Volume 5) [14], which have been committed to by the Applicant. These commitments (those of relevance to ENG) are set out in Chapter 4.

## 4 ENG commitments

- 4.1.1 The Applicant's ambitions for the Project in relation to ENG are to positively promote opportunities for Project wide environmental enhancement and to incorporate multifunctionality to deliver ENG.
- 4.1.2 A Case for the Project (Document reference 5.6, DCO Volume 5) [14] has been produced to communicate the need for the Project, along with the benefits and legacy the Project will deliver relating to the economy, communities and the environment.
- 4.1.3 The proposed benefits packages are as follows:
1. Overarching environmental, social and economic benefits
  2. BNG benefits
  3. Outline Skills and Employment Plan benefits
  4. Skills and Employment Fund
  5. Broadmarsh Coastal Park Improvement Fund
  6. Portsdown Hill Improvement Fund
  7. Community Fund
  8. Volunteering commitments
  9. Water Recycling Plant Visitor Facility
  10. Environmental Enhancements
- 4.1.4 The ENG-related benefits committed to by the Applicant are set out below in Table 4-1. Some of the potential 'landscape-scale approach' enhancement opportunities assessed through Step 4 of the ENG assessment have fed into these benefit packages, particularly in terms of enhancements to Portsdown Hill and Broadmarsh Coastal Park and benefits to SDNP.

**Table 4-1: Benefits committed to of relevance to ENG**

Benefit Package	Benefit Description
1. Overarching environmental, social and economics benefits	<p>Environmental Need and benefits: The Project will reduce pressure on sensitive chalk stream environments by enabling a more resilient and sustainable alternative water source, helping to maintain ecological flow, support biodiversity and reduce the risk of long-term harm.</p> <p>The Project also contributes to meeting the UK Government's Water Framework Directive objectives, which aim for all water bodies to achieve "good ecological status." By supporting reduced abstractions, the Project supports compliance with abstraction licence conditions and enhances the resilience of local river systems.</p>
2. BNG benefits	At least 10% BNG will be delivered as a result of the Project. BNG will be achieved in a number of ways. This includes:

Benefit Package	Benefit Description
	<ul style="list-style-type: none"> <li>On-site habitat creation and enhancement measures will be delivered within the AGP and at EMEAs adjacent to the Project that are within the Project BNG baseline area.</li> <li>Delivery of nearby off-site BNG measures aligning where practicable with LNRS.</li> <li>Where it is not possible to deliver on-site or local off-site schemes to fully meet the 10% BNG requirement, purchase of BNG credits from a habitat bank.</li> <li>A blend of all the above approaches.</li> </ul> <p>The commitment to BNG will be secured through the Biodiversity Gain Plan [10] (Document reference 7.11, DCO Volume 7) via a DCO requirement. The relevant requirement will provide that no part of the Project shall commence until a detailed biodiversity gain plan for that part has been submitted to and approved in writing by the relevant planning authority.</p>
<p>5. Broadmarsh Coastal Park Improvement Fund</p>	<p>A package of interventions has been developed that will provide both biodiversity and social co-benefits for Broadmarsh Coastal Park to the south of the WRP site. A financial contribution of £500,000 is proposed to be provided by the Applicant to deliver these positive interventions. This is a project specific benefit that will be secured via a separate legal agreement, which would specify the measures that the contribution can be spent on and by when, and would ensure that such measures are aligned to the relevant LNRS.</p> <p>The precise details of the allocation of funding will be determined between the Applicant and Havant Borough Council but it is likely to include elements such as:</p> <ul style="list-style-type: none"> <li>Surface and pathway improvements, including PRow along waterways where appropriate,</li> <li>Improved lighting,</li> <li>New benches, and</li> <li>Enhanced planting and landscaping.</li> </ul>
<p>6. Portsdown Hill Improvement Fund</p>	<p>Portsdown Hill has been identified as a key area where interventions can be achieved that provide both ecological and social co-benefits related to the area directly impacted by the Project and also to the wider community. In addition to measures to improve chalk grassland habitat to support the Portsdown SSSI to the south, a financial contribution of £50,000 is proposed to be provided by the Applicant to deliver interventions including signage and wayfinding improvements on Wayfarers Walk, and upgrades to local footpaths.</p> <p>The financial contribution provided by the Applicant would be secured via a separate legal agreement which would specify measures that the fund can be spent on along with associated timeframes, ensuring that such outcomes are aligned to the</p>

Benefit Package	Benefit Description
	<p>relevant LNRS. These improvements can offer benefits because increasing standards and access to walking and cycling infrastructure can have physical and mental health benefits, as well as encourage use of nature and outside spaces that protect green environments.</p> <p>There is also the potential as part of the BNG strategy that will be determined at the detailed design stage, to contribute to interventions such as improvements to chalk grassland, creating a dew pond related to the chalk escarpment and the integration of wetland habitat with sustainable drainage.</p> <p>The precise details of the measures supported by the Portsdown Hill Improvement Fund would be agreed with Portsmouth City Council who it is expected would administer the funds.</p>
7. Community Fund	<p>A Community Fund to support water related projects across the affected host local authority areas is proposed. The Community Fund would be secured, funded and delivered by the Applicant via a separate planning agreement. The exact criteria for funding allocation and management process will be determined following DCO consent and approval of the Project, alongside the identification and appointment of the operator of the fund.</p> <p>Community Funds offer multiple benefits to communities both directly and indirectly impacted by the Project, this may include supporting community resilience and increasing local autonomy in responding to climate and weather events. The fund would comprise up to £400,000 worth of local project funding opportunities.</p> <p>The Community Fund is likely be targeted at projects and initiatives across the following themes:</p> <ul style="list-style-type: none"> <li>• Nature enhancement,</li> <li>• Water conservation projects (e.g. water butts to recycle rainwater),</li> <li>• Pollution reduction,</li> <li>• Increasing local knowledge regarding water conservation and scarcity.</li> </ul>
10. Environmental Enhancements	<p>Specific EMEAs have been selected along the Pipeline route, as outlined within the Design Principles Document [18] (Document reference 5.11, DCO Volume 5).</p> <p>These have been selected to deliver a range of interventions, covering both mitigations and enhancements. For the purpose of the benefits package, the EMEAs listed here are those that are for 'additional environmental enhancement', where the Applicant has identified interventions which go beyond mitigation.</p>

Benefit Package	Benefit Description
	<p>The following EMEAs offer additional environmental enhancements: EMEA-WRP, EMEA-E-2b, EMEA-E-3; EMEA-K-1b; EMEA-K-2; EMEA-K-3; EMEA-K-4; EMEA-K-5; EMEA-L-4; EMEA-L-6b; EMEA-L-7; EMEA-M-1; EMEA-M-2.</p> <p>Additionally, the following EMEAs would positively affect and enhance the SDNP setting (EMEA-K-1b; EMEA-K-2; EMEA-K-3; EMEA-M-1). This has been specifically highlighted as they contribute to the duty to further its purposes as required by the National Parks and Access to Countryside Act 1949 as amended by s245 of the Levelling up and Regeneration Act 2023.</p> <p>Examples of the additional environmental enhancements set out in the Design Principles Document [18] (Document reference 5.11, DCO Volume 5) include the following:</p> <ul style="list-style-type: none"> <li>- Chalk grassland habitat will be created to support the Portsdown SSSI to the South. This is in addition to the provision of chalk grassland within BPT / IPS E outside its operational area.</li> <li>- Landscape reinstatement and enhancements will be delivered associated with the River Hamble and to improve connectivity between SDNP and NFNP. River bank restoration, riparian grassland creation and enhancement and PRow enhancements will be considered. Where this EMEA borders the park lug, planting will consider impacts to and enhancements of the historic earthworks and planting associated with the Bishop’s Waltham deer park.</li> <li>- Wet woodland will be created to increase the area of the existing woodland parcel.</li> <li>- Enhancements to the Otterbourne Stream will be carried out, delivering improved habitat for southern damselfly. The existing Coastal and Floodplain Grazing Marsh will also be enhanced from its current poor condition.</li> </ul>

## Glossary

Term	Definition
Above Ground Plant (AGP)	This collectively refers to the Intermediate Pumping Stations and Break Pressure Tanks.
Additional benefits	Benefits committed to by the Applicant but not directly related to or necessary to deliver the Project.
Ancient woodland	Woodland that has existed continuously since 1600 in England, Wales and Northern Ireland and is defined as an irreplaceable habitat.
Applicant	Southern Water Services Limited.
Biodiversity	The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.
Biodiversity Net Gain (BNG)	This is an approach to development that delivers measurable improvements that delivers a net gain for biodiversity by creating or enhancing habitats.
Break Pressure Tank (BPT)	BPT are anticipated to be required at high points along the pipeline route. Water is pumped to BPTs, where it then flows onwards using gravity from the tank. This reduces the amount of energy required to transfer water. BPTs reduce the overall maximum pressure in the pipeline system associated with changes in flow rate as a result of topography.
Budds Farm pumping station	A pumping station located at Budds Farm Wastewater Treatment Works to support the transfer of treated wastewater to the Water Recycling Plant site.
Budds Farm Wastewater Treatment Works (WTW)	An existing Southern Water site that treats wastewater from the Applicant's customers prior to release into the Solent from the Eastney Long Sea Outfall. The Project would utilise highly treated wastewater from the Budds Farm WTW to produce recycled water at the Water Recycling Plant site. Reject water would be transferred from the Water Recycling Plant back to Budds Farm WTW where a connection would be made for onwards transfer to the existing Eastney Transfer Tunnel, Eastney Pumping Station and Eastney Long Sea Outfall for release into the Solent. Chemical filter washing at the Water Recycling Plant site would generate process waste that would be discharged via the foul sewer network to Budds Farm WTW for treatment.
Climate	The general weather conditions prevailing over a long period of time. Climate change will see trends in the climate conditions changing (seasonal averages and extremes).
Construction compounds	Temporary areas required to facilitate the construction of the Project.
Contractor	The Applicant or a person appointed by the Applicant or by anyone else having the benefit of part or all of the

Term	Definition
	Development Consent Order to carry out any construction element of the Project or to operate the Project.
Design principles	Design principles which reflect the design approach adopted for the Project and as set out in the Design Principles Document (Document reference 5.11, DCO Volume 5) and will control the detailed design post-consent in accordance with Schedule 2 of the draft Development Consent Order (Document reference 3.1, DCO Volume 3) [18].
Development Consent Order (DCO)	A statutory order which provides consent for a project and means that a range of other consents, such as planning permission and listed building consent, will not be required. A DCO can also include powers authorising the compulsory acquisition and temporary possession of land and rights over land which is the subject of an application. A draft DCO (Document reference 3.1, DCO Volume 3) is submitted by the applicant as part of its application [43].
Drinking Water	Water that has been treated to strict regulatory standards, ready for supply to domestic and non-domestic customers as drinking water.
Drought conditions	Droughts are naturally occurring events and are typically characterised by a prolonged period of abnormally low rainfall, leading to a shortage of water.
Eastney Long Sea Outfall (LSO)	An existing Southern Water infrastructure component used to release treated wastewater from Budds Farm Wastewater Treatment Works. No works to the Eastney LSO are proposed as part of the Project; however, reject water produced from the Water Recycling Plant will be released from the Eastney LSO using the Eastney Transfer Tunnel and Eastney Pumping Station.
Eastney Pumping Station (PS)	An existing Southern Water infrastructure component. No works are proposed to it as part of the Project. The Eastney PS receives treated wastewater flows, via gravity, from Budds Farm Wastewater Treatment Works and pumps it out via the Eastney Long Sea Outfall. This pumping station also receives storm flows from the Eastney catchment area. Reject water from the proposed Water Recycling Plant will be released from the Eastney Long Sea Outfall using the Eastney PS and Eastney Transfer Tunnel.
Eastney Transfer Tunnel (TT)	An existing Southern Water infrastructure component. The Eastney TT connects the Budds Farm Wastewater Treatment Works final effluent channel via a shaft located at Budds Farm Wastewater Treatment Works to the Eastney Pumping Station to release treated wastewater. Reject water from the Water Recycling Plant will be released from the Eastney Long Sea Outfall using the Eastney Pumping Station and Eastney TT. A new connection point to the Eastney TT, located at Budds Farm Wastewater Treatment Works, is required. No additional works to the Eastney TT are proposed as part of the Project.

Term	Definition
Enhancement	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 Project or other interventions to leave a positive legacy for the community.
Environmental Mitigation and Enhancement Areas (EMEA)	The 'Environment Mitigation and Enhancement Areas' are shown on the Works plans (Document reference 2.3, DCO Volume 2) and in the Design Principles Document (Document reference 5.11, DCO Volume 5). The EMEAs will deliver environmental mitigation to mitigate adverse impacts and provide additional environmental enhancement within the Order Limits. The environmental enhancements that are not associated with environmental mitigation will only be implemented subject to securing agreements with landowners. EMEAs are in addition to the commitment to reinstate vegetation removed to facilitate construction throughout the Order Limits.
Environmental Net Gain (ENG)	ENG is an approach to development that aims to leave the natural environment in a measurably better state than beforehand. Biodiversity net gain is an essential component of ENG. ENG involves going further to achieve increases in the capacity of affected natural capital to deliver ecosystem services and make a scheme's wider impacts on natural capital positive.
Framework Rights of Way Management Plan (RoWMP)  (Appendix B to the Framework Construction Traffic Management Plan (Document reference 7.2, DCO Volume 7))	Provides a general overview of management measures that will be used to mitigate the impact of the Project on the Public Rights of Way network.  It sets out the framework for the detailed RoWMP(s) which will be developed by the Contractor and approved post-consent. The measures contained in the Framework RoWMP are secured by a requirement in Schedule 2 to the Development Consent Order. Detailed RoWMP(s) will be produced and submitted for approval in accordance with the corresponding requirement in Schedule 2 to the draft Development Consent Order (Document reference 3.1, DCO Volume 3).  The Framework RoWMP forms an appendix to the Framework Construction Traffic Management Plan (Document reference 7.2, DCO Volume 7), submitted with the Development Consent Order application.
Green Infrastructure	The National Planning Policy Framework [44] defines green infrastructure as <i>"a network of multi-functional green and blue spaces and other natural features, urban and rural, which is capable of delivering a wide range of environmental, economic, health and wellbeing benefits for nature, climate, local and wider communities and prosperity."</i>  For the purpose of the Project, Green Infrastructure focus areas have been identified on the Indicative Environmental Masterplan (appended to the Design Approach Document

Term	Definition
	(Document Reference 5.12, DCO volume 5)) which shows areas where there are opportunities to enhance the wider network.
Habitats Regulations Assessment (HRA)	A process that determines whether or not a project or a plan could risk having a likely significant effect on a designated National Site Network site and to consider ways to avoid or reduce (mitigate) any potential for an adverse effect on the integrity of the site in accordance with The Conservation of Habitats and Species Regulations 2017 [45].
Hampshire Water Transfer and Water Recycling Project	This is the name of the Project, that is the Strategic Resource Option being delivered as part of the Water For Life Hampshire programme. A water supply scheme comprising a combination of both water transfer and water recycling technology that would play a major role in making up the shortfall in water supply across the Hampshire supply area, especially in a drought.
Havant Thicket Reservoir	The Havant Thicket Reservoir is a development under construction by Portsmouth Water that has planning permission granted by the relevant local planning authorities. Following the transfer of recycled water from the Water Recycling Plant site, the recycled water would be combined with water contained within the Havant Thicket Reservoir. The Project would use the Havant Thicket Reservoir for the storage of recycled water, before transfer to Otterbourne Water Supply Works.
Indicative Environmental Masterplan  (Appended to the Design Approach Document (Document reference 5.12, DCO Volume 5))	A plan setting out the Green Infrastructure focus areas, placing the multi-functional environmental mitigation and enhancement measures within the framework of the landscape design comprises a series of indicative drawings, and a series of indicative plans for each of the Above Ground Plant sites, showing potential layouts and how the sites might appear once built.
Intrinsic benefits	Benefits inherent to the Project itself.
Invasive Non-Native Species (INNS)	The Great British Non-Native Species Secretariat defines INNS as <i>“any non-native animal or plant that has the ability to spread causing damage to the environment, the economy, our health and the way we live”</i> [46].
Invasive Non-Native Species (INNS) Treatment at Otterbourne Water Supply Works	Infrastructure to be located at Otterbourne Water Supply Works to ensure the addition of source water transferred from Havant Thicket Reservoir would not introduce pathways for the spread of INNS.
Local Nature Recovery Strategy (LNRS)	A statutory strategy under the Environment Act 2021, that identifies priority location for habitat creation and enhancement to deliver the greatest benefits for nature and the wider environment.
Mitigation	Measures intended to avoid, prevent, reduce and, where possible, offset likely significant adverse environmental effects. Measures follow the mitigation hierarchy as described in section 5.3 of Environmental Statement Chapter 5 EIA

Term	Definition
	approach and methodology, Volume I (Document reference 6.1, DCO Volume 6).
National Policy Statement for Water Resources Infrastructure (NPSWRI)	The National Policy Statement for Water Resources Infrastructure published in July 2025.
Nationally Significant Infrastructure Projects (NSIPs)	NSIPs are large scale major development projects in England or Wales which require permission under the Planning Act 2008. Projects are only defined as nationally significant if they meet the relevant threshold set out in the Planning Act 2008 [43].
Order Limits	The 'Order Limits' represent the extent of the area within which the Project, authorised by the Development Consent Order, may be carried out, including the permanent and temporary land needed for construction, operation and maintenance activities. The Order Limits are shown on the Works plans (Document reference 2.3, DCO Volume 2) and Land plans (Document reference 2.2, DCO Volume 2).
Otterbourne Water Supply Works (WSW)	An existing Southern Water site which abstracts water from river Itchen and ground sources, and will continue to do in certain circumstances after the Project. The Project would transfer source water from Havant Thicket Reservoir to Otterbourne WSW. The source water would be treated to strict regulatory standards at Otterbourne WSW prior to being supplied to customers.
Pipeline between the Water Recycling Plant site and Otterbourne Water Supply Works	An underground pipeline approximately 35 kilometres long would transfer up to approximately 90 Megalitres per day of source water at maximum operation, from the Water Recycling Plant site to Otterbourne Water Supply Works. Above Ground Plant would support the transfer of water from the Water Recycling Plant site to Otterbourne Water Supply Works. Due to the length of the pipeline, it has been divided into sections: <ul style="list-style-type: none"> <li>• Section D: The Water Recycling Plant site to Portsdown Hill</li> <li>• Section E: Portsdown Hill to Boarhunt</li> <li>• Section F: Boarhunt to Crockerhill</li> <li>• Section G: Crockerhill to Wickham</li> <li>• Section H: Wickham to Shedfield</li> <li>• Section J: Shedfield to the River Hamble</li> <li>• Section K: The River Hamble to Lower Upham</li> <li>• Section L: Lower Upham to Brambridge</li> </ul> Section M: Brambridge to Otterbourne Water Supply Works
Pipelines between Budds Farm Wastewater Treatment Works and the Water Recycling Plant site	Two pipelines between Budds Farm Wastewater Treatment Works and the Water Recycling Plant site: one to transfer treated wastewater from Budds Farm Wastewater Treatment Works to the Water Recycling Plant site and the other to

Term	Definition
	<p>transfer reject water from the Water Recycling Plant site to Budds Farm Wastewater Treatment Works. The Pipelines would connect to the existing treated wastewater release infrastructure and the reject water would be released via the existing Eastney Long Sea Outfall using the existing Eastney Transfer Tunnel and Eastney Pumping Station. The development required to connect into the existing treated wastewater infrastructure would form part of this component of the Project.</p> <p>The Pipelines between Budds Farm Wastewater Treatment works and the Water Recycling Plant site would be installed on the same route under the Hermitage Stream and Harts Farm Way and would be approximately 700m in length.</p> <p>The Pipelines between Budds Farm Wastewater Treatment works and the Water Recycling Plant site would transfer a maximum flow of approximately 82 Megalitres per day (MI/d) of treated wastewater to the Water Recycling Plant site. The pipeline from the Water Recycling Plant site to Budds Farm Wastewater Treatment Works would be sized for the same transfer capacity of approximately 82MI/d as it may be necessary to return the maximum volume of water being treated back to Budds Farm Wastewater Treatment Works.</p>
Pipelines between the Water Recycling Plant site and Bedhampton Springs	<p>The Pipelines would transfer recycled water from the Water Recycling Plant site to Bedhampton Springs, and source water from Bedhampton Springs back to the Water Recycling Plant site (before transfer to Otterbourne Water Supply Works).</p> <p>The Pipelines, connecting to pipelines being delivered by Portsmouth Water between Bedhampton Springs and Havant Thicket Reservoir, would enable the transfer at maximum operation of approximately 60 Megalitres per day (MI/d) of recycled water from the Water Recycling Plant site to Havant Thicket Reservoir and approximately 90MI/d of source water from Havant Thicket Reservoir to the Water Recycling Plant site, for onward transfer to Otterbourne Water Supply Works.</p>
Preferred pipeline corridor	<p>The preferred pipeline corridor was selected as part of the scheme development process which considered a number of pipeline corridor and Above Ground Plant options. The preferred pipeline corridor was consulted on at the Summer 2022 Consultation. Additional information is provided within the Scheme Development Report (Document reference 5.10, DCO Volume 5).</p>
Project-specific benefits	Benefits secured through the DCO for the Project
The Project	This refers to the Hampshire Water Transfer and Water Recycling Project, as described in Environmental Statement Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6).
Recycled water	Purified water that has been produced by taking treated wastewater and removing remaining impurities using advanced treatment techniques.

Term	Definition
Regulators' Alliance for Progressing Infrastructure Development (RAPID)	The RAPID is made up of the three water regulators: Water Services Regulation Authority, the Environment Agency and the Drinking Water Inspectorate. It was established to work with the industry to promote the development of strategic water resources infrastructure.
Reject water	During the water recycling process, reject water is produced. Reject water is water containing impurities removed from the treated wastewater and released using the existing Eastney Transfer Tunnel and Eastney Long Sea Outfall.
Release from the Eastney Long Sea Outfall (LSO)	The existing Eastney LSO releases treated wastewater from Budds Farm Wastewater Treatment Works via the existing Eastney Transfer Tunnel and Eastney Pumping Station. The Project would utilise the Eastney LSO for the release of reject water produced by the Water Recycling Plant site. During maximum operation approximately 22 Megalitres per day (Ml/d) of reject water would be released from the Eastney LSO. During minimum flow operation approximately 4Ml/d of reject water would be released from the Eastney LSO.
Site of Importance for Nature Conservation (SINC)	An important wildlife site which contributes to the ecological network in Hampshire. To safeguard these sites, they are designated as non-statutory designated SINCs. SINCs are also known nationally as Local Wildlife Sites. They represent a legacy of good management and rely upon continued stewardship by landowners.
Site of Special Scientific Interest (SSSI)	A nationally site designated by Natural England as an area of special interest by reason of any of its flora, fauna, geological or physiographical features. SSSI are legally protected under the Wildlife and Countryside Act 1981 (as amended) [47]
Special Areas of Conservation (SAC)	Area(s) of protected habitat(s) and species as defined in the European Union Habitats Directive (92/43/EEC) [43].
Special Protection Area (SPA)	A designated area for birds under the European Union Directive on the Conservation of Wild Birds (2009/147/EC).
Summer 2022 Consultation	The non-statutory consultation undertaken in summer 2022 which consulted on the Project, including the process undertaken to select the Project and the process undertaken to identify the preferred pipeline corridor, Water Recycling Plant site, and emerging Above Ground Plant zones.
Summer 2024 Consultation	The statutory consultation held in 2024 which consulted on the Project, including the draft Order Limits, the proposed pipeline routes, proposed sites for the Above Ground Plant and Water Recycling Plant, temporary construction compounds and any temporary or permanent access routes.
Sustainable Drainage System (SuDS)	A Sustainable Drainage System that generally mimic the natural drainage patterns of an undeveloped site allowing infiltration into the ground (where feasible) and controlling outflow rates from a proposed development. This reduces the impact and risk of flooding and can provide additional benefits such as pollution control, increased biodiversity, and provision of water-based amenity space.

Term	Definition
Statutory Biodiversity Metric	Defra's tool to calculate biodiversity value for the purpose of securing BNG for development
Water for Life Hampshire	This is the programme being progressed by the Applicant to address the sustainability objectives of to meet demand following a reduction in abstractions on Hampshire's two main rivers - The Test and Itchen - and ensuring a resilient water supply for the Applicant's customers, especially during times of drought.
Water Recycling Plant (WRP)	The WRP would receive a total maximum volume of approximately 82 Megalitres per day (MI/d) of treated wastewater from Budds Farm Wastewater Treatment Works. This would provide a maximum output of approximately 60MI/d of recycled water. Approximately 22MI/d of reject water is produced from the water recycling process and would be combined with the existing Budds Farm Wastewater Treatment Works treated wastewater flows (that are generated by the existing operation of Budds Farm Wastewater Treatment Works), and released via the existing Eastney Transfer Tunnel, Eastney Pumping Station, and Eastney Long Sea Outfall operated by the Applicant.
Water Recycling Plant (WRP) site	The site containing the WRP, three pumping stations, a main process building, kiosks, administrative buildings and parking facilities. Located at a site north-west of Budds Farm Wastewater Treatment Works.
Water Resources Management Plan 2019 (WRMP19)	The Applicant's existing WRMP19 which sets out how the Applicant will manage and develop water resources to ensure a resilient supply of water for at least the next 25 years. The WRMP identifies the need for a strategic water resource options within the Western (Hampshire) supply area, from which the Project has been determined as the preferred solution to meet this need.
The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (WER)	The WER [49] transpose the European Water Framework Directive 2000/60/EC into law in England and Wales.
The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 (WFD Direction)	The WFD Direction [50] establish a series of thresholds that are used in the classification of water body status under the Water Environment (Water Framework Directive) England and Wales) Regulation 2017.

## Abbreviations

Abbreviation	Term
AGP	Above ground plant
BNG	Biodiversity net gain
DCO	Development consent order
Defra	Department for environment and rural affairs
EBN	Environmental benefits from nature tool
EMEA	Environmental mitigation and enhancement area
ENCA	Enabling a natural capital approach
ENG	Environmental net gain
LNRS	Local nature recovery strategy
NFNP	New Forest National Park
NIC	National Infrastructure Commission
NPS	National policy statement
ORVal	Outdoor recreation valuation tool
PDP	Preliminary design principles
PRoW	Public rights of way
RAPID	Regulators Alliance for Progressing Infrastructure Development
SBM	Statutory biodiversity metric
SDNP	South Downs National Park
SINC	Site of importance for nature conservation
SSSI	Site of special scientific interest
SuDS	Sustainable drainage system
WRMP	Water resources management plan
WRP	Water recycling plant
WRPG	Water resources planning guideline
WRZ	Water resource zone
WSW	Water supply works

**Hampshire Water Transfer and Water Recycling Project**  
**Environmental Net Gain Statement**

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WTW	Wastewater treatment works
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## References

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The Southern Water logo graphic consists of three white, stylized, wavy lines that resemble water waves, positioned to the right of the word "Water".