Future Water MJJV Ltd

Portsmouth Water

Havant Thicket Reservoir

Construction Environmental Management Plan

Havant Thicket Reservoir – Dual Pipeline Planning Application (Reservoir Site)

01/03/2024 | 1.0

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Contents

1. Introduction and background to the Scheme 5
Purpose of this document 5
Scheme overview 6
2. Key components of the Scheme and scope of construction activities 9
3. Environment Context 10
The reservoir site 10
Portsmouth Water's Project Drivers 11
Design Principles 12
4. Approach to Environmental Management 13
Scheme Environmental Policy 13
Planning Conditions/ Client Requirements 13
Environmental risk assessment 16
Considerate Constructor Scheme 16
5. Project team roles and responsibilities 17
Principal Contractor responsibilties 17
Site roles and responsbilities 17
Project management organisation 19
Environmental management responsibilities 19
6. Records of environmental actions and commitments 22
Environmental control plans 22
Water Quality Management Plan 22
Pollution Control Plan 23
Site Waste Management Plan 23
Materials Management Plan 23
Noise and Vibration Management Plan 23
Soil Management Plan 24
Fish Management Plan 24
Ecological Management Plan 24
Dust Management Plan 25
Construction Traffic Management Plan 25
7. Consents and permissions 25
8. Environmental monitoring requirements and procedures to monitor compliance 28
Environmental monitoring requirements 28
Objectives and targets, KPIs 29

Environmental records 31
Site inspection checklist 31
Procedures to monitor compliance 31
Environmental audit 31
Control of documents 32
9. Introduction, training and briefing procedures for staff 32
Environmental competencies 32
Training and site induction 33
Toolbox talks (TBTs) and induction supporting materials 33
10. Emergency procedures 33
11. Communications 34
Internal communication 34
External communication 34
Appendices 36
Appendix A EMS Certificate and Scheme Environmental Policy 37
Appendix B Site Location Plan 39
Appendix C Environmental Constraints Plan 41
Appendix D Records of Environmental Actions and Commitments (REAC) 42
Appendix E Environmental Aspects and Impacts Register 76
Appendix F Detailed Phasing Plan 84
Appendix G Environmental Toolbox Talks 87
Appendix H Environmental Training Matrix 90

1. Introduction and background to the Scheme

Purpose of this document

1. This Construction Environmental Management Plan (CEMP) has been prepared by Future Water MJJV to support the Pipeline planning application for Dual Pipeline Construction Between Bedhampton Springs and Havant Thicket Reservoir. This CTMP focuses on construction of the inlet pipeline that forms part of the pipeline application, separate to the Main Reservoir Works (MRW) Application that covers the remaining works at Havant Thicket Reservoir Site. The works covered in the hybrid permission application APP/20/00990 are detailed in a separate CEMP that covers the Reserved Matters Phases 1-9. The MRW CEMP is a live document that will be updated for each reserved matters application (Phases 2 – 9).
2. The purpose of this CEMP is to manage the environment effects of the scheme as identified within the Revised Environmental Statement (ES) which will support the dual pipeline planning application. It covers the inlet pipe within the reservoir site only. A separate CEMP will cover the remainder of the revise dual pipeline scheme.
3. This CEMP is prepared by Future Water (Joint Venture between Jones Brothers Ltd and Mackley Ltd) who have been appointed as Principal Contractor (PC) by Portsmouth Water to undertake the construction of the Havant Thicket reservoir. In addition to the reservoir construction, a dual pipeline between Bedhampton and the Havant Thicket Reservoir will be constructed. FW will construct the section op pipeline between the MRW site boundary and the discharge point within the reservoir. The remaining length of pipeline will be constructed by Ward and Burke.
4. Future Water is implementing the Scheme under Jones Brothers' Environmental Management System (EMS). A copy of the ISO 14001:2015 certificate is presented in Appendix A. The Jones Brothers environmental policy is available here - JB-Policy-002 - Environmental policy (jones-bros.com).
5. The Revised ES contains an Outline Environmental Management Plan[1] (OEMP), including a Record of Environmental Actions and Commitments (REAC) in Section 3, that identifies environmental actions and commitments made during the outline design to mitigate the potential environmental effects of the Scheme. The REAC includes the mitigation and compensation, management and monitoring measures that informed the environmental impact assessment reported in the ES. This CEMP will detail the measures which will be implemented during the construction of the reservoir site and access routes.
6. The overall objectives of the CEMP are as follows:
   - Identify the environmental risks associated with the construction works and determine how they will be managed during the construction of the Scheme;
   - To identify key environmental staff and their responsibilities, including training and communication requirements;
   - To provide an overview of the environmental mitigation measures considered in the ES to be implemented and the monitoring and auditing protocols to determine the effectiveness of and compliance with the statutory legislation and contract specifications;
   - To minimise the risk of any type of environmental incident.
7. The CEMP will be a 'live' document and will be maintained by FW throughout the life of the Scheme. The CEMP will be reviewed annually by Future Water, or earlier in the light of any significant changes, e.g. changed environmental risks or opportunities following updates to

[1] APP_20_00990-ES_VOL_4_APPX_A2_DESCRIPTION_OF_DEVELOPMENT-1432735.pdf (havant.gov.uk)

construction methodologies or mitigation measures. The review will ensure that the suitability and performance of the CEMP remains valid and reflects the arrangements for managing current activities on the MRW site. Following any revisions made to the CEMP, the Plan will be submitted to Portsmouth Water for review and acceptance.

8. As outlined in the OEMP (para 1.7), the CEMP includes the following information:
   - Location plan (refer to Appendix B);
   - Constraints plan (refer to Appendix C);
   - Construction programme (refer to Appendix F);
   - Toolbox talks (refer to Appendix G) and method statements;
   - Key legislation and policy strategies (refer to Appendix E).

9. The above appendices can also be "live" documents which will be maintained and updated throughout the life of the Scheme.
10. Future water will prepare the Handover Environmental Management Plan (HEMP) which will detail any post construction and operational environmental monitoring required. This document will be issued to Portsmouth Water to pass on the relevant party responsible for future maintenance and operation of the asset.

Scheme overview

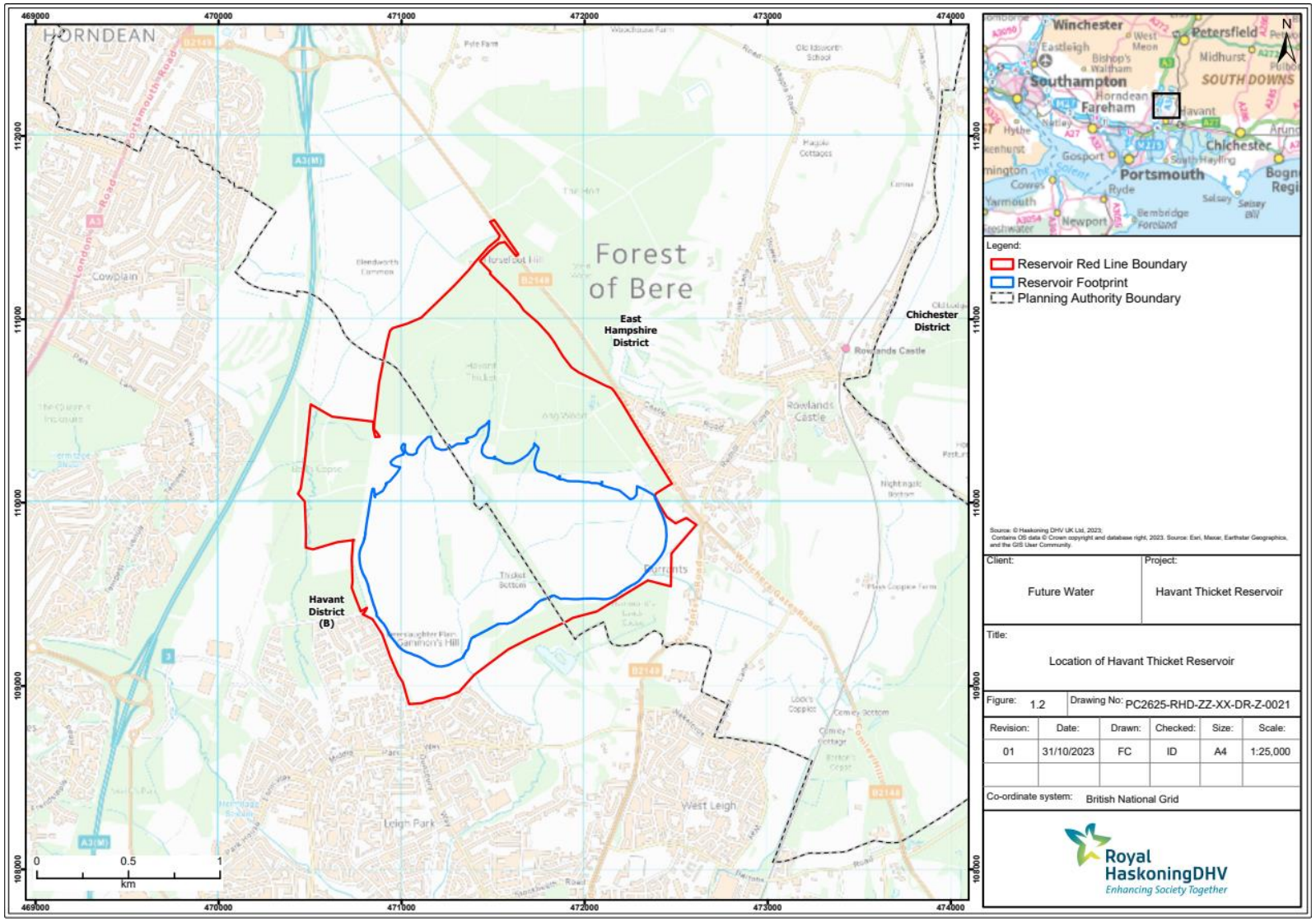
11. Southern Water has a forecast deficit in water resources in the Hampshire area which has been created by the reduction of its abstraction licences on the River Itchen imposed by the Environment Agency. Southern Water has an agreement under Section 20 of the Water Resources Act 1991 that requires them to use all best endeavours to remove this forecast deficit. Additional water made available by the Scheme will form at least 14% of the resources required to meet the forecast deficit. Building the reservoir would also make the whole South East more resilient to droughts, which are likely to happen more often in the future due to climate change.
12. The reservoir, when constructed, will be filled with surplus water drawn from the springs at the Portsmouth Water pumping station at Bedhampton works when flows are at their highest in winter via a new combined inlet/outline pipeline, and will provide water supplies to Portsmouth Water customers in the summer months as required. The increase in water supplies available to Portsmouth Water on completion of the Scheme will enable additional water to be supplied to Southern Water. Complementary to its infrastructure resilience function, the reservoir will provide a new recreational facility/resource adjacent to one of the more deprived areas in south east Hampshire, in an area which the community can access on foot, by bike, or through existing bus routes. It offers further opportunities to improve the wider footpath, cycleway and bridleway networks in the area. More than 29,500 people live within reasonable walking distance of the site (1.5km) and 120,000 people live within reasonable cycling distance of the site (4.5km).
13. The Scheme will provide a new wetland habitat and associated area for nature conservation. The proximity of the reservoir to the internationally important Chichester and Langstone Harbour means that it can be used as a safe retreat for roosting birds when there is disturbance in the Harbour (Special Protection Area (SPA) and Special Area of Conservation (SAC)).
14. The proposed pipeline will also be used as an emergency draw down pipeline if the reservoir needs to be drained down in emergency conditions.
15. As indicated in Figure 1, also included in Appendix B of this CEMP, the reservoir site lies

within two local planning authorities, Havant Borough Council and East Hampshire District Council, within the county of Hampshire. The pipeline route is entirely within the Havant Borough Council and not part of Future Water works.

16. The Environmental Constraints Plan[2] is included in Volume 3 of the ES and is reproduced in Appendix C.

[2] Environmental Constraints map - ES Vol 3 Chapter 1-2

Figure 1 Site location plan



2. Key components of the Scheme and scope of construction activities

17. The key components of the Scheme are as follows:
    - A reservoir for raw water storage and access routes, with control house, visitor centre and carpark, recreational facilities for public amenity and a wetland along the northern shore of the reservoir;
    - Minor upgrades to the existing pumping arrangements at Bedhampton Springs and Farlington Water Treatment Works.

18. The works currently within the MRW scope are summarised below[3]:
    - Construction of the Northern Access Route (NAR) (part of phase 1 works and delivered in 2023) – initially for use by construction traffic and then for use by visiting traffic when the reservoir is operational;
    - Establishment of site compounds (part of the enabling works and delivered in 2023/Q1 2024) – stripping of topsoil and excavating sub-soil. Below ground ducts for services and drainage. Hard surfacing provided for the main compound car park, access roads and unloading areas, temporary residential caravans [4]for construction workers;
    - Construction of temporary drainage system, access track & haul roads (part of enabling works and delivered in 2023/Q1 2024) - stripping of topsoil and subsoil, excavation of temporary drainage ditches, creation of on-site lagoon, settlement ponds and diversion of existing watercourses;
    - Construction of the reservoir earth embankment - borrow pit excavation, materials haulage, placement and compaction of clay, etc;
    - Construction of the reservoir culvert – deliveries of concrete by drum mixer lorries. Reinforced concrete structures cast on-site using formwork;
    - Construction of wetlands earth embankments and control structures - stripping of topsoil and subsoil, excavation of clay from borrow pits, materials haulage, clay compaction using vibrating rollers. Installation of control structures within the embankment to maintain the required water levels;
    - Construction of the valve tower - deliveries of concrete by drum mixer lorries. Reinforced concrete structures cast on-site using formwork;
    - Construction of the Southern Access Road – stripping of ground to formation level, placing and compaction of sub-base and drainage, final surface dressing;
    - Construction of the control house - deliveries of concrete by drum mixer lorries. Reinforced concrete structures cast on-site using formwork. Installation of ground structures and pipework;
    - Construction of the spillway - deliveries of concrete by drum mixer lorries. Reinforced concrete structures cast on-site using formwork;
    - Hard and soft landscaping - soft landscaping and aftercare. Hard landscaping comprising paths, picnic areas, viewing platforms, site furniture and signage,

[3] The enabling works shaded in grey were approved by Havant BC on 23rd March 2023.
[4] This activity is subject to separate planning application and a separate Construction Environmental Management Plan will accompany the planning submission.

walling and the Avenue staircase;

- Raising of Forestry England CAT A Track & installation of new culverts – installation of silt control measures downstream of the work site. Installation of new watercourse pipes and new headwalls. Raising of track level using site won material from borrow pits;
- Installation of Mechanical, Electrical, Instrumentation, Control and Automation (MEICA) and associated fit out of culvert - draw off, filling pipework and installation of associated systems within the embankment culvert and tower. Installation of security fencing, gates, doors and barriers on control structures.

19. The phasing plan and the indicative construction programme is presented in Appendix F.

3. Environment Context

The reservoir site

20. The site lies within a shallow valley located between the residential settlements of Leigh Park and Rowlands Castle. It has an area of approximately 160ha and comprises predominantly open grassland with some woodland, vegetation and ditches.
21. Within the reservoir site, The Avenue, Middle Clearing and Round Wood are classified as Ancient Semi-Natural Woodland (ASNW). The Corsican Pine Plantation is classified as Plantation on Ancient Woodland Sites (PAWS). A significant part of Havant Thicket woodland to the north is listed as PAWS. Bells Copse, located to the west, also located within the wider reservoir site is also listed as partly ASNW and partly PAWS. These woodland blocks are also designated as Sites of Importance for Nature Conservation (SINC) and contains habitats for birds, insects, bats and dormice. A Public Right of Way (bridleway) extends across from east to west.
22. Thirteen species of bats[5] were recorded within the reservoir site including Bechstein's bat. The reservoir site also supports a population of hazel dormouse, a range of priority bird species, reptiles and a small population of great crested newts is likely to be present within ponds in Havant Thicket woodland in the north, outside the reservoir site footprint. Badgers are known to forage within the reservoir site, but there are no active setts.
23. Three unnamed small watercourses run from north to south across the reservoir site, these converge into one stream to the west of the Avenue before flowing off site into the Riders Lane Stream. None of the watercourses within the reservoir site are designated main rivers by the Environment Agency.
24. The residential areas of Warren Park and Leigh Park lie to the west and south-west of the reservoir site. The settlements of Rowlands Castle and Stansted are around 200m to the east.
25. The woodland directly to the north at Havant Thicket and to the west of the reservoir site at Bells Copse is owned and managed by Forestry England for timber production, and is also classified as ancient / ancient replanted woodland.
26. Directly to the west of the reservoir site are open areas of grassland and a further area of ancientwoodland known as Cabbagefield Row.
27. Land to the south and south-west of the reservoir site comprises the residential areas of Warren Park and Leigh Park, the nearest of which are present on Swanmore Road approximately 20m from the reservoir site.

[5] Havant Thicket Reservoir Biodiversity Mitigation and Compensation Strategy (Atkins 2022).

28. Part of the reservoir site is classed as a designated Country Park, namely Staunton Country Park.The area of Staunton Country Park within the reservoir site is mainly open grasslands. It has three walking trails including: Easy Access, 2.6km, Medium Walking Trail, 2.2km and Long Walking Trail, 5.1km. There are also two cycling trails: Havant Thicket Boundary Trail and Green Mountain Bike Trail.
29. The majority of the reservoir site is located in a low probability flood risk area, Flood Zone 1. One section of the Site (south-west corner), is categorised as being in Flood Zone 2 and 3. Flood Zone 3 is the area of highest risk of flooding, defined as 'Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.'
30. The historic environment within the reservoir site includes portions of the Grade II* Leigh Park (Staunton Country Park) Registered Park and Garden (RPG) at and the Sir George Staunton Conservation Area. In addition, 42 designated heritage assets have been identified within 2km the reservoir site. These include three Scheduled Monuments, two additional Grade II* Registered Parks and Gardens, one Grade II* listed building, and 36 Grade II listed buildings. The pipeline corridor terminates near the Old Bedhampton Conservation Area. The Scheme would remove a portion of the Grade II* Leigh Park (Staunton Country Park) RPG, specifically a designed "ride" called the Avenue, which was cut from existing woodland during the late 19th century. This land is also included in the Sir George Staunton Conservation Area. An additional portion of the Conservation Area (outside of the boundary of the RPG) would also be removed to allow for the construction of the reservoir embankment.

Portsmouth Water's Project Drivers

31. Portsmouth Water's Project Drivers below provide the high-level framework which is guiding the Scheme:
    - **Quality**: Quality in procurement, design and delivery to deliver an exemplar Scheme to serve Customers in the short, medium and long term;
    - **Timeliness**: In service and operating by 2029 to support a major bulk transfer to Southern Water. Deliver efficiency in procurement;
    - **Innovation:** Develop best practice in the largest new reservoir project in the South East for decades. Capture learning from companies working in partnership deliver better value for customers;
    - **Flexibility**: Create a project that offers multiple uses and enables the Company to be a strategic water supplier for the South over the medium and long term;
    - **Responsibility**: Realise and build upon our health, safety and well-being goals;
    - **Connectivity**: Positive connection for all stakeholders – Customers, the local community, regulators, staff, contractors, shareholders, commercial partners, environment groups and individuals with a passion for the environment;
    - **Environment**: A positive contribution to local and internationally important habitats. Direct support for Government's objective to reduce the damaging abstraction of water from rivers.
32. These drivers have informed the Design Principles which were developed to inform the reservoir design. Other drivers influencing the Scheme design include the planning policy framework, which sets out the criteria against which the planning applications will be determined, and the planning application strategy, which identifies the level of detail

required to inform the planning applications.

Design Principles

33. The design principles are outlined in the OEMP (ES Vol 4 Appendix A2) which was submitted as part of the planning application for the Scheme. These principles will be taken into consideration by FW within their design scope for the MRW.

4. Approach to Environmental Management

34. A clear approach and structure for environmental management is required to fulfil the aims of the CEMP and meet environmental commitments which is set-out in this section. This includes outlining roles and responsibilities; required communication; appropriate hold points and all the mitigation, conditions, consents, licences and good working practices that need to be implemented. The CEMP sets out a clear process whereby these commitments are documented, agreed and implemented throughout the lifespan of the Scheme.

Scheme Environmental Policy

35. Future Water is committed to deliver their work in line with the commitment of Portsmouth Water to conserve and enhance the natural environment of its land and water areas and to preserve historic buildings and equipment, so far as is consistent with the primary duty of providing a sufficient supply of wholesome water at reasonable cost.
36. The Project Environmental Policy for the Scheme is provided in Appendix A.

Planning Conditions/ Client Requirements

37. Havant Borough Council[6] and East Hampshire District Council[7], as Local Planning Authorities, granted Planning Permission in October 2021 for the Scheme in accordance with the Town and Country Planning Act 1990 (as amended).
38. The planning decisions for the planning applications (reference APP/20/00990 and 51680/001) outline a number of environmental planning conditions which Future Water is required to discharge before or while undertaking the MRW. These are listed in Table 1 below. The construction working hours for the MRW are listed in Table 1.
39. This CEMP is being submitted alongside the revised planning application for the reservoir pipeline, this revised pipeline scheme now extends into the reservoir site and this CEMP covers the area within the reservoir site. There is a separate CEMP for the remainder of the pipeline scheme. This CEMP interfaces with the MRW CEMP that covers phases 1-9 of the approved reservoir scheme.

Table 1 Environmental related planning conditions

Planning condition APP/20/00990 no.	Summary of planning requirements
5	A phase specific CEMP is required to be submitted to and approved by the Local Planning Authority.
8	No construction shall take place outside the hours of 07:30-18:00 Monday to Friday, 07:30-13:00 on Saturday and no Sunday working, with the exception of specific works that shall have been agreed in writing with the Local Planning Authority. No works shall take place on Bank or Public Holidays.
9	No phase of the development shall commence until a construction noise and vibration management plan, including a targeted scheme wide construction noise and vibration monitoring and reporting programme, has been submitted to, and approved in writing by, the Local Planning Authority.

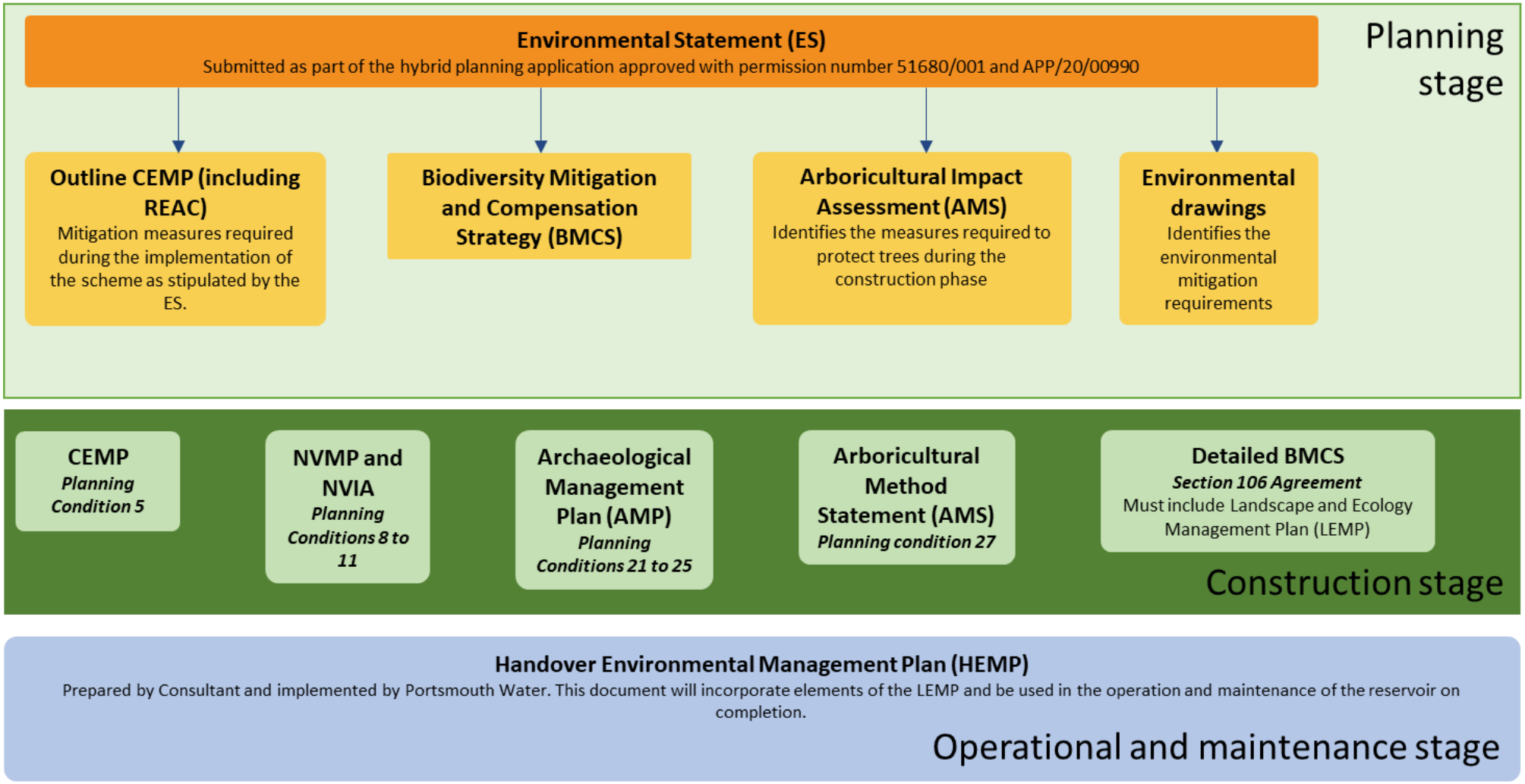
[6] https://planningpublicaccess.havant.gov.uk/onlinAPP_20_00990-DECISION_NOTICE-1539466.pdf

[7] https://planningpublicaccess.easthants.gov.uk/51680_001-Decision_Notice-1167843.pdf

Planning condition APP/20/00990 no.	Summary of planning requirements
10	No phase of the development approved under Condition 4 shall commence until a revised and updated assessment of potential noise and vibration arising during construction shall be prepared.
27	Any reserved matters application for layout or landscaping submitted pursuant to Condition 4 shall include the submission of a Tree Survey and updated Arboricultural Impact Assessment (including a Tree Constraints Plan), Arboricultural Method Statement and Tree Protection Plan showing the tree or group of trees, the Root Protection Area(s) and the crown spread(s) in relation to the proposed development.
28	No phase of the development approved under Condition 4 shall commence until full details of the landscaping of that parcel has been submitted to and approved by the Local Planning Authority.
36	No phase of the development approved under Condition 4 shall commence until full details of all ecological mitigation, compensation and enhancement measures (to be informed as necessary by up-to-date survey and assessment) and on-going monitoring of mitigation measures required for each reserved matters application (including both ecological works directly related to that Development Phase reserved matters area and any works associated with that area but lying outside of the boundary of that area) shall be submitted for approval to the Local Planning Authority.
38	An Ecological Clerk of Works (ECoW) shall be appointed, to be full time on site during site preparation and clearance and during any works in sensitive areas, and to undertake regular monitoring visits throughout the construction programme.
39	No phase of the development approved under Condition 4 shall commence until a Soil Management Plan has been submitted to and approved in writing by the Local Planning Authority.

40. Table 3.1 in the OEMP requires the implementation of mitigation measures throughout the design, construction, and operational stages of the MRW. These are presented in Appendix D.
41. A suite of key supporting environmental documents, which form part of the environmental management process in relation to discharging the environmental related planning conditions, are listed in Figure 2 overleaf.
42. The CEMP will be developed into the HEMP on completion of the construction works to pass crucial environmental information to those bodies responsible for future maintenance and operation of the asset. The PC will be responsible for preparing the HEMP and Construction Phase Health and Safety Plan on completion of construction, for handover to the managing agent.

Figure 2 Havant Thicket Reservoir - Environmental Management Process



Environmental risk assessment

43. Where possible, adverse environmental effects of the Scheme have been avoided or minimised during the outline design. This included, for example, measures to minimise the use of imported material as much as possible and selecting alternative low carbon materials in the design, where feasible.
44. The REAC identifies mitigation commitments to be implemented during the detailed design phase and the adoption of appropriate working practices during the construction, operation and maintenance phases (refer to Appendix D). The REAC will be regularly reviewed and updated by the Environmental Manager and the Site Environmental Manager, to highlight where mitigation commitments have been achieved.
45. Environmental aspects and impacts associated with the MRW activities are set out in the Scheme Environmental Aspects and Impacts Register (refer to Appendix E). Mitigation measures to manage construction risk have been evaluated and additional control measures applied to those activities with greater environmental risks which have been identified in the Aspects and Impacts Register in Appendix E.

Considerate Constructor Scheme

46. Future Water will sign up to the Considerate Constructor Scheme[8]. The Code of Considerate Practice aims to improve the impact of the construction industry on communities, the environment and workforce wellbeing by striving to leave a positive legacy through the implementation of best practice.

[8] Considerate Constructors Scheme (ccscheme.org.uk)

5. Project team roles and responsibilities

Principal Contractor responsibilties

47. FW has been appointed as the PC and is responsible for appointing the Environmental Manager, the Site Environmental Manager and any supporting environmental specialists prior to starting work on site.
48. FW is responsible for the following before and during the MRW construction phase:
    - Develops the CEMP in line with ISO14001:2015 and ES requirements, and contractual obligations;
    - Defines the environmental roles and responsibilities for their own and their key subcontractors' personnel relating to environmental issues;
    - Develops an environmental training plan covering all personnel;
    - Develops a programme of internal and subcontractor inspections/monitoring;
    - Develops site specific emergency procedures for environmental incidents;
    - Ensures the programme for works allows time to undertake any environmental surveys (i.e. ecology surveys prior the commencement of construction activities);
    - Monitors compliance with legislation and that good practice is followed throughout the duration of the construction;
    - Develops and implements a non-compliance reporting procedure to manage any environmental incidents or non-compliance events for the Scheme; This is detailed in OP 11 Procedure for Notification & Investigation of Accidents & Incidents and the Pollution Control Plan (doc no. HTR-FUW-ZZ-ZZ-PL-0530);
    - Develops the required environmental control plans (see section 6 of this document). These will be updated as required to reflect the mitigation measures proposed to be implemented during the construction phase;
    - Engages with statutory bodies (e.g. discharge planning conditions,) or through design development;

      Conducts construction planning, pre-construction surveys, etc.

Site roles and responsbilities

49. FW is the PC for the construction of the Havant Thicket Reservoir, excluding the pipeline and other ancillary buildings.
50. The site-based roles and responsibilities in relation to environmental management are summarised in Table 2 below. Responsible persons and lines of communication are shown in Figure 3.
51. All site personnel will have the responsibility and authority to halt works in any activity where environmental commitments are not being successfully delivered or to prevent legal requirements from being breached.
52. FW project management team is required to appoint suitably qualified personnel and delegate the environmental responsibilities to experienced on site personnel within the key areas of the site. The delegation of responsibilities will be clearly identified within relevant project documents and site files.

Table 2 Key site contacts[9]

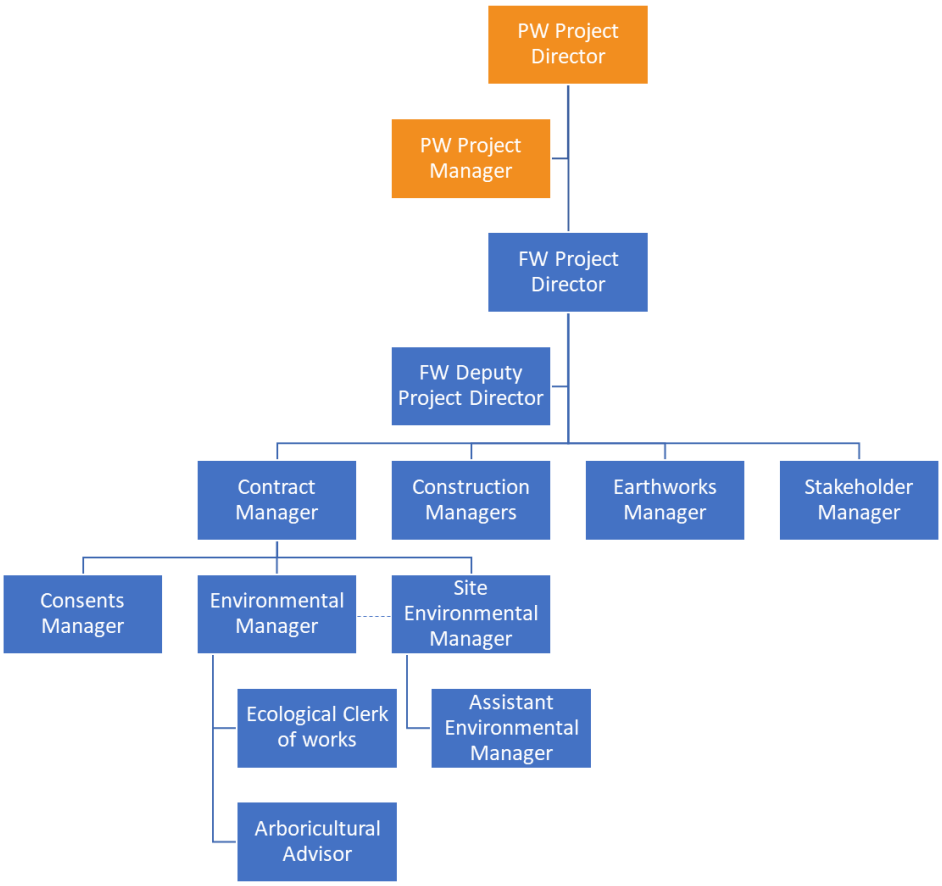
Name and role	Organisation	Contact details
Project Director: Ruari Maybank	Portsmouth Water	ruari.maybank@portsmouthwater.co.uk
Project Manager: Jonathan Clark	Portsmouth Water	jonathan.clark@portsmouthwater.co.uk
Project Director: Terry Fuller Deputy Project Director: Rob Pearson	Future Water	terry.fuller@mackley.co.uk rob.pearson@mackley.co.uk
Construction Managers: James Hanson Dafydd Elis	Future Water	James.Hanson@mackley.co.uk dafydd@jones-bros.com
Contract Managers: Geraint Lloyd James Hanson	Future Water	geraintl@jones-bros.com james.hanson@mackley.co.uk
Earthworks Manager: Derek Rapson	Future Water	Derek.Rapson@jones-bros.com
Site Environmental Manager: Terry Bellingham	Future Water	terence.bellingham@jones-bros.com
Assistant Site Environmental Managers: Sam Higgitt Rosie Wynn	Future Water	samh@jones-bros.com rosie.wynn@jones-bros.com
Environmental Manager: Andrew Hepworth	Future Water (RHDHV)	andrew.hepworth@rhdhv.com
Consents Manager: Iain Johnson	Future Water (RHDHV)	iain.johnson@rhdhv.com
Ecological Clerk of Works: John Condron	Future Water (Ecology Resources)	john@ecologyresources.co.uk
Arboricultural Advisor: Tom Hurley	Future Water (Advanced Arboriculture Ltd)	th@advancedarb.com
Stakeholder Manager: Angela Spinks	Future Water	angela.spinks@mackley.co.uk

53. An updated organogram is maintained within the FW quality assurance process and will be

[9] For the most up to date key contacts please refer to the project organogram HTR-FUW- ZZ-ZZ-RX-Z-001

used to identify the key personnel working on the Scheme (doc no. HTR-FUW- ZZ-ZZ-RX-Z-001).

Figure 3 – Lines of communication based on environmental roles and responsibilities



Project management organisation

54. Portsmouth Water is responsible for overseeing the overall management of the Scheme.
55. Some of the site supervision roles such as the Engineering Clerk of Works and procurement specialist consultants to supervise, monitor or check the method statements, including sensitive activities, will be delegated where required by Portsmouth Water.

Environmental management responsibilities

56. Portsmouth Water, FW, and its subcontractors, are all responsible for adhering to and complying with the relevant environmental legislation, bylaws and regulations.
57. All site personnel will be required to attend the site induction which outlines their duty of care to the environment and will be provided with adequate training, supervision or instruction in the form of tool box talks, site induction modules and specific method statements as necessary.
58. Responsibilities for site environmental management will be delegated to key personnel by the FW Project Director and summarised in Table 3. These personnel will be responsible for implementation, reporting and monitoring of environmental mitigation during the contract period in liaison with the Site Environmental Manager. Where required, environmental specialists will be appointed by FW to provide advice on specific issues or site activities.
59. The key environmental management roles and responsibilities are presented in Table 3

below.

Table 3 Key personnel with environmental management responsibilities

Organisation and role	Responsibilities
Portsmouth Water Project Manager/Project Director	Overseeing the implementation of the reservoir works in accordance with the planning application conditions (APP/20/00990 and 51680/001) and relevant legislation.
Future Water Project Director/Deputy Project Director	Accountable for the FW deliverables, including the FW Legacy and Benefit commitments. Being the day to day point of contact for Portsmouth Water. Addressing any escalated issues from the FW Project team. Overall responsibility for the FW staff and Site visitors' health, safety and wellbeing on Site. Appointing the key personnel and ensuring the appropriate environmental mitigation measures are implemented through design and construction activities.
Future Water Construction/Contracts/Site Managers	Ensuring the required environmental consents are in place before work starts. Reporting incidents and non-conformances to Portsmouth Water. Liaising with statutory authorities and Portsmouth Water as required and ensuring that records of communication (including verbal communication) are retained. Supervision of FW staff. Ensuring the safety and efficiency of construction activities. Day to day management of site operations. Contributing to the daily and weekly site reports. Implementing environmental mitigation measures through design and construction activities.
Future Water Consents Manager	Ensuring FW provides the works in accordance with the FW Consents Management Plan. Preparation, revision and submission to the Project Manager of the FW Consents Management Plan. Ensuring that the Stakeholder commitments FW is responsible for, including those set out within the REAC, are met. Preparation, enagement with stakeholders as neccesary and submission of any construction Consents the Contractor requires to provide the works. Ensuring that FW discharges and complies with any Consents as necessary to provide the works. Contributes to the Monthly Report.
Future Water Environmental Manager	Acts as the point of contact for all environmental issues and FW environmental specific-deliverables updates. Ensures FW staff are carrying out the commitments under the REAC and the FW CEMP. Preparation, revision and submission to the Project Manager of the FW CEMP. Contributing to Monthly Progress Reporting.

Organisation and role	Responsibilities
Future Water Site Environmental Manager	Supports the Environmental Manager and the project management team in delivering the environmental component of the works during the construction phase. Ensures work is undertaken in accordance with the CEMP, environmental legislation and all permits, consents and licences. Records the progress of the environmental works. Identifies key environmental concerns on site as the Scheme develops. Monitors and updates the Environmental Manager on the progress of environmental surveys. Provides input to the site induction on environmental practices, conducts toolbox talks, coordinates specialist surveys and oversee monitoring activities, as required. Undertakes day to day monitoring and supervision of construction activities in relation to environmental aspects on site to ensure identified mitigation measures are adhered to and corrective action is taken, as necessary. Undertakes site inspections with the Environmental Manager and/or project management team. Ensures site audits and non-conformance checks are carried out. Assesses and checks survey results and update databases, environmental plans as required. Inputs and reviews site specific method statements to ensure appropriate environmental mitigations are in place for each construction activity. Liaises with site supervisors, site management team and general construction workers. Provides regular updates to the Environmental Manager on site progress, compliance, issues, problems, successes, etc. Accompanies statutory authorities on site visits, as necessary. Identifies cost saving and best practice activities. Reviews actions being taken to manage resources (natural and others) during site activities. These include but are not limited to water usage, electricity usage, and raw material usage in the site offices. Contributes to Monthly Progress Reporting.
Future Water Ecological Clerk of Works	Prepares Precautionary Methods of Working/ Method Statements to protect flora and fauna during the works. Advises on the protection of ecological features and mitigation measures. Undertakes pre-construction and construction phase species checks. Conducts ecological watching briefs e.g. during grass strimming/ vegetation clearance. Undertakes the translocation of flora and fauna. Maintains the daily site diary.
Future Water Environmental Specialists	Future Water will appoint suitably qualified environmental specialists such as: Noise and vibration specialists; Archaeologists; Arboricultural advisors;

Organisation and role	Responsibilities
	and other specialists, as required.
Future Water Stakeholder Manager	Maintains and develops the Stakeholder Management Plan. Maintains a comment and enquiries log for the Project. Acts as the key point of contact with interested parties, local communities, etc. Liaises with the project team to respond and implement appropriate measures, as required.

6. Records of environmental actions and commitments

60. The REAC, Table 3.1 of the Outline Environmental Management Plan[10], identifies environmental actions and commitments made during the outline design to mitigate the potential environmental effects of the Scheme. These are presented in Appendix D of the CEMP.

61. The REAC will be updated as the Scheme progresses and the mitigation measures will be incorporated within the Scheme management systems. It will be finalised at the end of construction on completion of the Scheme, when it will be advanced into a Handover Management Plan (HEMP). This is the main vehicle for passing essential environmental information to Portsmouth Water and crucially to the bodies responsible for the future ongoing maintenance and operation of the Scheme.

Environmental control plans

62. The CEMP is supported by a number of topic specific management control plans. The management plans address the requirements of the REAC and will ensure appropriate mitigation measures are implemented during the construction works.

63. The topic specific management plans will be issued to Portsmouth Water for review and approval prior to implementation. The management plans will also be subject to review and updating (as required) to reflect the progress of the works.

Water Quality Management Plan

64. The Water Quality Management Plan (WQMP) (doc no. HTR-FUW-P2-RE-RP-EN-0014) describes the control measures that will be adopted by Future Water to protect the quality of surface and groundwater during the MRW construction. The key measures that will be adopted to manage and control environmental risks during construction include water quality monitoring, water quality management measures, contingency and accident plans and a document management system.

65. Continuous water quality monitoring locations have been selected in order to provide representative water quality samples from locations upstream and downstream of the MRW.

66. The WQMP includes the best practice measures to be adopted to prevent the pollution of watercourses as required by the REAC (refer to Appendix D).

67. Future Water has implemented an Emergency Response Plan (ERP) (doc no. FUW-ZZ-XX-PLW-0002) for the MRW which include incidents relating to oil, fuel or chemical spills.

68. The project records, including water quality monitoring data, environmental incidents and

[10] APP_20_00990-ES_VOL_4_APPX_A2_DESCRIPTION_OF_DEVELOPMENT-1432735.pdf (havant.gov.uk)

complaints will be recorded and reported within the FW document control procedures (as outlined in the Quality Plan (doc no. HTR-FUW-ZZ-XX-QA-W-007).

Pollution Control Plan

69. A Pollution Control Plan (doc no. HTR-FUW-ZZ-ZZ-PL-0530) has been developed to outline the pollution prevention measures required to be implemented during the construction activities.
70. The Plan identifies the potential pollutants present on the site, the receptors that may be affected by potential pollutants, the pollution prevention measures that will be implemented to minimise the risk of pollution and the response measures to minimise the impact of any pollution incident.

Site Waste Management Plan

71. The Site Waste Management Plan (SWMP) (doc no. HTR-FUW-P2-RE-RM-W-0008) has been developed to efficiently manage waste produced during construction of the MRW. The SWMP also covers the use of wastes brought onto site.
72. The SWMP will include (but is not limited to):
    - Evidence that the Duty of Care checks have been carried out on all the waste managed;
    - A comparison of the predictions with the actual waste removed, and the declaration that the SWMP has been managed in accordance with the Waste Regulations;
    - The monthly quantities of waste produced;
    - The Duty of Care documentary evidence for each of the waste streams;
    - Plans showing the area for a secure waste compound where segregated materials for on-site reuse or off-site recycling are safely stored.
73. The Plan also includes the measures to be adhered to during construction to manage wastes, as required by the REAC (refer to Appendix D).
74. The Site Environmental Manager, or an appointed deputy will monitor the implementation of the SWMP during the construction works.
75. The SWMP references the site Materials Management Plan which is described below.

Materials Management Plan

76. The Materials Management Plan (MMP) (doc no. HTR-FUW-P2-RE-RM-W-0009) has been prepared to manage excavated material and demonstrate that it is being extracted only for the purpose of re-use on site within the reservoir embankment, associated drainage, access and for landscape/habitat enhancement works.
77. The earthwork materials required for the construction of the embankment and associated reservoir works are being obtained by excavation within the boundary of the Scheme.
78. The purpose of the MMP is to set out the approach for the management of excavated materials and ensure the works are carried out in accordance with the CL:AIRE (Contaminated Land: Applications in Real Environments) Definition of Waste Code of Practice (DoW CoP).

Noise and Vibration Management Plan

79. The Noise and Vibration Management Plan (NVMP) (doc no. HTR-RHD-P2-RE-PL-W-0017)

sets out the systems and controls that will be adopted to manage noise and vibration during construction of the MRW.

80. The NVMP includes the measures to be adopted to prevent adverse impacts from noise and vibration as required by the REAC (refer to Appendix D). All works will comply with the recommendations of BS5228-1 and BS5228-2: Code of Practice for Noise and Vibration Control on Construction and Open Sites.

81. During the MRW, noise monitoring will be undertaken at selected representative noise sensitive receptors. The results will be used to refine the predicted noise that would arise during the main works activities, and to identify if any further requirements for noise mitigation in line with best practicable means. To ensure the noise prevention mitigation measures are effective regular site inspections will be carried out.

Soil Management Plan

82. The Soil Management Plan (SMP) (doc no. HTR-FUW-P2-RE-RM-W-0006) encompasses soil materials within the Scheme boundary that will be recovered and used to support vegetation in the MRW.

83. The SMP includes the proposed use of soils within the works and procedures for stripping, storing and replacing soils which will enable the site construction team to manage soils within the site efficiently and effectively through the life of the Scheme.

84. The SMP includes the measures to be adhered to during construction, as required by the REAC (refer to Appendix D).

Fish Management Plan

85. The Fish Management Plan (doc no. FUW-XX-RE-PL-W-0001) describes the measures to minimise the risk of harm to fish during construction of the MRW.

86. The Plan includes the measures to be adopted to prevent adverse impacts on fish populations during construction required by the REAC (refer to Appendix D). Mitigation measures stipulated in the REAC include the protection of fish populations during watercourse dewatering activities and removal of fish from any sections of channel requiring dewatering.

87. Specific mitigation controls to prevent adverse impacts on fish populations during construction are detailed in the Plan. Where required, a fish licence will be obtained from the Environment Agency in advance of any fish removals.

Ecological Management Plan

88. An Ecological Management Plan (EcoMP) (doc no. HTR-RHD-ZZ-ZZ-PL-Z-0001) has been developed which sets out the appropriate avoidance and mitigation measures which must be implemented to ensure construction-related impacts on ecological features are minimised. The Biosecurity Management Plan (doc no. HTR-FUW-ZZ-ZZ-PL-W-0529) identifies the risks of introducing invasive non-native species and the control measures that are being implemented.

89. Extensive ecological surveys have been undertaken since inception of the Scheme to define the ecological baseline with respect to legally protected and notable species present within the site.

90. An Ecological Clerk of Works (ECoW) will be employed on site to oversee construction site

activities and provide expert ecological advice, as necessary.

91. The EcoMP includes the mitigation measures to be adopted to minimise construction-related impacts on ecological features, as required by the REAC (refer to Appendix D).

Dust Management Plan

92. A Dust Management Plan (doc no. HTR-FUW-ZZ-ZZ-PL-W-0517) details the measures to be taken to reduce the generation of dust during construction of the MRW.
93. The Plan includes the measures to be adopted to limit and control emissions to air during construction to avoid direct and indirect impacts on community and ecological receptors, as required by the REAC (refer to Appendix D).
94. The REAC control measures, together with additional specific controls to manage dust will be implemented as soon as MRW commence and will be monitored by the site management team throughout the works.

Construction Traffic Management Plan

95. A Construction Traffic Management Plan (CTMP) (doc no. HTR-FUW-RZ-RE-HS-E-0506) has been prepared which sets out how traffic and site operations will be managed during construction of the MRW and how workers will be travelling to and from site.
96. The CTMP includes, but is not limited to:
    - Details of vehicle routing plans;
    - Numbers of construction personnel, including travel arrangements and mitigation where required;
    - Details of the number of construction and delivery vehicles using the public highway;
    - Traffic management measures;
    - Site compounds and laydown area details;
    - Highway condition surveys;
    - Methods for managing the site to prevent mud onto the highway;
    - Details of on-site contractor parking.

7. Consents and permissions

97. FW will ensure all permits, consents and licences are in place prior to commencement of construction. FW will manage submissions and approval of all the required consents, permits and licences prior to commencement of the relevant site works.
98. The Consents Management Plan (doc no. HTR-RHD-ZZ-ZZ-RP-Y-0001) details the process FW is required to follow to obtain, implement and comply with all permits, consents and licences during the construction phase.
99. Portsmouth Water has overall responsibility for the permissions applicable to the Scheme. FW is required to obtain, implement and comply with all permits, consents and licences during the construction phase. Table 4 lists the key consents and licences which have been sought, or are likely to be required.

Table 4 Main reservoir works - Environmental permits, consents and licences

Type of permit, consent, licence	Applicant	Issuing authority	Status	Reference Number	Construction activity
Environmental Permit (water discharge activity)	Future Water	Environment Agency	Application submitted	To be confirmed	Construction of the reservoir and embankment walls
Environmental Permit (water discharge activity) - vehicle and wheel washing	Future Water	Environment Agency	To be determined	To be confirmed	Construction activities
Environmental Permit (waste activity) - recovery and disposal of soils onsite	Future Water	Environment Agency	To be determined	To be confirmed	Construction of the reservoir and embankment walls
Local Enforcement Position - diversion of four headwaters (ordinary watercourses) of the Riders Lane Stream	Future Water	Environment Agency	Granted	PC2625-RHD-ZZ-XX-CO-EP-0001/ NPS/WR/037872	Installation of the surface water drainage network
Impoundment Licence - for the main and wetland embankment walls	Portsmouth Water	Environment Agency	Submitted	NPS/WR/037872	Construction of the reservoir and embankment walls
Abstraction Licence (Water Resources) - dewatering of the borrow pits	Future Water	Environment Agency	Submitted	NPS/WR/038078	Construction of the reservoir and embankment walls

Type of permit, consent, licence	Applicant	Issuing authority	Status	Reference Number	Construction activity
Exemption for abstraction (dewatering) in advance of receiving permit (MRW-5)	Future Water	Environment Agency	Granted	To be confirmed by Future Water	Construction of the reservoir and embankment walls
Ordinary Water Course Consent - Temporary Works Drainage	Future Water	Hampshire County Council	Granted	OWC-2023-0082	Installation of the surface water drainage network
Ordinary Watercourse Consent - installation of 450mm twin Wall pipe and concrete bag wall headworks	Future Water	Hampshire County Council	Granted	OWC-2022-0252	Installation of 450mm twin wall pipe
Ordinary Watercourse Consent - Wetlands Structures	Future Water	To be confirmed	In preparation	To be confirmed	Wetland embankment
S278 Agreement (for Southern Access)	Future Water	To be confirmed	In preparation	To be confirmed	Main works
Vegetation Removal Consent	Future Water	Environment Agency	Granted – expires 26/04/2026	WEX368269	Main works
Closure of Bridleway 120 / 29	Future Water	To be confirmed	In preparation	To be confirmed	Main works
CLAIRE DoW:CoP	Future Water	CLAIRE (Environment Agency)	In preparation	To be confirmed	Construction of the reservoir and embankment walls
Waste Exemptions - use	Future Water	Environment Agency	To be determined	To be confirmed	Construction of the reservoir and

Type of permit, consent, licence	Applicant	Issuing authority	Status	Reference Number	Construction activity
					embankment walls
Waste Exemptions - treatment	Future Water	Environment Agency	To be determined	To be confirmed	Construction of the reservoir and embankment walls
Waste Exemptions - storage	Future Water	Environment Agency	To be determined	To be confirmed	Construction of the reservoir and embankment walls
Invasive Species Management Plan	Future Water	To be confirmed	In preparation	To be confirmed	Main works
European Protected Species licence – bats*	Portsmouth Water	Natural England	Issued	2020-50625-EPS-AD2-1	Construction of the reservoir and embankment walls
European Protected Species – dormice*	Portsmouth Water	Natural England	Issued	2020-50527-EPS-AD2-1	Construction of the NAR and site compound

* Protected species licences apply to the whole site.

8. Environmental monitoring requirements and procedures to monitor compliance

Environmental monitoring requirements

100. Environmental monitoring will be undertaken to measure the effectiveness of environmental controls and implementation of this CEMP.

101. FW is responsible for undertaking environmental monitoring on site, such as noise monitoring, ecological surveys and water quality monitoring. The Inspections, auditing and monitoring procedure (doc no. HS-p-0005), which forms part of the EMS, includes methods for monitoring, recording and implementing the environmental management on site, including provision for formal records of site observations and procedures for responding to and reporting any noted areas of non-compliance.

102. FW is responsible for keeping records of environmental monitoring and management actions which will be captured using the site inspection form (doc. Ref. EN-a-007). The site inspections are documented on Pansophy and completed via PIM Mobile.

Objectives and targets, KPIs

103. In order to assess environmental performance during construction, environmental objectives and targets have been developed. The objectives and targets are consistent with the Project environmental policy and will assist in monitoring whether the commitments of the policy are being met. The Project environmental policy requires construction activities to be managed to minimise their environmental impact and demands on resources.
104. The performance of the Scheme will be monitored against the objectives and targets. The Scheme performance will be documented in the monthly progress reports.
105. A summary of the environmental objectives and targets for the Scheme is provided in Table 5 below.

Table 5 Environmental objectives and targets

Objective	Target	Measures
Waste minimisation	90% of waste to be diverted from landfill	Waste hierarchy to be implemented across the project lifecycle. Implementation of a SWMP
Maximise use of site won material	90% of site won material to be reused on site	Material Management Plan
Biodiversity enhancement	Contribute to the overall Scheme to achieve biodiversity mitigation and compensation in line with commitments made in the Scheme ES.	Woodland Creation: • 0.76 ha broadleaved woodland planting on Gipsies Plain and 0.74 ha wood pasture/parkland. • 1.38 ha broadleaved woodland planting and 1.1 ha of wood pasture/parkland within Memory Park in the west of the Site by planting of native species blocks to provide a mosaic of habitats. • Additional area of woodland planting on Site totalling 0.3 ha. Hedgerow restoration, e.g. • Improve habitat

Objective	Target	Measures
		connectivity. • Compensate the loss of vegetation on Site. Grassland creation, e.g. • Create a large expanse of species-rich grassland on the downslope of the reservoir embankment. • Provide value for landscape integration and nature conservation and biodiversity. Scrub edge creation, e.g. • Retain willow scrub along the north-eastern boundary of the reservoir site and Havant Thicket woodland. • Provide 0.37 ha of new scrub edge habitat. Wet woodland creation, e.g. • Fell Corsican Pine Plantation and replant with alder, aspen, black poplar and willow to create wet woodland. • Wetland retaining structures to be constructed to maintain consistent water levels when the main reservoir water levels low. Shoreline habitat creation, e.g.

Objective	Target	Measures
		• Develop shoreline ephemeral shallow vegetation on the north-east corner of the reservoir. • Provide partially submerged dead-wood features.
Carbon reduction	Identify opportunities through the design and construction phases to minimise the carbon footprint of the Scheme.	Follow the carbon management hierarchy: Eliminate, Reduce, Substitute, Compensate.
Sustainable materials	100% of the key materials (timber, concrete and aggregates) to be sourced from sustainable sources.	Sustainable Procurement Management Plan

Environmental records

106. Records of compliance with the requirements of the CEMP, derived from audits and other inspections, will be held at the FW site office. Document management will be controlled via Business Collaborator CDE, and internally with the FW Document Management System, Pansophy. These will be available for inspection by representatives of any audit team and the Environment Agency, in their statutory role.

107. FW is using Pansophy as a central document management system for any checklists, reports and monitoring consistent with the process outlined in the Quality Plan (doc no. HTR-FUW-ZZ-XX-QA-W-007).

Site inspection checklist

108. FW have processes and protocols in place for environmental aspects to be checked. On completion of a site inspection, details will be logged using the Environment Site Inspection Report (form EN-a-007a) and corrective actions implemented if required should any non-conformances be identified. Portsmouth Water will review the Action Tracker as part of their checking and audit role.

Procedures to monitor compliance

109. The level of environmental management will be monitored to assess compliance with the environmental legislation, contractual requirements and best practice standards through site inspections and audits.

110. A project record will be maintained for formal records associated with the implementation of the CEMP, which will be managed and controlled within Future Water filing systems.

111. FW is responsible for maintaining environmental records. The CEMP is supported by other Scheme documents such as Health, Safety and Quality procedures.

Environmental audit

112. As part of the Quality, Environmental and Safety management systems it will be necessary for an audit to record environmental compliance. The audit schedule is outlined in the project Quality Plan (doc no. HTR-FUW-ZZ-XX-QA-W-007).

Control of documents

113. All risk assessments, method statements and Control of Substances Hazardous to Health (COSHH) forms will consider environmental impacts, in addition to health and safety items.

9. Introduction, training and briefing procedures for staff

114. Table 6 identifies an indicative programme of training on environmental issues relevant to the Scheme that have been identified for delivery during the construction stage.
115. FW is responsible for site inductions and training of all personnel on the site, whether visitors, full time staff or subcontractors.
116. All individuals working on or visiting the site will be required to attend the site- specific induction. Those participating in, or near to specific activities that have an environmental impact will be required to attend additional training or toolbox talks (TBTs) as part of the Method Statements, Risk Assessments and task briefings. FW specialists are likely to cover environmental topics on ecology, pollution control, waste management and emergency procedures for managing environmental incidents. The environmental TBTs are held on Pansophy and a list of environmental TBTs is presented in Appendix G.
117. The environmental training records will be kept in the site files and the document control system as outlined in the project Quality Plan (doc no. HTR-FUW-ZZ-XX-QA-W-007).

Table 6 Indicative training programme

Topic	Personnel	Delivery
Key environmental issues	All construction staff	Site induction
Water quality protection measures	All construction staff, Operatives undertaking works which would impact water quality (i.e. excavations, etc)	Site induction Task briefings
Waste management	All construction staff	Site induction
Protecting species and habitats (ecology)	All construction staff	Site induction
Invasive species	Operatives working in close proximity of areas with presence of invasive species	Task briefings
Be a good neighbour (Considerate Constructor Scheme)	All operational staff	Site induction
Prevention of noise nuisance	All construction staff	Site induction
Pollution prevention measures	All construction staff	Site induction

Environmental competencies

118. FW will ensure all personnel conducting environmental tasks are suitably qualified or experienced for the roles and responsibilities that they are employed to undertake.
119. FW will keep a record of the environmental induction or training provided prior to undertaking any activities on site. A matrix of environmental training for site activities is provided in Appendix H.

Training and site induction

120. All site personnel and visitors will receive site safety induction and environmental awareness training before commencing activities on site. The list below is not exclusive but environmental training during the site induction will include at least the following:
    - Scheme Environmental Policy;
    - Site environment;
    - Fuel containment;
    - Earthworks and excavations (risks of exposing contamination);
    - Pollution protocol and measures for example use of spill kits;
    - Defined materials storage areas (excavated and imported);
    - Defined waste areas - domestic and construction materials;
    - Wheel wash – road sweeping;
    - Dust and emissions control;
    - Noise control;
    - Vibration control;
    - Site traffic protocols and routes in the Construction Traffic Management Plan (doc no. HTR-FUW-RZ-RE-HS-E-0506) – haul routes, staff travel to site plan;
    - Warning signs;
    - Method statements, risk assessments and daily briefings for each construction activity;
    - Site inspection and monitoring forms;
    - TBTs, where relevant to specific works;
    - Communication systems on site – dealing with the public, incident and near miss reporting, inclusive of environment;
    - Site organisation, key personnel responsibilities and contact details;
    - ERP for addressing safety and environmental issues;
    - Contamination risk management;
    - Update and maintain site specific TBTs or advisory sheets relevant to the Scheme.

Toolbox talks (TBTs) and induction supporting materials

121. TBTs will be presented to staff involved in activities that have an environmental impact. A schedule of TBTs is provided in Appendix G. The TBTs will be briefed to all staff undertaking works under a method statement, risk assessment and any environmental impacts will be covered in the environment section of the method statement, risk assessment.
122. TBTs will be delivered by a relevant competent person. For example, ecological TBTs for works affecting species and habitats will be delivered by the Ecological Clerk of Works (ECoW). TBTs will also be posted within common use areas such as welfare units and office reception areas. Key environmental issues linked to the programme will be targeted on the daily notice board as an aide memoir to all staff on site.

10. Emergency procedures

123. FW has implemented an Emergency Response Plan (ERP) (doc no. FUW-ZZ-XX-PLW-0002) for the main works, that includes the following incidents:
    - Oil, fuel or chemical spill;

- Fire;
- Accident including falls into the water;
- Flooding;
- Vandalism;
- Breakdowns;
- Enforced shutdown;
- Unexpected circumstances, e.g., contamination, bank instability;
- Unexploded ordnance;
- Unplanned changes to operations, such as those driven by adverse weather.

124. The ERP details response procedures should an environmental incident occur, including reporting procedures and emergency contact details, e.g., the Environment Agency. Site staff will be briefed on the key aspects of the ERP as part of the site induction and a series of TBTs will be delivered to ensure staff are familiar with the ERP and their respective duties.
125. In the event of an incident, the Portsmouth Water Project Manager or delegated deputy will be notified of the incident, without delay. The Site Emergency Coordinator will implement the emergency response procedure, coordinate with Emergency Services and coordinate with other parties both on and off-site.
126. The immediate response to all incidents is to make the area safe and undertake measures to prevent further environmental harm. An assessment will made in consultation with the EcoW to ensure that responses do not result in further harm.

11. Communications

Internal communication

127. FW will make Portsmouth Water aware of engagements with statutory bodies (e.g. the Environment Agency, Natural England, local planning authorities) as part of the regular progress meetings.
128. FW has established and will maintain procedures for internal communications between the various levels and functions of the team during construction. Internal communications include:
    - Communicating environmental commitments to the construction teams;
    - Raising awareness of environmental issues to the construction teams;
    - Reporting incidents to relevant managers.

External communication

129. FW will document and respond to any relevant communications from external interested parties during construction. External communications may include, but will not necessarily be limited to:
    - Dealing with complaints from members of the public;
    - Dealing with the media.
130. FW will maintain an ongoing liaison with the statutory/regulatory bodies during the construction phase. Table 7 outlines the proposed communication framework.

Table 7 - Key stakeholders and lines of communication

Stakeholder	Communication process
Portsmouth Water (Client)	Portsmouth Water manages the lines of communications with key stakeholders. FW site management team will be responsible for supporting the client in any safety and/or environmental meetings (as required).
Statutory bodies and non statutory groups/forums	Portsmouth Water manages the consultation forums with the statutory and non statutory bodies. FW will support Portsmouth Water in engaging with the key stakeholders.
The public/local residents	The public shall be kept informed of any operations and developments that may have an effect upon them, such as temporary loss of amenities, changes to pedestrian or vehicle access routes or vegetation clearance. Any such notification will set out the nature of the operations and the times at which they are to be carried out. Social media and letter drops may be used to keep local residents informed of progress on construction and any new operations that are to be carried out. The information provided will also include details of contacts within the project team (should any issues arise).
Construction staff	Construction staff shall be kept up to date on all operational matters that may have an impact on the safety and environmental factors on site. The site induction will form the basis for all relevant information provided to construction staff and will be supported at regular intervals by TBTs, especially where new or particularly sensitive operations are about to commence. Regular briefings to construction staff will also provide an opportunity to update them on any changes in working methods and procedures. Audits and reviews of the effectiveness of the method statements will highlight any corrective measures and subsequent feedback to construction staff will serve as a means of regulating and ensuring best working practice are implemented.

131. Weekly construction team meetings will be held, or more frequently as required, where environmental issues will be discussed. Internal communications will be carried out using TBTs with site workers and at site meetings.

Appendices

Appendix A EMS Certificate and Scheme Environmental Policy

EMS Certificate

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SYSTEM CERTIFICATION bmtrada ISO 14001 CERTIFICATION

UKAS MANAGEMENT SYSTEMS 0012

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

CERTIFICATE OF REGISTRATION

This is to certify that

Jones Bros Ruthin Co Ltd (including Jones Bros Ruthin (Civil Engineering) Co Ltd & Cambrian Services Limited)
Ty Glyn
Canol y Dre
Ruthin
Denbighshire
LL15 1QW

has been audited and found to meet the requirements of standard
ISO 14001:2015 Environmental Management System

Scope of certification
The provision of civil engineering and construction services.

Vicki Howlett
General Manager - Certification UK

Certificate number: 1816

Issue number: 2023-01

Certificate effective date: 15 March 2023

Certificate expiry date: 2 April 2026

Date of initial certification: 8 March 2011

Issuing Office: Warringtonfire Testing and Certification Limited t/a BM TRADA Chiltern House, Stocking Lane, High Wycombe, Buckinghamshire, HP14 4ND, UK
Registered Office: Warringtonfire Testing and Certification Limited, 3rd Floor, Davidson Building, 5 Southampton Street, London, WC2E 7HA, UK Reg No. 11371436.

This certificate remains the property of BM TRADA. This certificate and all copies or reproductions of the certificate shall be returned to BM TRADA or destroyed if requested. Further clarification regarding the scope of this certificate and verification of the certificate is available through BM TRADA or at the above address or at www.bmtrada.com/certified-companies/check-a-certificate

The use of the UKAS accreditation mark indicates accreditation in respect of those activities covered by the accreditation certification number 012. For further information on bmtrada activities covered by UKAS accreditation please go to: https://www.ukas.com/search-accredited-organisations

A Scheme Environmental Policy has been prepared and is presented below.

Future Water MJJV Ltd

Portsmouth Water

PROJECT ENVIRONMENTAL POLICY

It is the responsibility of Future Water MJJV, its employees and contractors to commit to, maintain, and continually improve the environmental management system (EMS) to protect the environment and to prevent pollution.

Implementing the Havant Thicket Reservoir project will provide water in the South East of England to an area which is expected to have an additional 4.1 million people in the region by 2045. This project will help to safeguard internationally-rare rivers in Hampshire by providing an alternative, sustainable source of water.

Implementing the Havant Thicket Reservoir project may affect some aspects of the environment. As one of the key elements of sustainability, we are committed to giving full and equal consideration to the environment in all our activities we undertake. We will endeavour to minimise potentially detrimental effects upon the environment wherever possible.

For the purposes of this policy we define the environment as encompassing the natural and built environment, and will consider our activities upon it, including the consumption of materials and the production of emissions and waste.

Our Vision

Our vision is that in delivering the project, we shall meet and, where possible, exceed industry best practice, and will minimise any potentially detrimental effects on the environment.

Our Approach

We shall apply the following initiatives and actions to achieve our vision:

Management

- Implement an Environmental Management System compliant with ISO14001:2015, which identifies environmental impacts, sets objectives and targets, identifies pollution prevention measures and monitors, reviews and reports progress on regular basis.
- Manage construction activities in an efficient way to minimise their environmental impact and demands on resources.
- All employees are responsible to ensure the project complies with all legislative requirements.
- We will expect the principles of our policy to be adopted by our contractors and subcontractors.

Responsibility

- Raise awareness of environmental issues to promote behavioural change.
- Be a good neighbour to the communities in which we work.
- Promote and support the use of sustainable modes of transport.

Sourcing

- Purchase equipment and materials having regard to their environmental impacts, promoting ethical and sustainable sourcing where possible.

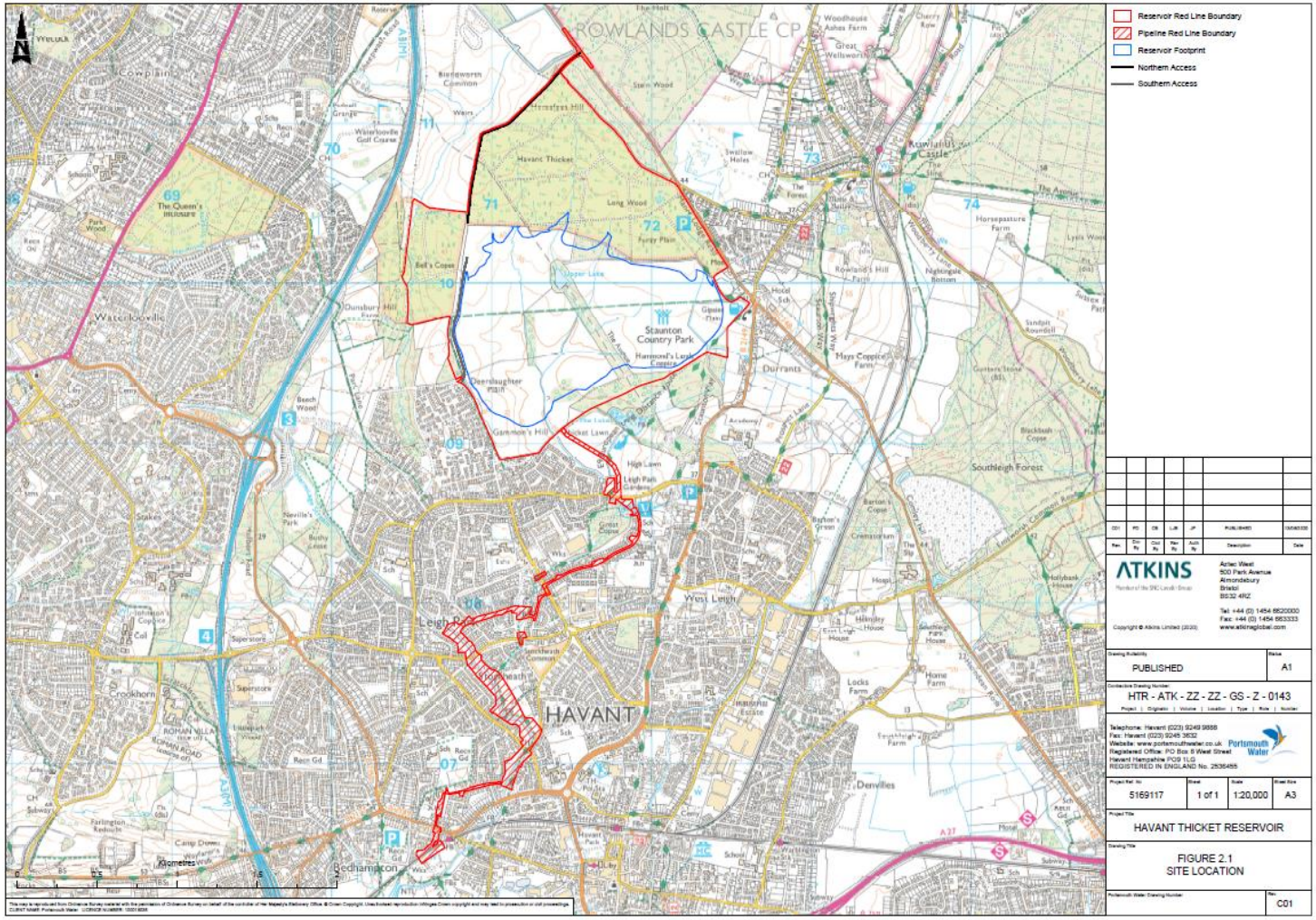
This policy will be regularly reviewed and updated to ensure continual improvement opportunities are implemented through the duration of the project.

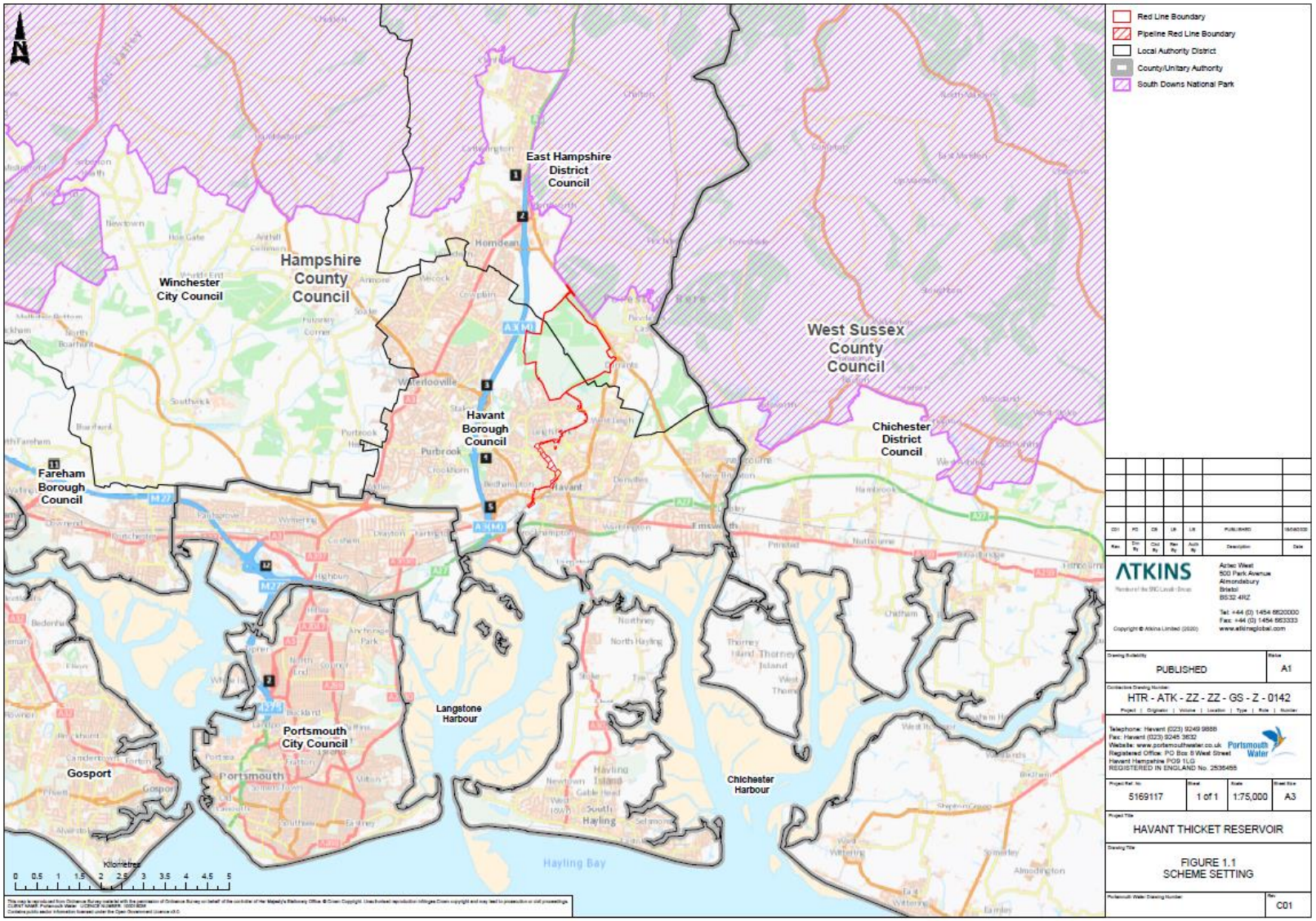
Terry Fuller	Robert Pearson
Future Water Project Director	Future Water Deputy Project Director
Date: 21st November 2023	Date: 21 Nov 2023

Doc no: HTR-FUW-ZZ-XX-PC-HS-0001 Rev02

Appendix B Site Location Plan

The site location is presented below and in Figure 2.1 from the ES (APP_20_00990-ES_VOL_3_Chapters_1-2_Intro_And_Description_Of_Development_Figures-1432510).




Red Line Boundary
Pipeline Red Line Boundary
Local Authority District
County/Unitary Authority
South Downs National Park
East Hampshire District Council
Hampshire County Council
Winchester City Council
West Sussex County Council
Havant Borough Council
Chichester District Council
Fareham Borough Council
Portsmouth City Council
Gosport
Langstone Harbour
Chichester Harbour
Hayling Bay
Kilometres
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5
ATKINS
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500 Park Avenue
Almondsbury
Bristol
BS32 4RZ
Tel: +44 (0) 1454 8620000
Fax: +44 (0) 1454 863333
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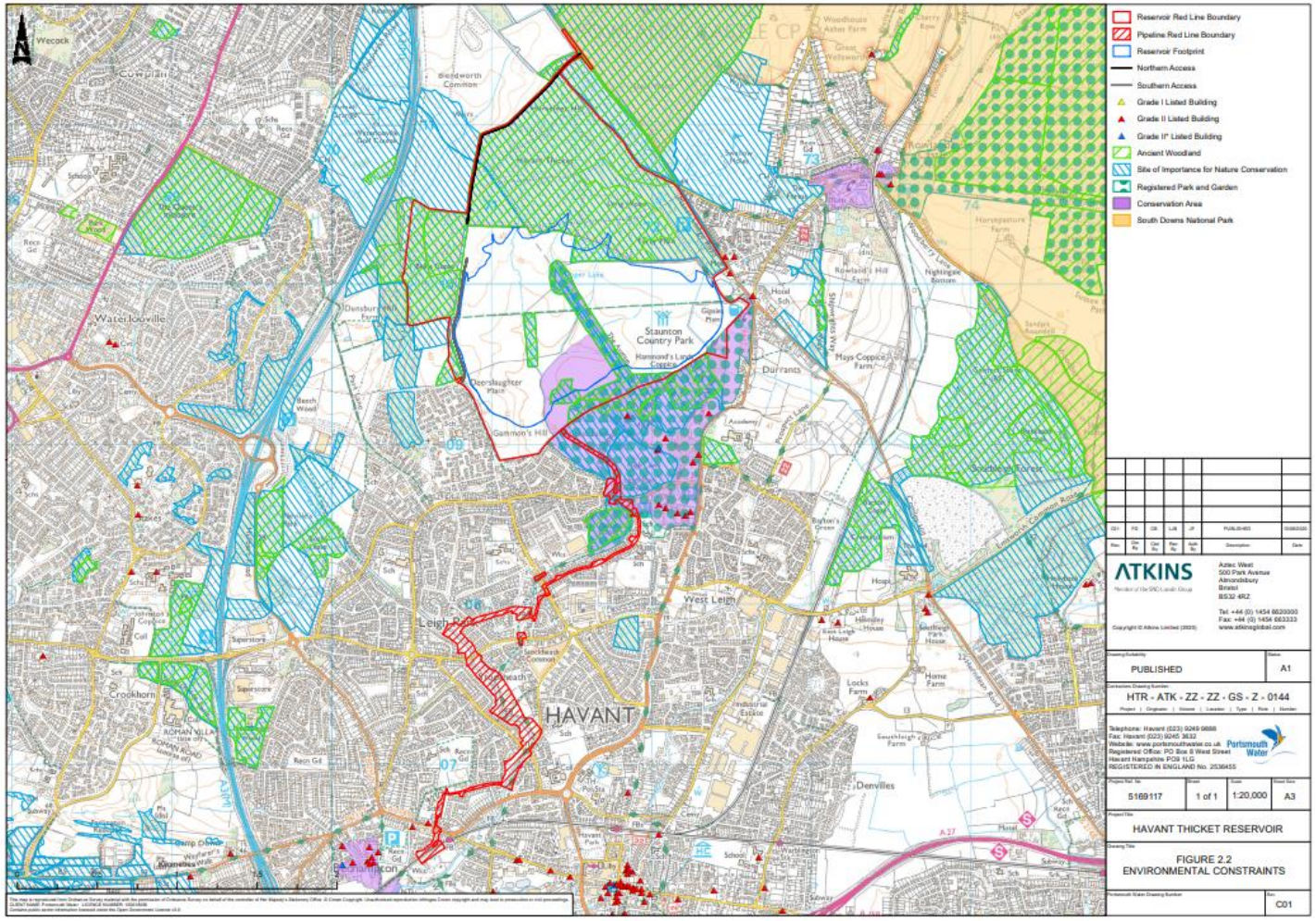
Drawing Suitability
PUBLISHED
Size
A1
Contractor Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0142
Project | Originator | Volume | Location | Type | Role | Number
Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536485
Portsmouth Water
Project Ref. No.
5169117
Sheet
1 of 1
Scale
1:75,000
Sheet Size
A3
Project Title
HAVANT THICKET RESERVOIR
Drawing Title
FIGURE 1.1
SCHEME SETTING
Portsmouth Water Drawing Number:
Rev
C01

Appendix C Environmental Constraints Plan

The key Scheme environmental constraints are presented below and in Figure 2.2 from the ES (APP_20_00990-ES_Vol_3_Chapters_1-2_Intro_And_Description_Of_Development_Figures-1432510).



Appendix D Records of Environmental Actions and Commitments (REAC)

The Records of Environmental Actions and Commitments (REAC) below is taken from Table 3.1 in the OEMP, which was included in the ES for the Scheme.

The REAC overleaf summarises the committed mitigation measures within the chapters of the published ES and associated appendices and when the Action is to be implemented (e.g. at pre-construction, construction, operation, or all stages). The construction stage actions and commitments are the addressed by the MRW CEMP.

The REAC overleaf also identifies which commitments fall within the scope for the MRW CEMP. REAC commitments which are shaded in grey have either i) been addressed as part of the pre-construction stage mitigation measures carried out during enabling works; or ii) will be completed by Portsmouth Water; or iii) will be addressed in future work stages.

The REAC will be updated on a regular basis and a copy of the completed version will be issued to the LPAs once the MRW construction works have been completed to demonstrate compliance with the planning conditions.

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
Air Quality								
AQ1	Ch 7	To limit and control emissions to air during construction to avoid direct and indirect impacts on community and ecological receptors.	Works will be carried out in accordance with the Best Practicable Means, as described in Section 79 (9) of the Environmental Protection Act (EPA) 1990, to reduce fumes or emissions which may impact upon air quality. Selected mitigation measures given in the IAQM Construction Dust Guidance which are applicable to high-risk construction sites are described below. With appropriate mitigation measures in place, any adverse effects resulting from the construction works would be minimised such that there would not be any significant residual effect on receptors. The Principal Contractor will undertake mitigation measures to address construction dust from the site, taking into account the direct and indirect impacts of site preparation and construction works on residential and business uses, and ecological receptors. Mitigation measures, which are considered to be particularly appropriate near the properties to the southwest and east of the reservoir site are identified below and include site management; monitoring; preparing and maintaining the Site: operations; and waste management; measures specific to demolition; measures specific to earthworks; measures specific to construction; measures specific to Trackout. Site management: • Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken; • Make the complaints log available to the local authority when asked; • Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book; • Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/ deliveries which might be using the same strategic road network routes. Monitoring: • Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary; • Carry out regular site inspections to monitor compliance with the	Community and ecological receptors sensitive to dust	Daily Site Audits by a representative from the Principal Contractor	**P, C**	Y	Initial: FW Date: Actions/commitments inserted into Dust Management Plan - 20/09/2023

[11] P = Pre-construction, C = Construction, O = Operation, A = All

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
			DMP, record inspection results, and make an inspection log available to the local authority when asked • Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions; • Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it is a large site, before work on a phase commences. Preparing and maintaining the Site: • Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible; • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site; • Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period; • Avoid site runoff of water or mud; • Keep site fencing, barriers and scaffolding clean using wet methods;• Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; • Cover, seed or fence stockpiles to prevent wind whipping. • Operating Vehicle/Machinery and Sustainable Travel: • Ensure all vehicles switch off engines when stationary - no idling vehicles • Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable; • Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate); • Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials;					

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
			• Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). Operations: • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems; • Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate; • Use enclosed chutes and conveyors and covered skips; • Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; • Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. Waste management: • Avoid bonfires and burning of waste materials; • Measures specific to demolition: • Ensure effective water suppression is used during demolition operations; • Avoid explosive blasting, using appropriate manual or mechanical alternatives; • Bag and remove any biological debris or damp down such material before demolition. • Measures specific to earthworks: • Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable; • Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; • Only remove the cover in small areas during work and not all at once.					

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
			Measures Specific to Construction: • Avoid scabbling (roughening of concrete surfaces) if possible; • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place; • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. Measures Specific to Trackout: • Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. • Avoid dry sweeping of large areas; • Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport; • Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable; • Record all inspections of haul routes and any subsequent action in a site log book; • Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned; • Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable); • Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits; • Access gates to be located at least 10 m from receptors where possible.					
Historic Environment								
HE1	Ch 8	To identify, evaluate, and record impacts to archaeological remains	Development of an Archaeological Management Plan	The Archaeological Management Plan will include: • The potential for prehistoric archaeological	Production and archiving of report on the findings of works done under the Archaeological Management Plan, including approval	**P, C**	Y	Initial: FW is undertaking archaeological site work in accordance with the Archaeological Management Plan. Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
				remains within the boundaries of the Reservoir site, including access routes; • Recording of features associated with known archaeological remains within the Reservoir site (and confirmation of past removal if necessary); • The potential for remains associated with William Stone's development of Upper Lake and the Avenue; and • The identification and interpretation of remains associated with the value of the Leigh Park RPG and the Sir George Staunton Conservation Area where they may add to the value of these assets.	from the LPA Archaeologist.			
HE2	Ch8	To ensure the conservation of the Sir George Staunton Conservation Area	Continued consultation with the EHDC / HBC Heritage Manager on designs of the reservoir Control House and to ensure they are in keeping with the aesthetic and historic character of the conservation area.	All designs for new structures within the conservation area will be in keeping with the character of the conservation area and follow the guidance identified in its published management plan.	Concurrence with the LPA Conservation Officer on the appropriateness of design.	**P**	Y	Initial: FW will ensure the reservoir Control House designs will be in keeping with the character of the conservation area. Date:
HE3	CH8	To limit impacts to as-yet unknown archaeological remains from the construction and use of the access roads	Use of materials designed to limit soil disturbance, such as GeoTrax or CellWeb.	Will be undertaken as part of the Arboricultural Method Statement.		**C**	Y	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
HE4	CH8	To offset moderate adverse effect on the Grade II* Leigh Park Registered Park and Garden and Sir George Staunton Conservation Area caused by the removal of a portion of the Avenue.	Measures taken during detailed design to explore options for enhancement and interpretation of the historic environment as part of public realm amenities. Such designs should be developed in consultation with Historic England and the EHDC / HBC Heritage Manager, as well as the Hampshire County Archaeologist, where appropriate. These measures should consider a mechanism to interpret the role of the Avenue in the understanding of value of the Leigh Park RPG and Sir George Staunton Conservation Area in order to offset the harm caused by its partial removal.	Detailed design will continue to engage with Historic England and EHDC / HBC on ways to include interpretation and enhancement of the historic environment in the design of the visitor's centre and public realm features.	Agreement from Historic England and EHDC on the final designs.	**P**	Y	Initial: FW will explore options for enhancement and interpretation of the historic environment as part of public realm amenities. Date:
Biodiversity								
B1	CH9	To set out mitigation and compensation for the reservoir site.	Develop a detailed Biodiversity Mitigation and Compensation Strategy, to include strategy, responsibility and timing of actions to deliver onsite mitigation and compensation measures and additional offsite compensation measures for the reservoir site.	Stakeholder comments will be obtained from LPA, Natural England, Environment Agency and Forestry England.	Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA. Quarterly progress ECoW reports to be provided to LPA during construction.	**P, C**	N	Initial: Issued by Portsmouth Water Date: July 2022 Comments: A previous submission to support delivering this commitment is contained in the BMCS (July 2022). Refer to Planning application
B2	CH9	To set out long term management for habitat creation and enhancement areas at the reservoir site.	Develop a detailed long term ecological management plan (EcMP) for the reservoir site, including management measures, monitoring and plan review requirements.	Stakeholder comments will be obtained from LPA, Natural England, Environment Agency and Forestry England.	Agreement of EcMP by LPA prior to end of construction. Monitoring reports to be provided to LPA during first five years of operation.	**C, O**	Y	Initial: LEMP issued by Portsmouth Water Date: July 2022
B3	CH9	To assist appointed construction contractor in meeting biodiversity requirements	Ecological Clerk of Works (ECoW) to be appointed, to be full time on site during site preparation and clearance and during any works in sensitive areas, and to undertake regular monitoring visits throughout construction programme.	ECoW to be appointed by contractor will be suitably qualified and experienced ecologist.	Quarterly ECoW progress reports to be provided to the LPA	**C**	Y	Initial: Date:
B4	CH9	To minimise disturbance of sensitive retained habitats and species	Project design and ecological management plan will include measures to control and direct visitor access to minimise disturbance in sensitive areas.		Detailed design and EcMP to be agreed by LPA.	**P**	Y	Initial: Design development in conjunction with Portsmouth Water Date:
B5	CH9	To ensure compensation measures relating to bat SACs are co-ordinated across local development projects	Portsmouth Water will engage with FE (owner of Havant Thicket) and share information on bat mitigation measures with the LPA and wider development applicants including the land East of Horndean applicants to assist in developing a strategic mitigation approach that maintains the conservation status of the Bechstein's bat population.		Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA.	**P**	N	Initial: Issued by Portsmouth Water Date: July 2022 Comments: A previous submission to support delivering this commitment is contained in the BMCS (July 2022). Refer to Planning application

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
B6	CH9	To protect areas of SINCs and ancient woodland outside the working areas from accidental incursion	Install protective fencing (high visibility or HERAS) at the edge of the working area, including protecting all retained woodland, scrub and grassland areas and a 15 m buffer zone around all ancient woodlands where practicable, and with expert arboricultural advice where work is required within 15m, and maintain throughout construction.		Integrity of adjacent areas to be monitored on weekly basis by ECoW. Updates to be included in quarterly ECoW progress report to LPA.	**C**	Y	Initial: Date:
B7	CH9	To minimise loss of ancient woodland	During detailed design, continue to seek and act on any opportunities to reduce loss of ancient woodland and veteran trees further.		Detailed design to be agreed by LPA.	**P**	Y	Initial: Southern embankment positioned further north to avoid further tree loss. Date:
B8	CH9	To compensate for loss of ancient woodland (onsite measures) and loss of habitat used by bats and dormice	Habitat creation areas undertaken as advanced planting at Gipsies Plain and Deerslaughter Plain to be protected, and enhanced, if opportunities arise, during construction and managed under long term management plan. Habitat enhancement areas in woodlands within the reservoir site red line boundary to be undertaken early in construction programme, prior to clearance of ancient woodland, and then managed under long term management plan.	Stakeholder comments will be obtained from LPA, Natural England, Environment Agency and Forestry England.	Agreement of detailed Biodiversity Mitigation and Compensation Strategy and EcMP by LPA. Combined total with offsite measures of at least 110 ha of creation / enhancement. Quarterly ECoW progress reports to be provided to LPA during construction.	**A**	Y	Initial: Portsmouth Water Date: July 2022
B9	CH9	To contribute to compensation for loss of ancient woodland (onsite measures) and loss of habitat used by bats and dormice	During detailed design, identify any opportunities to use ancient woodland soils to contribute to habitat creation. Include separate management of ancient woodland soils for restoration works after passing places on northern access road have been reduced to final size, and any other retained ancient woodland soils, in the soil management plan. During construction, the methods for ancient woodland soil management and re-use will be actioned.	Stakeholder comments will be obtained from LPA, Natural England, Environment Agency and Forestry England.	Agreement of detailed Biodiversity Mitigation and Compensation Strategy and EcMP by LPA. Combined total with offsite measures of at least 110 ha of creation / enhancement. Quarterly ECoW progress reports to be provided to LPA during construction.	**A**	Y	Initial: BMCS & LEMP Issued by Portsmouth Water Date: July 2022
B10	CH9	To contribute to compensation for loss of ancient woodland (onsite measures)	During detailed design, identify suitable areas of ancient woodland indicator ground flora plants for localised transplanting into retained areas of woodland. During site clearance, ECoW or other suitably qualified and experienced ecologist will undertake transplanting.	Stakeholder comments will be obtained from LPA and Natural England.	Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA. Quarterly ECoW progress reports to be provided to LPA during construction.	**P, C**	N	Initial: BMCS & LEMP Issued by Portsmouth Water Date: July 2022

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
B11	CH9	To contribute to compensation for loss of ancient woodland (offsite measures)	During detailed design, develop a strategy for offsite woodland and wood pasture creation. Methodology is to be confirmed, but it is anticipated to include elements of native tree and shrub planting and natural regeneration using approaches such as rewilding or accelerated succession. Implement strategy during construction phase.	Stakeholder comments will be obtained from LPA and Natural England.	Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA. Combined total with offsite measures of at least 110 ha of creation / enhancement. Quarterly ECoW progress reports to be provided to LPA during construction.	**A**	N	Initial: BMCS & LEMP Issued by Portsmouth Water Date: July 2022 Comments: Previous submissions to support delivering this commitment is contained in the BMCS & LEMP (July 2022). Refer to Planning application
B12	CH9	To protect veteran and other trees and compensate for losses	The detailed Biodiversity Mitigation and Compensation Strategy will include a strategy for compensating for veteran tree loss. Measures will include options such as moving deadwood, veteranising existing trees and ring-barking non-native trees. Protection of retained trees following standard practice (i.e. BS 5837:2012 Trees in relation to design, demolition and construction – recommendations). A construction exclusion zone will be established using steel mesh panel fencing, or similar, around retained trees where works are not limited by the existing roads or other associated hard infrastructure that could be protecting underlying tree roots. The retained veteran trees shall be assessed by an arboriculturist prior to construction to inform on any potential remedial works that maybe required to manage any structural or physiological defect(s) that increase the likelihood of full or partial failure of the tree or tree part within falling distance of the works. This forms part of a duty of care to both people and property laid down in the Occupiers Liability Acts 1957 and 1984, the Highways Act 1980 and Health and Safety at Work Act 1974. Veteran habitat features are often defects, meaning any potential works will be sympathetic, whilst being reasonable in order to manage the risk of harm to people or property.	Stakeholder comments will be obtained from LPA and Natural England.	Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA. Quarterly ECoW progress reports to be provided to LPA during construction.	**P, C**	N	Initial: BMCS & LEMP Issued by Portsmouth Water Date: July 2022 Comments: Previous submissions to support delivering this commitment is contained in the BMCS & LEMP (July 2022). Refer to Planning application
B13	CH9	To compensate for loss of purple moor-grass and rush pasture	Create compensatory purple moor-grass and rush pasture habitat in glades in Havant Thicket, at least 1:1 for loss of this habitat. Enhance retained wet grassland habitat.	Stakeholder comments will be obtained from LPA and Natural England.	Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA. Quarterly ECoW progress reports to be provided to LPA during construction.	**P, C**	Y	Initial: Date:
B14	CH9	Compensate for habitat losses	Design new habitats during detailed design, including detailed design of wetlands that maximises retention of ancient woodland areas for conversion to wet woodland supporting native tree species. Create new wetland in accordance with design. Create species-rich grassland on the outer embankment of the reservoir. Plant new scrub and enhance retained hedgerows.	Stakeholder comments will be obtained from LPA, Environment Agency and Natural England.	Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA. Agreement of detailed wetland design by LPA.	**P, C**	Y	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
					Quarterly ECoW progress reports to be provided to LPA during construction.			
B15	CH9, CH15	To protect watercourses from construction related pollution risk	The PC will adopt best practice to avoid pollution of watercourses. This is to include, but is not limited to adherence to Guidelines for Pollution Prevention (GPP), latest Environment Agency pollution guidance available from data.gov, and Construction Industry Research and Information Associated (CIRIA) guidance on the control of water pollution from construction sites.	Contractual responsibilities between Portsmouth Water and PC. Pollution prevention measures will be detailed in a CEMP. The PC will have access to relevant guidance material.	No reportable incidents of construction related watercourse pollution above thresholds set within the water quality monitoring strategy.	**P, C**	Y	Initial: Best practice is set out in the Water Quality Management Plan Date: Oct.2023
B16	CH9	Protection of existing fish populations	During watercourse de-watering activities appropriately screened pumping equipment will be deployed to reduce risk of fish entrainment.	Construction of the pipeline crossing will require de-watering and over pumping of existing watercourse lengths. Approaches to prevent harm to fish will be required as part of the Flood Risk Activity Permits / best practice.	No harm to fish during de-watering activities. Quarterly ECoW progress reports to be provided to LPA during construction.	**P, C**	Y	Initial: Process set out in Fish Management Plan Date:
B17	CH9	Protection of existing fish populations	Development of a fish management plan which may require the removal of fish from any sections of channel requiring de-watering.	Construction of the pipeline crossing will require de-watering and over pumping of existing watercourse lengths. Approaches to prevent harm to fish will be required as part of the Flood Risk Activity Permits / best practice. Any fish removal will need to be undertaken with regard to Environment Agency FR2 consenting requirements.	No harm to fish during any removal process. Quarterly ECoW progress reports to be provided to LPA during construction. Detail of fish removal/translocation reported within Environment Agency FR2 consenting process.	**P, C**	Y	Initial: Process set out in Fish Management Plan Date:
B18	CH9, CH15	Protection of retained watercourses and associated flora and fauna	Silt control measures to be applied to control siltation risks associated with de-watering activities and construction related discharges.	There will be a requirement to manage potential of silt propagation within watercourse channels associated with in-channel working.	No reportable incidents of construction related watercourse pollution above thresholds set within the water quality monitoring strategy.	**P, C**	Y	Initial: Best practice is set out in the Water Quality Management Plan Date: Oct.2023

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
				Required as part of Flood Risk Activity Permits.	Quarterly ECoW progress reports to be provided to LPA during construction.			
B19	CH9, CH15	Watercourse mitigation and compensation	Develop and implement a Watercourse Mitigation and Compensation Strategy, to include details of measures, responsibility and timing of actions and objectives to deliver onsite and offsite mitigation and compensation. Implement localised woodland stream enhancements upstream of the reservoir. Offsite measures to be developed and implemented in agreement with the Environment Agency, which could include works, such as restoration of a section of Hermitage Stream. Reinstatement of riparian zones (e.g. bank profiles and/or vegetation cover) following disturbance from construction.	Stakeholder comments will be obtained from LPA and Environment Agency.	Agreement of Watercourse Mitigation and Compensation Strategy by statutory authorities. Mitigations and compensation meet objectives within the timescales set out within the Watercourse Mitigation and Compensation Strategy.	**A**	N	Initial: BMCS Issued by Portsmouth Water Date: July 2022 Comments: A previous submission to support delivering this commitment is contained in the BMCS (July 2022). Refer to Planning application
B20	CH9, CH15	To mitigate for the potential effects on aquatic species associated with routine reservoir drawdown events	Design and create backwater features on the Riders Lane Stream to act as refugia during high flows.	Requirement triggered by likely changes in frequency of high flow events.	Functional backwater habitat constructed to designer's requirement.	**P, C**	N	Initial: BMCS Issued by Portsmouth Water Date: July 2022 Comments: A previous submission to support delivering this commitment is contained in the BMCS (July 2022). Refer to Planning application
B21	CH9	To compensate for the loss of Upper Lake	Translocate locally uncommon plants. Pond enhancements in Havant Thicket woodland. Creation of ephemeral shallows within outline wetland design.	Loss of ecological important feature requires compensation.	Translocation undertaken successfully and species becomes established at the receptor site. No deleterious material is transferred to the receptor site (e.g. invasive non-native species).	**P**	Y	Initial: the translocation of notable aquatic plants to enhanced ponds and headwater restoration areas in Havant Thicket woodland is being carried out as part of the enabling works phase. Date:
B22	CH9	Protection of bats and compensation for loss of roosting opportunities	Felling methods to minimise risks to individual bats will be followed as set out in the bat licence method statement (for roost trees) and (for non-roost trees) a Precautionary Method of Working. These will set out timing and methods of working. Inclusive of any bat boxes required under the licence, at least one bat box will be erected for each tree with high or moderate bat potential that is felled.	Licence to be obtained from Natural England prior to felling of any roost trees	Work to be undertaken in accordance with licence. Quarterly ECoW progress reports to	**P, C**	Y	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
					be provided to LPA during construction.			
B23	CH9	Protection of bats from indirect harm	Mitigation will be provided for lighting during construction and operation. Any temporary lighting required during construction will be designed to minimise light spill. Permanent lighting will comprise hooded luminaires directed away from vegetation, particularly the boundary hedgerows and treelines to avoid any light spill onto retained vegetation. Lighting will follow good practice current at the time of detailed design. The new lighting will be task-related, associated with the visitor centre and associated car park and with no lighting on the access roads. The lux level will be as low as possible to meet their purpose safely and effectively.	Stakeholder comments will be obtained from LPA and Natural England on detailed lighting design.	Quarterly ECoW progress reports to be provided to LPA during construction.	**A**	Y	Initial: Date:
B24	CH9	Protection of dormice and compensation for habitat loss	Vegetation clearance and tree felling methods to minimise risks to individual dormice will be followed as set out in the dormouse licence method statement. This will set out timing and methods of working. The licence will also be followed in terms of compensatory measures, including habitat creation, habitat enhancement and erection of dormouse nest boxes.	Licence to be obtained from Natural England prior to felling of any roost trees	Work to be undertaken in accordance with licence. Quarterly ECoW progress reports to be provided to LPA during construction.	**P, C**	Y	Initial: Date:
B25	CH9	Protection of otters	Precautionary pre-clearance survey will be undertaken at watercourses and areas of scrub and woodland linked to watercourses. Vegetation clearance in these areas will follow a Precautionary Method of Working. Light spill on watercourses will be avoided.	Further mitigation to be agreed with LPA if evidence of otters is found.	Quarterly ECoW progress reports to be provided to LPA during construction.	**P, C**	Y	Initial: Completed in 2022 Date:
B26	CH9	Protection of water voles	Mink monitoring and management will be included in the EcMP if water voles colonise or are introduced to the reservoir site after creation.		Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA.	**O**		Initial: PW Date: TBC
B27	CH9	Protection of badgers	Precautionary pre-clearance survey will be undertaken at areas of suitable habitat. Vegetation clearance in these areas will follow a Precautionary Method of Working.	A licence will be obtained if badgers colonise the site and a sett requires closure.	Quarterly ECoW progress reports to be provided to LPA during construction.	**P, C**	Y	Initial: FW Date: 2023 – end of construction works. Ecological Management Plan (doc no. HTR-RHD-ZZ-ZZ-PL-Z-0001) covers the protection of badgers.
B28	CH9	Protection of nesting birds	Precautionary pre-clearance survey will be undertaken at areas of suitable habitat if clearance is required in the nesting season (typically March to August). Vegetation clearance in these areas will follow Precautionary Method of Working.		Quarterly ECoW progress reports to be provided to LPA during construction.	**P, C**	Y	Initial: Date:
B29	CH9	Provision of nesting opportunities	Barn owl and kestrel nesting boxes (minimum of two of each) will be erected in secluded areas of the reservoir site. Detailed design will also include, where practicable, provision of nesting opportunities such as nesting platforms, sand martin / kingfisher banks and / or nesting towers.	Stakeholder comments will be obtained from LPA, Environment Agency and Natural England.	Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA. Agreement of detailed wetland design by LPA.		Y	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
					Quarterly ECoW progress reports to be provided to LPA during construction.			
B30	CH9	Protection of reptiles	Retained vegetation will be protected for use as receptor sites. Clearance of suitable habitat will follow a Precautionary Method of Works. This is likely to include a combination of translocation and displacement of animals into enhanced adjacent retained habitat. The PMW will set out the season and method of clearance.		Quarterly ECoW progress reports to be provided to LPA during construction.		Y	Initial: Date:
B31	CH9	Protection of great crested newts and other species.	A precautionary eDNA survey will be undertaken at the Upper Lake. Clearance of suitable habitat will follow a Precautionary Method of Works. The PMW will set out the season and method of clearance. If a great crested newt is found during clearance, works will be halted and the ECoW will advise how to proceed and whether a licence is required. As best practice, common amphibians encountered during site clearance will be moved to safe areas of retained habitat.	A licence will be obtained if the Upper Lake is found to have been colonised by great crested newts.	Quarterly ECoW progress reports to be provided to LPA during construction.		N	Initial: Surveys undertaken – negative eDNA result Date:
B32	CH9	Conservation of terrestrial and riparian invertebrate assemblage	Detailed design and the measures set out in the detailed Biodiversity Mitigation and Compensation Strategy will include features to benefit terrestrial and riparian invertebrates. Examples include variation in grassland height, creation and retention of edge vegetation, wetland design, woodland enhancement, inclusion of aspen in planting design and retention and placement of standing and ground level dead wood.		Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA. Agreement of detailed wetland design by LPA.		Y	Initial: BMCS issued by Portsmouth Water Date: July 2022
B33	CH9	Avoid spread of invasive non-native species	CEMP will include detailed methods to minimise risks of spreading invasive non-native species by managing risks and removing them. Target species will include non-natives in the retained woodland. Strict measures will be followed, in particular, to minimise risks of spreading parrot's feather.		Agreement of CEMP by LPA. Agreement of detailed wetland design by LPA.	**P, C**	Y	Initial: Date:
B34	CH9	Monitor works to inform adaptive management	The detailed Biodiversity Mitigation and Compensation Strategy will set out monitoring requirements, which will be transposed into the long term EcMP. These will include habitat monitoring to inform management decisions and may also include targeted key species monitoring.		Agreement of detailed Biodiversity Mitigation and Compensation Strategy and EcMP by LPA.	**A**	Y	Initial: BMCS and LEMP issued by Portsmouth Water Date: July 2022
B35	CH9	To report as required under licences.	Monitoring requirements will be met, as set out in the bat and dormouse licences.		Reports to be provided to Natural England and copied to LPA.	**A**	N	Initial: Date:
B36	CH9	Requirement for strategy for capital grants scheme	The detailed Biodiversity Mitigation and Compensation Strategy will include the strategy for a capital grant scheme, targeting the features identified as priorities in the outline detailed Biodiversity Mitigation and Compensation Strategy.		Agreement of detailed Biodiversity Mitigation and Compensation Strategy by LPA.	**P**	N	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
B37	CH9, CH15	Conservation of aquatic invertebrate assemblage	Ephemeral invertebrate communities recorded at distinct locations in Headwater Streams 1-5, notably those containing rare and notable species, will be translocated to appropriate receptor areas, as informed by a baseline ecology survey/Ecological Clerk of Works. The receptor areas may include unaffected areas of Headwater Streams 1-3 or suitable areas in the headwaters of the nearby Park Lane Stream.	Rare and notable species were recorded as part of the 2020 macroinvertebrate surveys undertaken by APEM, which can be used as a guide to where these communities are present noting that they may extend beyond the sample locations.	Agreement with the Environment Agency on translocation and receptor locations.	**P**	N	Initial: Date: Completed 2022
Ground conditions								
GC1	CH 10	To prevent injury/death to on-site human health receptors and/or damage to property receptors associated with potential discovery of unexploded ordnance (UXO).	Principal Contractor to undertake further assessment of potential UXO risks to determine the requirement for the implementation of UXO mitigation measures. Mitigation measures to be implemented as appropriate in the CEMP, Health and Safety File, Construction Phase Plan, Health and Safety Risk Assessment Method Statements (RAMS), Emergency Response Plan and HEMP.	A desk study assessment and Zetica UXO risk maps have identified the potential risk of encountering UXO at the site as 'likely'.	Mitigation measures to be included within the CEMP, Health and Safety File, Construction Phase Plan, RAMS, Emergency Response Plan and HEMP as appropriate. All required mitigation measures to be implemented during the construction phase. Residual risks to be managed as appropriate through the operational phase.	**A**	Y	Initial: Included in the Emergency Response Plan (doc no. FUW-ZZ-XX-PLW-0002) Date:
GC2	CH 10	To prevent adverse risks to on-site and off-site human health, controlled waters, property and ecological receptors from the potential disturbance/ mobilisation of existing contaminated soil or groundwater and/or introduction of new sources of contamination (i.e. from spillages and leaks) during construction works.	Principal Contractor to undertake works in accordance with the Construction (Design and Management) Regulations (CDM Regulations) 2015 and appropriate guidelines and best practice. Principal Contractor to prepare a CEMP to include (but not limited to) the following mitigation measures: Health and safety RAMS and appropriate Personal Protective Equipment (PPE) to be implemented for the protection of construction workers in accordance with the Control of Substances Hazardous to Health (COSHH) Regulations 2002 (as amended); Minimising the area and duration of soil exposure and timely reinstatement of vegetation or hardstanding to prevent soil erosion; Stockpile management (such as water spraying and covering) to reduce contaminated windblown dust and surface water run-off; Clear segregation between stockpiled material including imported material, excavated material stockpiled for re-use and excavated waste material stockpiled for treatment and / or off-site disposal;	Previous ground investigations and a Generic Quantitative Risk Assessment (GQRA) undertaken for the site did not identify contaminants in soil or groundwater that are likely to present unacceptable risks to identified human health, controlled waters or ecological receptors. There is also the potential for unforeseen	Mitigation measures to be included within the CEMP, Health and Safety File, Construction Phase Plan, RAMS and Emergency Response Plan as appropriate. All required mitigation measures to be implemented during the construction phase. Completion of records of environmental watching brief in the	**P, C**	Y	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
			Implementation of appropriate dust suppression measures to prevent migration of contaminated dust as required; Implementation of working methods during earthworks to manage groundwater and surface water appropriately and ensure that there is no uncontrolled run-off from the works, any material / waste stockpiles, and storage containers into adjacent surface watercourses; Implementation of appropriate and safe storage of fuel, oils and equipment during construction in accordance with the COSHH Regulations; Implementation of appropriate pollution incident control e.g. plant drip trays and spill kits; Implementation of an appropriate Materials Management Plan (MMP) to document how excavated materials will be managed; and Implementation of a contamination watching brief by suitably qualified and experienced personnel to be completed for the Scheme when excavating areas of potential contamination risk. If unidentified contamination is encountered, works to be suspended in the area and appropriate investigations and remediation to be discussed and agreed with stakeholders and completed in accordance with current best practice. Mitigation measures to be implemented as appropriate in the CEMP, Health and Safety File, Construction Phase Plan, RAMS and Emergency Response Plan.	contamination to be encountered during earthworks. There is the potential for introducing new sources of contamination (i.e. from spillages and leaks) during construction works.	event of encountering potential contamination.			
GC3	CH 10	To prevent adverse risks to on-site and off-site human health, controlled waters and ecological receptors during the operational phase associated with the potential introduction of new sources of contamination.	Principal Designer to incorporate mitigation/remedial measures in the design of the Scheme to reduce impacts from contamination as required. The Scheme will be operated in accordance with the relevant regulations and best practice guidance in applying Best Available Techniques and pollution prevention. Mitigation measures to be implemented as appropriate in the HEMP.	The operation of the Scheme could potentially introduce new sources of contamination. Spillages and leaks may occur from machinery, and below ground services and leakage from the reservoir could create additional potential pathways for the migration of potential contamination.	The 'as constructed' Scheme is in accordance with the submitted design and planning applications. Mitigation measures to be included within HEMP as appropriate. Risks to be managed as appropriate through the operational phase.	**O**	N	Initial: Date:
GC4	CH 10	To maximise the use of site-won materials in the construction of the Scheme and reduce amount of soils disposed off-site.	Principal Designer to seek as far as reasonably practicable, to reduce the amount of soil/materials excavated and/or of a hazardous nature, to re-use and recycle waste soils/materials on-site, where possible and to promote sustainable waste and material resource management. Principal Contractor to construct the Scheme in accordance with the submitted design and planning applications.	Waste soils/materials would be generated during construction through earthworks and foundation installation.	Requirement for re-use of site-won materials to be included in the detailed design. The 'as constructed' Scheme is in accordance with the submitted design and planning applications.	**P, C**	Y	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
GC5	CH 10	To effectively manage the re-use of waste soils/materials across the Scheme during construction.	Principal Contractor to prepare and implement an appropriate MMP in accordance with the CL:AIRE Definition of Waste: Development Industry Code of Practice and to promote sustainable waste and material resource management in line with the Government's waste hierarchy to allow the re-use of suitable soils during the construction works. Management measures to be implemented as appropriate in the CEMP.	Waste soils/materials would be generated during construction through earthworks and foundation installation.	Principal Contractor to prepare a MMP and a Verification Report to document the re-use of excavated materials. Soil management measures to be included within the CEMP.	**P, C**	Y	Initial: Date:
GC6	CH 10	To reduce soil erosion and compaction during construction works.	Principal Contractor to prepare a CEMP to include (but not limited to) the following mitigation measures: Minimising the area and duration of soil exposure and timely reinstatement of vegetation or hardstanding to prevent soil erosion and reduce temporary effects on soil compaction; Stockpile management (such as water spraying and avoiding over stockpiling to reduce compaction of soil and loss of integrity) to reduce soil erosion, windblown dust and surface water run-off; Implementation of appropriate dust suppression measures to prevent soil erosion; Implementation of working methods during earthworks to ensure that there is no uncontrolled run-off from the material / waste stockpiles; and Implementation of an appropriate MMP to document how excavated materials will be managed.	Earthworks will be required for the construction of the Scheme which may result in soil erosion and soil compaction.	Mitigation measures to be included within the CEMP and implemented during the construction works.	**P, C**	Y	Initial: Included in the Soils Management Plan and MMP Date:
GC7	CH 10	To reduce ground stability hazards and protect structures from compaction/ settlement and leakage.	Principal Designer to incorporate geotechnical mitigation/remedial measures in the design to reduce impacts from ground instability, soil compaction/settlement and leakage as required. Principal Contractor to construct the Scheme in accordance with the submitted design and planning applications. The Scheme will be operated in accordance with the relevant regulations and best practice guidance in applying Best Available Techniques.	Requirement for mitigation/remedial measures to be determined based on further assessment of ground conditions as part of detailed design.	Mitigation/remedial measures to be included in the detailed design. The 'as constructed' Scheme is in accordance with the submitted design and planning applications.	**A**	Y	Initial: Date:
GC8	CH10	To reduce impacts on mineral resources.	Principal Designer to prioritise the re-use of site-won mineral resources (topsoil and clay) within the Scheme. Principal Contractor to construct the Scheme in accordance with the submitted design and planning applications.	Minerals and Waste Consultation Areas for clay resources are present within the site. Clay is proposed to be excavated from borrow pits located within the footprint of the reservoir for re-use within the reservoir embankment.	Management measures to be included in the detailed design. The 'as constructed' Scheme is in accordance with the submitted design and planning applications.	**P, C**	Y	Initial: Date:
Landscape and Visual								

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
LV1	CH11	Limit damage to existing trees, shrubs, hedges and other significant vegetation to be retained.	An Arboricultural Impact Assessment (AIA) and Arboricultural Method Statement (AMS) will be required, this is to be updated /produced alongside the detailed design stages of The Scheme. It should define the requirements and methods to be used to ensure protection in the construction period. All tree root protection areas identified, shall be protected by protection fencing in accordance with BS 5837:2012.		Mitigation measures to be included in the CEMP. Protection to be reviewed and monitored on site by an Arboricultrist or ECoW.	**P, C**	Y	Initial: Date:
LV2	CH11	Limit damage to existing trees, shrubs, hedges and other significant vegetation to be retained.	The layout and construction of site compounds, soil storage areas, haul routes and any other construction site requirements to be designed and planned to ensure minimal impact on existing vegetation to be retained. Allow appropriate clearance from the edge of retained vegetation to minimise the requirements for cutting back or tree surgery. Requirements of which should be agreed with an Arboriculturist or ECoW.		Mitigation measures to be included in the CEMP.	**P, C**	Y	Initial: Date:
LV3	CH11	Limit damage to existing vegetation and grassland areas	A working area will be defined and agreed before construction commences. The area is to be marked on site by fencing with agreed access points. No works, vehicular access or storage will be permitted outside of the agreed working area. The working area to be agreed and monitored by the ECoW.		Mitigation measures to be included in the CEMP. Working area to be agreed preconstruction and monitored on site by the ECoW in the construction phase.	**P, C**	Y	Initial: Date:
LV4	CH11	Limit damage to existing trees, shrubs, hedges and other significant vegetation to be retained.	No vegetation or trees other than those indicated on the site clearance plans, should be removed or pruned with the prior agreement with the ECoW.		Mitigation measures to be included in the CEMP. Any vegetation to be removed to be agreed on site with ECoW.	**P, C**	Y	Initial: Date:
LV5	CH11	Reinstatement of landscape disturbed by the works.	A Soil Management Plan will be developed within the detailed design stages and its recommendations implemented on site. This should include methodology for stripping, storage, de-compacting, backfilling, re-spreading, cultivation, amelioration and reuse of all existing topsoil and subsoil. The plan should be monitored on site by a Soil Scientist to ensure ground preparation, soil handling and cultivation is correctly carried out and soils are not compacted		Mitigation measures to be included in the CEMP.	**P, C**	Y	Initial: Date:
LV6	CH11	Reinstatement of landscape disturbed by the works	Where removal of sections of scrub, hedgerows and trees are unavoidable, appropriate tree and hedge species will be replanted along the line of the existing hedge or within the area of scrub. These will be managed to restore the area to its pre-construction state.		Mitigation measures to be included in the CEMP.	**P, C**	N	Initial: Date: Comment: LV6 is not applicable to main reservoir works footprint
LV7	CH11	Implementation of mitigation planting and seeding.	Ensure mitigation planting is implemented to provide enhancement and replacement of landscape and habitats, as well as integrating The Scheme into its surroundings and providing screening functions. Planting		Mitigation measures to be included in the CEMP.	**P, C**	Y	Initial: Date:

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			plans to be prepared in coordination with the Biodiversity requirements. Implementation is to be monitored and inspected on site.					Comment: LV7 to be included in the detailed landscape design
LV8	CH11	Implementation of mitigation planting and seeding.	Mitigation planting and seeding is to be implemented in advance or as soon as is possible following completion of each area, section or phase of works. This is to ensure any temporary period of effects is reduced and mitigation planting has longer to establish before completion of the works. A strategy for advance and phased mitigation planting / landscape reinstatement should be developed in the detail design stage. The strategy should be reviewed within the construction period and updated regularly to take advantage of any areas where the programme of planting works can be brought forward.		Mitigation measures to be included in the CEMP. Strategy of advance planting to be agreed preconstruction and reviewed throughout the construction period.	**P, C**	Y	Initial: Date: Comment: LV8 to be included in the detailed landscape design
LV9	CH11	Successful establishment of mitigation planting and seeding.	A five-year aftercare period for all soft landscape is to be included within the construction contract to ensure successful establishment. Maintenance within the period to be carried out in accordance with an agreed management plan, maintenance specification and maintenance schedule, all to be developed and agreed in the detailed design stages. Records of all maintenance actions to be kept by the contractor /management company and provided for regular inspection when requested. Regular inspection and site monitoring to be undertaken throughout the period to ensure establishment targets are being achieved.		Mitigation measures to be included in the CEMP. Management Plan, maintenance specification and schedules to be agreed and put in place preconstruction. Regular inspection and site monitoring to be undertaken throughout the construction period.	**C, O**	N	Initial: Date: Comment: LV9 to be part of subsequent phase CEMP
LV10		Successful long-term management of landscape and habitats.	Management of the landscape and habitats during the years of operation (post five-year aftercare period) will be agreed in consultation with Portsmouth Water and captured in a long-term management plan. This will include measures to maintain and enhance the landscape and visual amenity of the area and to encourage ecological interest through habitat management (including the requirements set out in the Biodiversity section above)		Mitigation measures to be included in the CEMP. Long term management plan to be agreed and put in place.	**O**	N	Initial: Date: Comment: LV10 to be part of subsequent phase CEMP
Noise and Vibration								
NV1	CH12	To limit and control noise emissions during construction to avoid direct and indirect impacts on Community and ecological receptors.	Works will be carried out in accordance with the Best Practicable Means, as defined in Section 72 of the Control of Pollution Act 1974 and Section 79 of the Environment Protection Act 1990, and noise control measures, as suggested by BS 5228 Part 1 Only plant which complies with the relevant EU/UK noise limits applicable to that equipment or is in no way noisier than would be expected from the noise levels quoted in BS 5228: 2009+A1:2014 Part 1 will be used. This would include all vehicles and mechanical plant used for the purpose of the works to be fitted with effective exhaust silencers and maintained in good and efficient working order; All compressors and generators should be 'sound reduced' models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use, and all ancillary pneumatic percussive tools should be fitted with mufflers or suppressers of the type	To minimise the emission of noise from the site	Specification of plant noise level	**P, C**	Y	Initial: Date: Comment: refer to Noise and Vibration Management Plan (doc no. HTR-FUW-P2-RE-RM-W-0017)

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			recommended by the manufacturers and should be kept in a good state of repair; Machines in intermittent use should be shut down in the intervening periods between work, or where this is impracticable, throttled down to a minimum; Where practicable, plant with directional noise characteristics should be positioned so as to minimise noise at adjacent properties; The works covered by this application will be planned so as to ensure that as much work as practicable (taking into account the needs to minimise disruption to trains when the pipeline crosses the rail line and ensuring the safety of the public and workforce) takes place during normal daytime working hours; Ensuring that all staff and operatives are briefed on the requirement to minimise nuisance from site activities, via tool box talks etc.; Regular plant maintenance; all plant and equipment should be examined daily, for defects prior to the start of works and under no circumstances should defective plant be used; Avoid any reversing on site as far as reasonably practicable – if reversing is required, utilise broadband low impact reversing alarms or banksmen.					
NV2	CH12	To limit and control noise emissions during construction to avoid direct and indirect impacts on Community and ecological receptors.	Use of temporary noise screens or partial enclosures around particularly noisy activities, for example pneumatic breakers used in close proximity to dwellings	Current assessment shows potential for significant night time impacts at receptors on Swanmore Road.	Specification of noise barriers and input to CEMP	**P, C**	Y	Initial: Date: Comment: no night time works, therefore no temporary noise screens required.
NV3	CH12	Avoid night-time impacts	Avoid night-time works where possible, particularly in proximity to receptors on Swanmore Road. Where night-time works cannot be avoided, acoustic screens will be erected to block line-of-sight between the plant and receptor to minimise impacts	Current assessment shows potential for significant night time impacts at receptors on Swanmore Road.	Input to CEMP	**P, C**	Y	Initial: Date: Comment: no night time works, therefore no temporary noise screens required.
NV4	CH12	Reassess Noise and Vibration Impacts	Reassess noise and vibration impacts once method of working, plant and programme have been agreed	Current assessment shows potential for significant impacts	New assessment	**P**	Y	Initial: Date: Comment: The completed assessment in the Noise and Vibration Management Plan (doc no. HTR-FUW-P2-RE-RM-W-0017) shows no potential for significant noise impacts
NV5	CH12	Noise and vibration monitoring	Undertake targeted monitoring of noise and vibration levels when works are in close proximity to sensitive receptors. Frequency and locations to be agreed with local authority	Ensure works do not cause significant noise or vibration impacts	Report measured levels to the local authority within an agreed timeframe	**C**	Y	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
NV6	CH12	To limit and control noise emissions during construction to avoid direct and indirect impacts on Community and ecological receptors.	Agree thresholds for noise levels and durations of works with the local authority above which noise insulation or temporary rehousing will be offered to affected residents	Current assessment shows potential for significant night time impacts at receptors on Swanmore Road.	Input to CEMP	**P**	Y	Initial: Date: Comment: The completed assessment in the Noise and Vibration Management Plan (doc no. HTR-FUW-P2-RE-RM-W-0017) shows no potential for significant noise impacts
Traffic and transport								
TT1	CH13	Minimise impact of HGV traffic on highway network.	Prepare a Construction Traffic Management Plan to manage the impact of HGV traffic on the highway network.	Impacts on local road network from HGV traffic.	New report to be included within CEMP	**P**	Y	Initial: Date: Comment: CTMP to be prepared for submission to LPA
TT2	CH13	Minimise impact of construction traffic during typical network peak hours	Manage hours of working to avoid the import or export of goods and materials to avoid network peak hours.	Impacts on local road network from HGV traffic.	To be included within CTMP	**P, C**	Y	Initial: Date: Comment: CTMP to be prepared for submission to LPA
TT3	CH13	Minimise use of construction routes on local roads.	Utilise the Strategic Road Network where possible for the import and export of goods and materials.	Impacts on local road network from HGV traffic.	To be included within CTMP	**P, C**	Y	Initial: Date: Comment: CTMP to be prepared for submission to LPA
TT4	CH13	Minimise use of construction routes on local roads.	Utilise the northern access where practicable for the import and export of goods and materials.	Impacts on local road network from HGV traffic.	To be included within CTMP	**P, C**	Y	Initial: Date: Comment: CTMP to be prepared for submission to LPA
TT5	CH13	Minimise the impact of PRoW closure / diversion.	Develop alternative routeing strategy for PRoW	There is suitable mitigation available that will prevent significant negative effects relating to closure of the PRoW.	To be included within CTMP	**P, C**	Y	Initial: Date:
TT6	CH13	Minimise staff car trips	Develop a construction travel plan to maximise opportunities for staff travel to and from the site using modes other than the private car.	To minimise proportion of car trips to and from the reservoir and access road site.	To be included within CTMP	**P, C**	Y	Initial: Date:
TT9	CH13	Maximise opportunities for all modes of travel.	Develop an operational travel plan to maximise opportunities for staff and visitors to travel to and from the site using modes other than the private car.	It is assumed that maximising opportunities for travel other than the private car would be to the benefit of users of the reservoir and the local community.	New report to be developed during operation of the reservoir site.	**O**		Initial: Date:

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Material resources and waste								
MRW1	CH14	To maximise the use of site-won materials in construction.	Design Team to continue to develop the design considering resource efficiency and based on the majority of earthworks materials being sourced from the reservoir site. Principal Contractor to implement the Scheme as set out in the design and planning applications.	The earthworks materials required for construction are available within the Scheme's boundary. The assessment in the Environmental Statement assumes earthworks materials will be sourced from the reservoir site for use in construction of the embankments, wetland retention structure and clay blanket.	Statement from Design Team stating quantity of earthworks materials required to construct the Scheme and quantity of earthworks materials sourced from site-won materials. The Scheme 'as constructed' is in accordance with the submitted design and planning applications.	**P, C**	Y	Initial: Date:
MRW2	CH14	To manage wastes effectively in accordance with the waste hierarchy and waste regulations.	Principal Contractor to produce a Site Waste Management Plan (SWMP) with planned waste management for forecast wastes and monitoring of actual waste management during construction including the waste codes, quantities and destination of wastes removed from the site.	N/A	The Principal Contractor's SWMP will act as the record of waste management and can be used for reporting to the Local Authority, as required. A record of Waste Transfer Notes (WTNs) and Hazardous Waste Consignment Notes (HWCNs) will also need to be kept for a minimum of two and three years respectively.	**P, C**	Y	Initial: Date:
MRW3	CH14	To effectively reuse excavated materials across the Scheme.	Principal Contractor to consult with the Environment Agency regarding proposed approach to reuse of excavated materials, as set out in the Materials Management Strategy (ref. HTR-ATK-ZZ-ZZ-RP-Z-0139), and produce a Materials Management Plan (MMP) in accordance with CL:AIRE Definition of Waste: Development Industry Code of Practice.	This is the preferred approach for ruse of excavated materials on-site. Subject to agreement from Environment Agency and Local Authority on approach to materials management.	Reporting requirements set out in CL:AIRE Definition of Waste: Development Industry Code of Practice. This includes the requirement to produce a Verification Report following use of excavated materials.	**P, C**	Y	Initial: Date: Comment: see MMP
MRW4	CH14	To prevent generation of wastes through earthworks at the	Excavated materials from the reservoir site and access road(s) that are chemically and geotechnically suitable for use will be reused on-site—preventing the generation of excavation wastes that need removal and management off-site.	The excavation of topsoil, subsoil and naturally occurring geology at the	Reuse of excavation materials on-site will be recorded in the MMP. Any excavated	**P, C**	Y	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
		reservoir site and access road(s).		reservoir site and access road(s) will generate materials that need to be planned for use in the detailed design and effectively managed during construction to prevent the generation of significant quantities of waste. An MMP will be required for reuse of these materials on-site.	materials that become waste and are removed from site will be recorded in the SWMP.			
MRW5	CH14	To minimise construction and demolition waste disposed of at landfill.	Aim to recover 95% by weight of non-hazardous construction and demolition waste in accordance with the Hampshire Minerals and Waste Plan 2013. This action will be monitored through the SWMP.	Target does not include excavation materials (i.e. 17 05 04) or hazardous wastes.	Performance and reporting will be through the Principal Contractor's SWMP.	**C**	Y	Initial: Date:
MRW6	CH14	To ensure vegetation and wood and timber arising from construction is managed effectively.	Principal Contractor to develop a strategy for managing vegetation, wood and timber in accordance with the waste hierarchy. The strategy will need to identify how timber will be graded, processed and stored to maintain its quality. Opportunities to reuse the timber within the Scheme or interested third parties will need to be explored.	Principal Contractor is responsible for management of stripped vegetation and wood and timber arising from unavoidable woodland loss.	Management of wastes will be reported through the Principal Contractor's SWMP.	**P, C**	Y	Initial: Date: Comment: the management of wood and timber is being undertaken by TilHill.
Water environment								
W1	CH9, CH15	To protect watercourses and groundwater from construction related pollution risk	A CEMP will be developed which will, as a minimum, include the following pollution prevention measures: An agreed process for managing the volume and quality of discharge of water for Construction compounds (including CSS) and other areas of hard standing and haulage roads, which will discharge into the site water management systems via shut-off sluice valves which are normally in the closed position and only opened if surface water run-off is of a desired quality. The volume and quality maintenance regime will include an agreed process for monitoring and managed discharge of water from each compound via a sluice valve. Detail on discharge water quality standards to be attained and suitable technologies (e.g. settlement tanks, silt busters, etc.) which will be used to remove pollutants such as fine sediments (silts), debris and other pollutants during the dewatering process. The discharge methodology will be agreed with the EA where discharge consents are required. Treatment of arisings is required to maintain appropriate quality using treatment plant prior to discharge to the watercourse. Flows from the construction site should not increase flood risk or cause watercourse scouring. Up to 1:30 rainfall scenario will be attenuated.	Contractual responsibilities between Portsmouth Water and PC. Pollution prevention measures will be detailed in the CEMP. The PC will have access to relevant guidance material.	No reportable incidents of construction related watercourse pollution above thresholds set within the water quality monitoring strategy.	**P, C**	Y	Initial: refer to Water Quality Management Plan Date: Oct 2023

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
			Environmental monitoring to demonstrate compliance (see W3 below). All oil or chemical storage areas should be bunded and lined in order to contain pollutants in the event of leakage. There should be no storage of materials (or chemicals/fuels) within 8m of any watercourse. All machines shall use oil trays when parked on site; all fuel storage tanks shall be adequately bunded to prevent pollution of the river. All reasonable requirements specified by the Environment Agency shall be in place to prevent fuel, lubricants, or any other fluids or materials entering the watercourse. Procedures to deal with accidental leakages or spillages of hydrocarbons and oils, or accidental release of hazardous substances during construction works. Debris for any polluting substances that are being brought on site and used as part of the construction process. Measures to protect the aquatic ecology are set out in B14 and B20 above. The PC will adopt best practice to avoid pollution of watercourses. This is to include, but is not limited to, adherence to Guidelines for Pollution Prevention (GPP), latest Environment Agency pollution guidance available from data.gov, and Construction Industry Research and Information Associated (CIRIA) guidance on the control of water pollution from construction sites.					
W2	CH15	To protect watercourses and groundwater from construction related pollution risk	A Drainage Management Plan will be developed, which will include, as a minimum the following detail on drainage design and management: • Design standards - any areas of surface or foul water drainage affected by the works should be identified and each section of affected drainage should be briefly described, and a proposed solution provided. • Pollution control/interception - any interceptor solutions should be identified on discipline specific drawings and reviewed during the relevant design stages. For example, any new car parks and associated access roads or haulage routes will incorporate treatment and are transferred to site drainage system. • Outfalls - known outfalls should be identified and where possible any drainage should tie in with the existing outfalls. Where no existing drainage outfalls are present/known, SuDS principles should be considered to ensure that the discharge rate and volume is suitable. The designing of new drainage catchments should include consideration of any potential attenuation sites. High-level drainage catchment assessments should be undertaken to determine the potential attenuation requirements. It is assumed that drainage scenarios which replicate the current un-attenuated drainage system will remain with no requirement to provide additional water storage. • Earthworks - a review of existing earthworks and drainage provision should be undertaken to assess the required	Contractual responsibilities between Portsmouth Water and PC. Pollution prevention measures will be detailed in the CEMP. The PC will have access to relevant guidance material.	No reportable incidents of construction related watercourse pollution above thresholds set within the water quality monitoring strategy.	**P, C**	Y	Initial: Date: Comment: pollution prevention measures are contained in the Water Quality Management Plan (doc no. HTR-FUW-P2-RE-RP-EN-0014)

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
			interventions to be developed at subsequent design stages. Areas are to be identified which currently do not have any drainage but is required. • Access Roads and Haulage Routes –the development of drainage from the access roads and haulage routes including the modification/re-alignment, connection into or new access road / haulage road infrastructure will be included. Construction mitigation is likely to include but not be limited to measures within the PPGs, e.g. to attenuate and treat polluted runoff. Haul roads will be unpaved and covered in hard core or gravel. Surface water run-off will be collected and treated prior to discharge. • Third Party Land - drainage interventions to support the reservoir may affect third party land. Assessment of drainage interventions should account for the following scenarios but not limited to: third party land drainage which currently affects the infrastructure; drainage interventions required for the Scheme which may affect third party land; and, outfall required for drainage which is located within third party land. Stakeholder engagement and consultation should be undertaken at subsequent design stages when required drainage proposals are further defined. Continued stakeholder engagement will be necessary to obtain consents. • Surface Water Drains – With particular relevance for the pipeline corridor, detail on the surface water networks in the vicinity of the pipeline construction areas which may transfer pollutants to the nearby river. • Ecology – Key ecological features to be considered as part of the construction work, including where EcoW may be required. • Foul – all water generated on-site during construction (CCS) and operation (Visitor Centre, Control House) will be transferred to foul.					
W3	CH15	To protect watercourses and groundwater from construction related pollution risk	A water quality monitoring strategy will be included in the CEMP, discussed and agreed with the Environment Agency. This will make provision for parameters monitored, sample locations frequency and duration of monitoring. This will include who should undertake sampling, any requirements for visual checks, inclusion of additional monitoring points as part of baseline monitoring, sampling/ laboratory analysis accreditation requirements. The strategy should make provision for continuous flow and water quality monitoring in downstream watercourses as well as visual daily monitoring will be undertaken to ensure that the discharge does not result in any scouring of the beds and banks or churn up of silts from the riverbed.	Contractual responsibilities between Portsmouth Water and PC. The strategy will be detailed in the CEMP. The PC will have access to relevant guidance material.	No reportable incidents of construction related watercourse pollution above thresholds set within the water quality monitoring strategy.	**P, C**	Y	Initial: Date Comment: contained in the Water Quality Management Plan (doc no. HTR-FUW-P2-RE-RP-EN-0014)
W4	CH15	To protect aquatic ecology in Riders Lane Stream and Hermitage Stream	Construction flow management measures around the dewatering of the area within the footprint of the reservoir to ensure the waters from the headwaters are captured and diverted around the site and fed into the top of the Riders Lane Stream downstream of the footprint with proper	Contractual responsibilities between Portsmouth Water and PC.	No reportable incidents or fish kills.	**P, C**	Y	Initial: Date: Comment: contained in the Water Quality Management

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			attenuation and flow management in place, notably to not allow the stream to dry up; and prevent peak flows.	Pollution prevention measures will be detailed in the CEMP. The PC will have access to relevant guidance material.				Plan (doc no. HTR-FUW-P2-RE-RP-EN-0014)
W5	CH15	To protect the headwater stream ecology of Park Lane Stream	There will be no water discharges into the Park Lane Stream catchment. All water will be channelled to the head of Riders Lane Stream where flow and quality will be controlled.	Contractual responsibilities between Portsmouth Water and PC. Pollution prevention measures will be detailed in the CEMP. The PC will have access to relevant guidance material.	No reportable incidents or fish kills.	**P, C**	Y	Initial: Date:
W6	CH15	To protect the ecology for headwater streams flowing into the River Lavant	Habitats in new toe drains and ditch diversions (for watercourses draining to the River Lavant) will be improved to increase their ecological potential to provide habitats to a wider range of species than they are expected to contain at the moment.	Contractual responsibilities between Portsmouth Water and PC. Detail will be provided in the Outline Biodiversity Mitigation and Compensation Strategy.	Agreement from the Environment Agency	**P, C**	Y	Initial: Date:
Effects on climate								
EC1	CH16	To reduce greenhouse gas emissions associated with the production and transportation of materials	Materials will be sourced onsite as far as possible. Where this is not possible, local materials will be used. The overall volumes of material needed will be minimised through lean design and 'soft' engineering approaches.		Statement from Design Team stating quantity of materials required to construct the Scheme and quantity of materials sourced from site-won materials. The Scheme 'as constructed' is in accordance with the submitted design and planning applications.	**P, C**	Y	Initial: Date:
EC2	CH16	To reduce greenhouse gas emissions associated with operation of the reservoir	Passive level controls will be used where possible, and electricity consumption in the control house will be minimised by provision of water and dissolved oxygen monitoring.		Implementation of passive level controls and monitoring schedule.	**A**	N	Initial: Date:

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EC3	CH16	To reduce greenhouse gas emissions associated with operation of the visitor centre, educational hide and public realm.	The visitor centre will achieve net zero carbon in operation, using the London Energy Transformation Initiative (LETI) Climate Emergency Design Guide approach. A living roof will be used to sequester carbon. Sustainable transport options will be promoted through provision of footpaths and cycle paths.		Visitor centre has been assessed to be net zero carbon in operation	**A**	N	Initial: Date:
Vulnerability to climate change								
VCC1	CH17	Maintain site access to minimise delays to construction schedule caused by extreme weather	Maintain multiple access routes to working areas where possible.		Maintenance and inspection schedule	**C**	Y	Initial: Date:
VCC2	CH17	Live water quality monitoring to initiate reservoir mixing system to achieve efficient thermal destratification	Monitor reservoir temperature at various depths to establish the temperature profile and identify the onset of thermal stratification. This system will be complemented by dissolved oxygen monitoring at depth.		Alerts system in line with best practice.	**O**	N	Initial: Date:
VCC3	CH17	Maintain high quality treated water.	Regular abstraction water quality monitoring.		Alerts system in line with best practice.	**O**	N	Initial: Date:
VCC4	CH17	Avoid disruption to water treatment at Farlington WTW caused by failures in supply chain, e.g. due to extreme weather preventing deliveries.	Maintain stores of treatment chemicals at Farlington.		Maintenance and inspection schedule	**O**	N	Initial: Date:
VCC5	CH17	Confirmation of embankment stability under climate change scenarios that require more regular emergency draw downs.	Detailed study of the effects on embankment stability of rapid drawdown of the reservoir (e.g. in emergency drawdown) to be addressed with further analysis and presented in the Reservoir Design Report (noting that draw downs could become more common with climate change).		Undertake study.	**P**	N	Initial: Date:
VCC6	CH17	Ensure safe reservoir operation during and after extreme weather.	Havant Thicket Reservoir will be operated and managed by Portsmouth Water in line with the requirements of the Reservoirs Act 1975.		Inspections in accordance with the Reservoir Act 1975 requirements.	**O**	N	Initial: Date:
VCC7	CH17	Avoid climate change impacts on habitats in the wetland.	Active management of water levels in the wetland to improve its resilience to climate change.		Maintenance and inspection schedule of wetland	**O**	N	Initial: Date:
VCC8	CH17	Reduce fire risk during hot dry weather	Special site management measures during extreme hot weather to reduce fire risk – for example a no BBQ policy.		Maintenance and inspection schedule	**O**	N	Initial: Date:

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VCC9	CH17	Maintain safe reservoir operation during extreme weather	Detailed planning for power outages to the control room.		Planning schedule to be implemented as standard process.	**O**	N	Initial: Date:
VCC10	CH17	Avoid and reduce impacts from flooding brought about by extreme weather or during wetter winters.	Follow actions and commitments set out in FRA to avoid flooding brought about by extreme rain or during wetter winters (to be implemented by the drainage strategy plan, construction environment management plan and flood risk activity permits.).		Implementation of the drainage strategy plan, construction environment management plan and flood risk activity permits	**A**	Y	Initial: Date:
Population and human health								
PHH1	CH18	To maintain active travel and safe access to open space, to opportunities for recreation & leisure and to work & training	Retain existing pedestrian accesses where possible. Maintain safe access through traffic marshalling, traffic management and use of fencing to separate the public from construction activity and traffic.	N/A	No harm to anyone. Daily site audits by a representative from the Principal Contractor. Measures to be included within CTMP to be agreed by LPA.	**C**	Y	
PHH2	CH18	To minimise the adverse effect on active travel and on access to open space, access to opportunities for recreation & leisure and access to work & training.	Keep the public informed on project progress and on the timing and extent of road/footpath/PROW/amenity spaces closures/diversions	N/A	Measures to be included within CTMP to be agreed by LPA	**C**	Y	Initial: Date:
PHH3	CH18	Minimise the adverse effect from noise pollution and vibration	Keep the public and residents fully informed of the scale, nature and timing of the works	N/A	No noise complaints. Mitigation to be included in CEMP to be approved by LPA	**C**		Initial: Date:
PHH4	CH18	To minimise adverse effects from air pollution	Include electric vehicle charging points within the proposed car park	N/A	Approval from LPA on the detailed design. The 'as constructed' Scheme is in accordance with approved design.	**C**		Initial: Date:
PHH5	CH18	To maintain visitor safety	Delineate and/or provide other measures to slow cyclists down to avoid potential conflict points with pedestrians.	There is the potential for collisions at conflict points in the current design	No harm to anyone. Approval from LPA on the detailed design. The 'as constructed' Scheme	**C**		Initial: Date:

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					is in accordance with approved design.			
PHH6	CH18	To maintain visitor safety	Reduce the risk of drowning by following Environment Agency guidance and adopting best practice from similar assets including education in local schools on risks of swimming in deep open water and provision of appropriate signage and public safety measures e.g. life rings	N/A	No harm to anyone. Approval from LPA and Environment Agency on the detailed design. The 'as constructed' Scheme is in accordance with the approved design.	**C, O**		Initial: Date:
PHH7	CH18	To minimise adverse effects on active travel	Introduce additional traffic calming to discourage visitors and operational traffic from using the southern access route to enter the reservoir site	There is the potential for traffic using the southern access route to have an unacceptable effect on active travel. The local highway authority agrees to the mitigation	Approval from LPA on the detailed design. The 'as constructed' Scheme is in accordance with the approved design.	**C**		Initial: Date:
PHH8	CH18	To enhance access to work and training for local communities, the unemployed and low-income groups.	Identify opportunities to provide work and training	Portsmouth Water will engage with local agencies to maximise potential work and training opportunities during construction and operation of the Scheme.	Development is implemented in accordance with a scheme approved by the LPA.	**C, O**		Initial: Date:
Major Accidents and Disasters								
AD1	**CH20**	To reduce the risk of instability of existing ground due to existing shear planes in clay under proposed embankment	Further ground investigation to confirm depth of shear planes.	The risk will mitigated in the design by digging out and recompacting the top 3m of ground below the footprint of the embankment.	During detailed design, the risk of instability of existing ground reduced by output of further Ground Investigation.	**P**	Y	Initial: Date:
AD2	**CH20**	To understand the potential for natural cavities such as swallow holes and sinkholes to be present beneath the Scheme.	The risk will be further mitigated by undertaking a geophysical survey of the site.	Risk mitigated by review of the presence of sinkholes within aerial photography and geomorphological field mapping. No	During detailed design, the geophysical survey of the site will inform the understanding of potential risk for natural cavities.	**P**	Y	Initial: Date:

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				sinkholes are recorded within the reservoir site and pipeline corridor.				
AD3	**CH20**	To reduce the risk of fluvial flooding from streams flowing into reservoir and rainwater directly falling on the reservoir.	Maintenance and regular inspection of overflow spillway will be included in operating procedures.	Flood storage capacity in the reservoir has been assessed to contain flood inflows during operation below the embankment crest in an extreme event ie probable maximum flood, with an overflow spillway designed to pass excess floodwater The construction of the new reservoir will actually reduce the existing risk of flooding as the new reservoir will act to store floodwater from upstream.	No fluvial flooding of properties. Continual maintenance records of spillway.	**O**	N	Initial: Date:
AD4	**CH20**	To mitigate the potential for extreme rainfall to result in a rise in groundwater levels leading to increased spring flows.	Water invasion during borrow pit excavation to be managed by appointed contractor. Water from incoming streams diverted and pumped elsewhere, up to a 1 in 30 storm event – contractor to include in design and construction methodology	Reservoir design includes lining and cut-offs to virtually eliminate seepage loss from reservoir when full.	No flooding Production and adherence to water management plans during construction	**C, O**	Y	Initial: Date:
AD5	**CH20**	To reduce potential for the chalk aquifer and/or the Havant and Bedhampton Springs becoming polluted and drinking water quality compromised.	Contractors method statement in accordance with EA pollution prevention guidance	This risk will be mitigated by the contractor during construction. Precautions to be included within contractor's method of working to minimise risk of pollution following EA guidance on pollution prevention.	No pollution of the chalk aquifer and/or Havant and Bedhampton Springs due to successful implementation of contractor management plans	**C**	Y	Initial: Date:
AD6	**CH20**	To prevent major release of	Portsmouth Water Havant Thicket Reservoir Water Safety Plan and potential catchment management measures to be implemented and adhered to.	Volatile Organic Compound (VOC) monitoring will be	Major release of contamination prevented through	**O**	N	Initial: Date:

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		contamination into the reservoir		provided at the abstraction intake to monitor organic pollutants. Automatic monitoring of other water quality parameters will also be included at the WTW including pH, ammonia and turbidity to ensure no pollution reaches the WTW. Granular Activated Carbon (GAC) will also be included within the WTW filters. Physical barriers will also be include eg reinforced concrete kerbing to control access.	production of Water Safety Plan			
AD7	**CH20**	To reduce potential of erosion causing instability of embankment due to cyclonic storms and heavy rain causing damage to infrastructure.	Regular inspections of embankment in operation.	Rock armour designed to protect inside face slope is installed as per design.	No erosion or instability of the embankment caused by storms	**O**	N	Initial: Date:
AD8	**CH20**	To reduce risk of flooding of properties due to thunderstorms.	Maintenance and regular inspection of overflow spillway will be included in operating procedures.	Flood storage capacity in the reservoir has been assessed to contain flood inflows below the embankment crest, with an overflow spillway designed to pass excess floodwater. Flood risk will be reduced due to storage capacity of reservoir.	No flooding of properties due to successful maintenance and inspections of spillway.	**O**	N	Initial: Date:
AD9	**CH20**	To reduce erosion causing instability of embankment from high winds causing waves.	Regular inspections of embankment in operation.	Rock armour designed to protect inside face slope to accommodate 1:200	No erosion or instability of the embankment caused by high winds	**O**	N	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
				chance event is installed.				
AD10	**CH20**	To reduce risk of road traffic accidents due to construction traffic.	Traffic Management Plan to be implemented by the appointed contractor.	Construction traffic to only use specific access routes at specific times.	No road traffic accidents or casualties and agreement and implementation of traffic management plan	**C**	N	Initial: Date:
AD11	**CH20**	To prevent aircraft crashing into reservoir/embankment	Ensuring that OS and other publicly available maps are updated to include the reservoir surface area, so that it does not appear as an open field on pilot's navigational systems.	Risk to the reservoir integrity is mitigated with erosion protection on the embankment slopes for a wave from a crashing aircraft. Risk to water quality is mitigated by the water quality telemetry systems providing alarms if contaminants from an aircraft are picked up.	No casualties, damage to property or flooding.	**O**	N	Initial: Date:
AD12	**CH20**	To prevent potential loss of life and property damage from breach of the embankment.	If imminent breach is suspected, the Emergency Drawdown strategy will be enacted, lowering the reservoir level quickly, without causing flooding, and thus reducing the risk and consequence of breach. Drawdown will be able to start in a few hours and the capacity of the drawdown pipes is designed to achieve reduction in reservoir water level by a third in 6 days (to meet EA guideline requirements).	The reservoir embankment will be inspected regularly for any indication of structural weakening or of potential to breach. Pipeline has been checked to provide capacity for emergency drawdown discharge in the event of instability in the embankment or other dam safety incident. Drainage blanket added to inside face of embankment to reduce instability in rapid drawdown condition.	Implementation of Emergency Drawdown Strategy. No breach of the embankment and therefore no loss of life or damage to property.	**O**	N	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
				Instrumentation linked to telemetry will be installed to monitor embankment movement, seepage, pore water pressures to give alarm of rapid changes.				
AD13	**CH20**	To reduce risk of damage to control house from building fire or failure.	Daily surveillance of reservoir, and alarms connected to PW system	Control house to be built non-flammable materials, reducing risk of fire damage to pipeline and control valves inside building. The balustrades of the visitor centre are to be metal fins and the proposed bridge deck is currently being proposed as timber. The timber would be treated with a flame retardant.	Implementation of inspection and surveillance schedule.	**O**	N	Initial: Date:
AD14	**CH20**	To prevent risk of acts of terrorism leading to release of water	Daily surveillance of reservoir, and alarms connected to Portsmouth Water system. Use of CCTV to be determined at detailed design.	The consequence of reservoir breach is assessed and understood through the use of a hydraulic model in the Flood Risk Assessment. The flood outlines will be used before commissioning in an Emergency Response Plan to prioritise areas and routes for evacuation, although it is acknowledged that there is unlikely to be significant warning in such an event.	Implementation of inspection and surveillance schedule.	**O**	N	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
AD15	**CH20**	To prevent risk of potential cyber attacks	Appointed contractor is required to undertake detailed design of all new and modified systems in line with cyber security standards**.**	Design includes the selection of cyber secure systems, which will be integrated with existing Portsmouth Water communications systems and will monitor the lines for cyber issues.	Detailed design of systems in line with cyber security standards.	**C, O**	N	Initial: Date:
AD16	**CH20**	To prevent vandalism (fires)	Daily surveillance of reservoir, and alarms connected to PW system. There will be staff training and awareness of these incidents and security systems, such as public address, to aid to the incident.	Control house to be built from concrete with cladding to be not flammable, reducing risk of fire damage to pipes and control valves inside building. Signed and designated routes for the public to escape from the incident area.	Implementation of inspection and surveillance schedule. Staff training programme.	**C, O**	N	Initial: Date:
AD17	**CH20**	To prevent vandalism (water)	Daily surveillance of reservoir, and alarms to be set within water quality monitoring system.	Intakes from reservoir will be remote from the embankment crest so any pollutants could not be dropped directly into the intake system to the supply pipeline.	Implementation of inspection and surveillance schedule.	**O**	N	Initial: Date:
AD18	**CH20**	To prevent criminal damage	Daily inspection and alarms to be set for sudden changes in water level.	Reinforcement in two lines of concrete kerbs / bedding to make it difficult to dig across the crest.	Implementation of inspection and surveillance schedule.	**O**	N	Initial: Date:
AD20	**CH20**	To prevent anti-scoial behaviour	Appropriate physical protection that include well designed security features. Special consideration will be given to areas where the human activity is concentrated in order to reduce risk of crime and built a sense of sustainable environment and provide safety and security at all times.	Access routes to be well defined and promote a sense of ownership, respect and territorial responsibility and community. All critical control equipment will be	Detailed design of physical protection and security features.	**O**	N	Initial: Date:

Ref	ES ref	Objective	Actions/commitments (incl. specific location and any monitoring required)	Assumptions (on which the action is based)	Achievement criteria and reporting requirements	When*[11] P,C.O A - All	In Scope for CEMP (Y/N)	Completion/ Comment
				designed to be secured.				

Appendix E Environmental Aspects and Impacts Register

Future Water has established and maintains a procedure to identify the environmental aspects of their activities. The Register identifies potential environmental impacts arising from the construction works and the environmental control measures that will be adopted to eliminate or minimise potential impacts.

The Scheme Environmental Aspects and Impacts Register is a live document. As such, the Register will be reviewed and updated where relevant, to manage environmental risks throughout the duration of the Scheme.

Future Water MJJV Ltd

HEALTH & SAFETY
ENVIRONMENT
QUALITY

Form No:	EN-f-024	Title:	Environmental Aspects and Impacts Risks Assessment - INTRODUCTION			
Template Issue No:	V1.2	Issue Date:	Jan-23	Approved by:	Ellis Ashton	Tab 2 of 10

Project Name:	Havant Thicket Reservoir	**Project Number:**	HTR-FUW-ZZ-ZZ-RE-W-0002
Activity:	Main Reservoir Works	**Author/Responsible Person:**	AH
Date:	07/11/2023	**Signature:**	A G Hepworth

Within the site/project team, the following environmental awareness/competencies are present:		
Name:	**Role:**	**Environmental Qualification**
Andrew Hepworth	Environmental Manager	BA (Hons), MIEnvSc
John Condron	Ecological Clerk of Works	BSc (Hons), MSc, MCIEEM, MBES
Sam Higgitt	Site Environmental Manager	BSc, CEEQUAL Assessor
Rosie Wynn	Assistant Site Environmental Manager	BSc, MSc

Revision No.	Review Comments:	Reviewed by:	Date:
2	Biodiversity section of MRW Construction updated. Doc no. revised to HTR-FUW-ZZ-ZZ-RE-W-0	A Hepworth	07/11/2023
3	Updates made following review meeting with Portsmouth Water on 20.11.23	A Hepworth	20/11/2023

INTRODUCTION

The Risks tabs on this spreadsheet capture the Environmental Aspects of all activities, products and services, that we control and influence throughout stages of the Project, from Planning through to Maintenance. They also capture the subsequent Environmental Impacts and consider the process from a Life Cycle perspective.

In considering the Environmental Aspects, we have taken into account:

a) Planned or new developments, activities & services
b) Foreseeable abnormal and emergency situations.

Using compliance obligation as the criteria, those Aspects that have a potential Significant Impact are highlighted on the Risks tabs (LAND/WATER/ECOLOGY/ WASTE/NUISANCE/AIR QUALITY/HERITAGE). Significant Impacts are drawn from:

WW-f-008 - Project Risk Register
WW-f-008 is formed from Pre-Construction Information and the tender enquiry stage (by the Design & Construction Management Team). The Life Cycle (below) shows the categorised stages of our Projects, into which the Aspects highlighted in the Risks tabs of this document have been documented.

Life Cycle stages of our Projects and permanent locations, which have their own Environmental Aspects & Impacts:

Planning - The planning of project scope, personnel and requirements to achieve the aims of the project, which feeds into the design.

Design - Designing to incorporate disassembly to increase reuse of resources as well as designing out waste, Quantity Surveying to determine required procurement quantities, and ensuring environmental aspects are planned into the design for later project stages.

Procurement & Acquisition of Raw Materials - Considering procurement of locally-sourced sustainable product suppliers and subcontractors with verified status; length of supply chain and associated environmental impact; ordering calculated quantities to minimise supply chain waste; and considering materials, plant and vehicles of a suitable quality to increase lifetime and minimise maintenance intervals.

Construction & Production - Use of plant, vehicles (for transportation and delivery), equipment and materials in a sustainable and safe manner which minimises pollution risk and takes into account end-of-life to create a product or provide a service, reduction in energy consumption during the construction phase through minimising delivery and workforce travel mileage by adhering to the aforementioned procurement strategy, protection and preservation of ecological and cultural assets, as well as minimisation of statutory nuisance impacts to identified receptors.

Operation & Use - Use of the design and procurement stages to construct an operationally efficient project, promoting sustainable running and use of the company's permanent office spaces, as well as considering end of life treatment and disposal of wastes.

Maintenance - Planning and undertaking maintenance to ensure long term environmental aspects are managed to minimise impacts to the environment during construction from plant and vehicles and the site, post-construction.

	A	B	C	D
1	Environmental Aspects and Impacts Risks Assessment - Havant Thicket Reservoir Main Reservoir Works			
3	**Associated project lifecycle stage**	**Proposed Mitigation Measures**	**Supporting documentation**	**Relevant Legislation/Guidance**
4				
5				
6				
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8				
9				
10	**Environment and Sustainability through Design**			
11	The Scheme will enable additional water to be supplied to Southern Water. Complementary to its infrastructure resilience function, the Scheme will provide a new recreational facility/resource in an area which the community can access on foot, by bike, or through existing bus routes. It offers further opportunities to improve the wider footpath, cycleway and bridleway networks in the area.	High-level environmental design principles embedded into the design of the Scheme include, but are not limited to, the following: Support the UK's Net Zero Carbon target by minimising where practical greenhouse gas emissions at all stages of the infrastructure lifecycle, and maximising opportunities for greenhouse gas removals through sequestration by vegetation and renewable energy generation; Design infrastructure which is resilient to expected climate change and extreme weather events; Maintain and integrate with the rural landscape character and woodland setting, through the design layout and material selection process; Maximise opportunities for biodiversity in the design of the landscape and buildings and minimise and mitigate any conflict with wildlife through forward planning; Maintain and enhance public access to the site, optimise opportunities to link to existing walking, cycling and bridleway routes; Design of the site and all facilities for all ages and abilities; Incorporate recreational facilities that are in keeping with the quiet enjoyment of the countryside setting, optimising health and wellbeing opportunities.	Havant Thicket Reservoir Project - Environmental Statement (2020)	Hybrid planning permission has been obtained - refer to planning applications nos. APP/20/00990 and 51680/00.
12				
13	**Please add Comments below and include details of Further Controls if the Risk Rating or Significant Score is MEDIUM or HIGH**			
14				
15				
16				
17				
18				

	A	B	C	D	E	F	G	H	I	J	K
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2	Please populate electronically, all blank cells below highlighted in light blue, except column I which will self populate. If necessary, the cells in white can also be amended to be made site specific.										
3	Associated project lifecycle stage	Aspect	Impacts	Conditions	Probability 1	Severity	Control Measures	Probability 2	Residual Risk	Additional Controls	Compliance Obligation
4					0 - Highly Unlikely	0 - No environmental impact or harm to humans		0 - Highly Unlikely	Colour Key to Risk Rating:		
5					1 - Very Unlikely	1 - Very minor environmental impact or nuisance to humans		1 - Very Unlikely			
6					2 - Unlikely	2 - Temporary local damage / can cause temporary harm to humans		2 - Unlikely	0 = INSIGNIFICANT		
7					3 - Likely	3 - Permanent local impact / potential to cause human harm to major organs		3 - Likely	1 - 3 = LOW		
8					4 - Very Likely	4 - Global impact that is not permanent / potential to cause major permanent disability-ill health		4 - Very Likely	4 - 10 =MEDIUM		HSE Legal Register
9					5 - Almost Certain	5 - Global impact that is permanent / potential to kill		5 - Almost Certain	10+ = HIGH		
16	Construction	The following construction works could impact biodiversity: Site compounds; Temporary drainage system, access track & haul roads; Reservoir earth embankment; Wetlands earth embankments; Southern Access Road; Raising of FE CAT A Track.	Potential risks/impacts include: Loss of habitat, accidental physical (mechanical) damage to habitat or woodland, including disturbance (direct or indirect) of any species (e.g. birds, bats, dormice, reptiles, amphibians and fish) using features. Loss of species habitat e.g. birds, bats, dormice, reptiles, amphibians and fish; Disturbance effects on species populations (e.g. via lighting, noise and visual effects); Disturbance to ditches, riparian habitats and watercourses; Changes in water quality; Spreading of invasive non-native species (INNS); Presence of protected species (e.g. bats, dormouse).	Normal	4	3	Control measures are listed in the REAC (B1 -B37), and include, but are not limited to: B2 - Develop a detailed long term ecological management plan (EcMP) for the reservoir site. B3 - Ecological Clerk of Works (ECoW) to be appointed, to be full time on site during site preparation. B6 - Install protective fencing (high visibility or HERAS) at the edge of the working area. B16 - During watercourse de-watering activities appropriately screened pumping equipment will be deployed to reduce risk of fish entrainment. B18 - Silt control measures to be applied to control siltation risks associated with de-watering activities and construction related discharges. B28 - Precautionary pre-clearance survey will be undertaken at areas of suitable habitat if clearance is required in the nesting season. B30 - Retained vegetation will be protected for use as receptor sites. B33 - CEMP will include detailed methods to minimise risks of spreading invasive non-native species by managing risks and removing them. B23 - Protection of bats from indirect harm - mitigation will be provided for lighting during construction. Any temporary lighting required during construction will be designed to minimise light spill. B22, B24 - Protection of bats and dormice. B28 - Protection of nesting birds. B30 - Protection of reptiles.	2	6	Environmental Statement Vol 2 - Chapter 9 Biodiversity; Vol 4 Appx A15.4 Biodiversity Net Gain For Rivers. CEMP. Ecological Management Plan. Ecological precautionary Methods of Working/ Method Statements. Fish Management Plan. Biosecurity Risk Assessment. Biodiversity Mitigation and Compensation Strategy. Landscape and Ecology Management Plan. European Protected Species Mitigation Licences for bats and hazel dormouse. Arboricultural Impact Assessment (AIA) and Arboricultural Method Statement (AMS). Lighting management.	Key legislation and guidance includes, but is not limited to: Wildlife & Countryside Act 1981 (as amended) Conservation of Habitats & Species Regulations 2017 (as amended) Water Framework Directive 2000 The Hedgerow Regulations 1997 Bats and Artificial Lighting at Night - Institution of Lighting Professionals (ILP) Guidance Note 08/23
17	Ground conditions										
18	Construction	Construction activities which could potentially impact on ground conditions include: Site compounds; Temporary drainage system, access track & haul roads; Reservoir earth embankment; Reservoir culvert; Wetlands earth embankments; Southern Access Road; Control house; Spillway; Raising of FE CAT A Track.	Potential impacts include: Physical effects, including soil erosion, soil compaction and ground stability; Mineral resource loss, damage or sterilisation; Effects associated with any existing ground contamination and potential new ground contamination issues; Effects associated with the re-use or disposal of site sourced soils and waste soils.	Normal	3	2	Control measures are listed in the REAC (GC1 - GC8), and include, but are not limited to: GC1 - undertake further assessment of potential UXO risks to determine the requirement for the implementation of UXO mitigation measures. GC2- undertake works in accordance with the Construction (Design and Management) Regulations (CDM Regulations) 2015 and appropriate guidelines and best practice. GC5 - prepare and implement an appropriate MMP in accordance with the CL:AIRE Definition of Waste: Development Industry Code of Practice and to promote sustainable waste and material resource management. GC6 - Principal Contractor to prepare a CEMP to include mitigation measures to reduce soil erosion and compaction during construction works. GC7 - Principal Designer to incorporate geotechnical mitigation/remedial measures in the design to reduce impacts from ground instability, soil compaction/settlement and leakage as required. GC8 - Principal Designer to prioritise the re-use of site-won mineral resources (topsoil and clay) within the Scheme.	2	4	Environmental Statement Vol 2 - Chapter 10 Ground Conditions CEMP. Materials Management Plan. Health and Safety File. Construction Phase Plan. Emergency Response Plan.	Key legislation includes, but is not limited to: Part IIA of the Environmental Protection Act (EPA) 1990. The Environmental Permitting (England and Wales) Regulations 2016. Construction (Design and Management) Regulations (CDM Regulations) 2015. Control of Substances Hazardous to Health (COSHH) Regulations 2002
19	Landscape and Visual										

	A	B	C	D	E	F	G	H	I	J	K
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5					1 - Very Unlikely	1 - Very minor environmental impact or nuisance to humans		1 - Very Unlikely			
6					2 - Unlikely	2 - Temporary local damage / can cause temporary harm to humans		2 - Unlikely	0 = INSIGNIFICANT		
7					3 - Likely	3 - Permanent local impact / potential to cause human harm to major organs		3 - Likely	1 - 3 = LOW		
8					4 - Very Likely	4 - Global impact that is not permanent / potential to cause major permanent disability-ill health		4 - Very Likely	4 - 10 =MEDIUM		HSE Legal Register
9					5 - Almost Certain	5 - Global impact that is permanent / potential to kill		5 - Almost Certain	10+ = HIGH		
20	Construction	The following construction works could impact on landscape and visual amenity: Site compounds; Reservoir earth embankment; Wetlands earth embankments; Southern Access Road; Raising of FE CAT A Track.	Potential impacts include: Visual impacts on the landscape and on views experienced by visual receptors during construction from the presence of construction plant, compounds, soils and material storage and stockpiling. General construction traffic movements (e.g. with flashing hazard warning lights), impacting on landscape and visual amenity: Potential impacts on trees / other vegetation to be retained.	Normal	4	2	Control measures are listed in the REAC (LV1 - LV10), and include, but are not limited to: LV1 - Preparation of an Arboricultural Impact Assessment (AIA) and Arboricultural Method Statement (AMS). All tree root protection areas identified, shall be protected by protection fencing. LV2 - The layout and construction of site compounds, soil storage areas, haul routes and any other construction site requirements to be designed and planned to ensure minimal impact on existing vegetation to be retained. Allow appropriate clearance from the edge of retained vegetation to minimise the requirements for cutting back or tree surgery. Requirements of which should be agreed with an Arboriculturist or ECoW. LV5 - Where removal of sections of scrub, hedgerows and trees are unavoidable, appropriate tree and hedge species will be replanted along the line of the existing hedge or within the area of scrub. These will be managed to restore the area to its pre-construction state. LV7 - Ensure mitigation planting is implemented to provide enhancement and replacement of landscape and habitats, as well as integrating The Scheme into its surroundings and providing screening functions.	2	4	Environmental Statement Vol 2 - Chapter 11 Landscape and Visual. Environmental Statement Vol 4 - Appendix A9.14 Arboricultural Impact Assessment. CEMP. AIA and AMS. Landscape and Ecology Management Plan. Soil Management Plan. Extreme weather conditions are to be accounted for in the early establishment of proposed landscape planting.	Key legislation includes, but is not limited to: European Union Directive 2011/92/EU The Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3)
21	Noise and vibration										
22	Construction	The following works could generate noise during the construction phase: Site compounds; Temporary drainage system, access track & haul roads; Reservoir earth embankment; Reservoir culvert; Wetlands earth embankments; Southern Access Road; Control house; Spillway; Raising of FE CAT A Track.	Noise impacts could result in nuisance to local residents / wildlife and/or breaches of planning conditions.	Normal	3	2	Control measures are listed in the REAC (NV1 to NV6), and include, but are not limited to: Limiting and controlling noise emissions to avoid direct and indirect impacts on Community and ecological receptors - e.g. Works will be carried out in accordance with the Best Practicable Means; Use of temporary noise screens or partial enclosures around particularly noisy activities; Avoid night-time impacts - e.g. avoid night-time works where possible; Reassess noise and vibration impacts - e.g. Reassess noise and vibration impacts once method of working, plant and programme have been agreed; Noise and vibration monitoring - e.g. Undertake targeted monitoring of noise and vibration levels when works are in close proximity to sensitive receptors.	2	4	Environmental Statement Vol 2 - Chapter 12 Noise and Vibration CEMP. Noise & Vibration Management Plan.	Key legislation includes, but is not limited to: Control of Pollution Act 1974; Environment Protection Act 1990.
23	Traffic and Transport										
24	Construction	The following construction activities will generate transport movements: Site compounds; Temporary drainage system, access track & haul roads; Reservoir earth embankment; Reservoir culvert; Wetlands earth embankments; Southern Access Road; Control house; Spillway; Raising of FE CAT A Track.	Road transport of construction materials could generate potential impacts on air quality, local traffic / businesses and local residents.	Normal	4	2	Control measures are listed in the REAC (TT1 - TT9), and include, but are not limited to: TT1 - Prepare a Construction Traffic Management Plan (CTMP) to manage the impact of HGV traffic on the highway network. TT4 - Utilise the northern access route (NAR) where practicable for the import and export of goods and materials. TT5 - Develop an alternative routeing strategy for PRoW. TT6 - Develop a construction travel plan to maximise opportunities for staff travel to and from the site using modes other than the private car.	2	4	Environmental Statement Vol 2 - Chapter 13 Traffic and Transport CEMP. CTMP/travel plan.	
25	Material resources and waste										

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9					5 - Almost Certain	5 - Global impact that is permanent / potential to kill		5 - Almost Certain	10+ = HIGH		
10	Construction										
11	Air quality										
12	Construction	Construction works which could potentially impact on air quality include: Site compounds; Temporary drainage system, access track & haul roads; Reservoir earth embankment; Reservoir culvert; Wetlands earth embankments; Southern Access Road; Control house; Spillway; Raising of FE CAT A Track.	Construction dust contributes to degradation of local air quality which impact on nearby receptors (e.g.residents and ecology). Carbon emissions generated during construction - e.g. through use of fuel/electricity; in site vehicles and machinery and site accommodation; materials used during construction, leading to emissions of fossil fuel derived CO_2.	Normal	4	2	Control measures are listed in the REAC (AQ1), and include, but are not limited to: Measures specific to site management - e.g. record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken; Monitoring - e.g. carry out regular site inspections to monitor compliance. Preparing and maintaining the Site - e.g. avoid site runoff of water or mud; Site operations - e.g. ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation. Waste management - e.g. avoid bonfires and burning of waste materials; Measures specific to earthworks e.g. re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable; Measures specific to construction; ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, Measures specific to Trackout - e.g. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. HGVs will be wheel washed before leaving site. Egress from the wheel wash area will be clean and free of debris.	2	4	Environmental Statement Vol 2 - Chapter 7 Air Quality; Chapter 16 Effect on Climate. CEMP. Dust Management Plan. Carbon Management Plan. Energy Management Plan.	Legislation includes, but is not limited to: The Air Quality Standards Regulations 2010; Air Quality (England) Regulations 2000 and Air Quality (England) (Amendment) Regulations 2002; UK Climate Change Act (2008).
13	Historic Environment										
14	Construction	The following construction activities could impact on the historic environment: Site compounds; Temporary drainage system, access track & haul roads; Reservoir earth embankment; Wetlands earth embankments; Construction of structures; Southern Access Road; Raising of FE CAT A Track.	Potential direct impacts include physical damage to a heritage asset, temporary impacts on the settings of heritage assets with the introduction of construction machinery, compounds and vegetation removal, and the potential to create new sightlines, as well as increasing noise levels and possible atmospheric changes such as high dust levels.	Normal	3	2	Control measures are listed in the REAC (HE1, HE3): HE1 - Development of an Archaeological Management Plan. HE3 - Use of materials designed to limit soil disturbance, such as GeoTrax or CellWeb.	1	2	Environmental Statement Vol 2 - Chapter 8 Historic Environment CEMP. Archaeological Management Plan.	Ancient Monuments and Archaeological Areas Act (1979); Planning (Listed Buildings and Conservation Areas) Act (1990); Construction (Design and Management) Regulations (CDM Regulations) 2015
15	Biodiversity										

	A	B	C	D	E	F	G	H	I	J	K
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9					5 - Almost Certain	5 - Global impact that is permanent / potential to kill		5 - Almost Certain	10+ = HIGH		
26	Construction	Construction works potentially generating waste include activities associated with: Site compounds; Concrete structures (e.g. control house, Spillway) - wastes from concrete operations; Hard landscaping.	Waste materials not managed carefully within the Duty of Care chain have the potential to cause environmental damage. Mismanagement of waste streams constitutes a breach of legislation.	Normal	3	3	Control measures are listed in the REAC (MRW1 - MRW6), and include, but are not limited to: MRW1 - develop the design considering resource efficiency and based on the majority of earthworks materials being sourced from the reservoir site. MRW2 - Principal Contractor to produce a Site Waste Management Plan with planned waste management for forecast wastes and monitoring of actual waste management during construction including the waste codes, quantities and destination of wastes removed from the site. MRW3 - Principal Contractor to consult with the Environment Agency regarding proposed approach to reuse of excavated materials, and produce a Materials Management Plan (MMP).	2	6	Environmental Statement Vol 2 - Chapter 14 Material Resources and Waste. CEMP. Site Waste Management Plan. Materials Management Plan. Sustainable procurement policy/material procurement policy.	Key legislation includes, but is not limited to: EU Directive 2008/98/EC on waste; Environmental Permitting (England and Wales) Regulations 2016; Hazardous Waste (England and Wales) Regulations 2005 (as amended by the Hazardous Waste (England and Wales) Amendment Regulations 2009 and 2016)
27	**Water environment**										
28	Construction	The following works could impact on the water environment during construction of: Site compounds; Temporary drainage system, access track & haul roads; Reservoir earth embankment; Wetlands earth embankments; Southern Access Road; Raising of FE CAT A Track.	**Run off of contaminated surface water** Spillages/leakages of contaminated materials including accidental leakages/spillages and transmittal of contamination as a result of mobile plant operation. **Dewatering** Dewatering, leading to mobilisation of contamination via modifications to the groundwater regime. **Construction** Silt pollution to local watercourses. Contamination of watercourses and drains causing harm to aquatic life. Risk of erosion/ scour at watercourse discharge points due to high discharge flows. Risk of flooding downstream.	Normal	4	3	Control measures are listed in the REAC (W1 - W6), and include, but are not limited to: W1 - developing a CEMP to include a suite of pollution prevention measures. W3 - carrying out a water quality monitoring strategy. W4 - install construction flow management measures around the dewatering of the area within the footprint of the reservoir to ensure the waters from the headwaters are captured and diverted around the site. W5 - ensure no water discharges into the Park Lane Stream catchment. All water will be channelled to the head of Riders Lane Stream where flow and quality will be controlled. W6 - Habitats in new toe drains and ditch diversions (for watercourses draining to the River Lavant) will be improved to increase their ecological potential to provide habitats to a wider range of species than they are expected to contain at the moment.	2	6	Environmental Statement Vol 2 - Chapter 15 Water CEMP. Water Quality Management Plan. Emergency Response Plan. Drainage Management Plan. Pollution Control Plan.	Key legislation includes, but is not limited to: The Environmental Permitting (England and Wales) Regulations 2016 (as amended) (SI 2016/1154); The Land Drainage Act 1991 (SI 1991/59); The Water Resources Act 1991 (SI 1991/57); Water Abstraction and Impounding (Exemptions) Regulations 2017; (SI 2017/1044) Water Framework Directive (England and
29	**Effects on climate**										
30	Construction	Construction works which could potentially impact on climate include: Reservoir earth embankment; Reservoir culvert; Wetlands earth embankments; Southern Access Road; Control house; Spillway.	Emissions of GHGs into the atmosphere during construction, including: Excavation, movement and laying of site-won materials for the earth embankment and wetlands earth embankments. Production of concrete and ductile iron for the construction of the control house, culvert and other structures and pipework. Construction of the Southern Access Road and car park.	Normal	4	2	Control measures are listed in the REAC (EC1 - EC3). EC1 relates to construction: Materials will be sourced onsite as far as possible, to reduce greenhouse gas emissions. Where this is not possible, local materials will be used. The overall volumes of material needed will be minimised through lean design and 'soft' engineering approaches.	2	4	Environmental Statement Vol 2 - Chapter 16 Effect on Climate CEMP. Site Waste Management Plan. Materials Management Plan. Sustainable procurement policy/Material procurement policy. Carbon Management Plan.	Key legislation includes, but is not limited to: Kyoto Protocol (1997); Paris Agreement (2015); UK Climate Change Act (2008).
31	**Vulnerability to climate change**										

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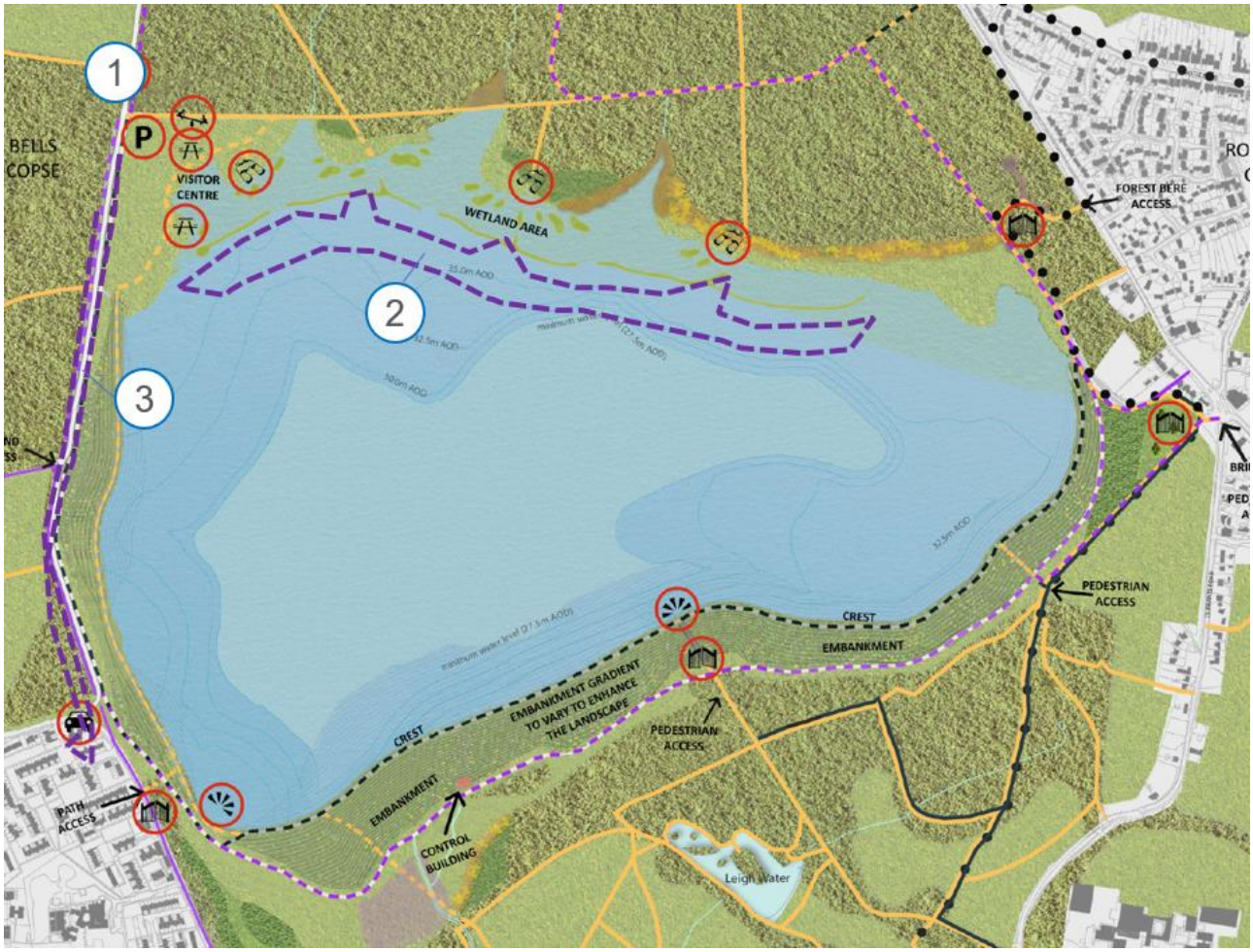
8					4 - Very Likely	4 - Global impact that is not permanent / potential to cause major permanent disability-ill health		4 - Very Likely	4 - 10 =MEDIUM		
9					5 - Almost Certain	5 - Global impact that is permanent / potential to kill		5 - Almost Certain	10+ = HIGH		
32	Construction	Construction works which could have potential vulnerabilities to climate change include: Reservoir earth embankment; Reservoir culvert; Wetlands earth embankments; Southern Access Road; Control house; Spillway.	Heavy rain arising from extreme weather events or climatic events could result in the closure of local roads and power cuts due to flooding or flood inundation of the construction works area.	Abnormal	3	2	Control measures are listed in the REAC (VCC1 - VCC10). Those relevant to the MRW construction are: VCC1 - Maintain multiple access routes to working areas where possible to minimise delays to construction schedule caused by extreme weather. VCC10 - Follow actions and commitments set out in FRA to avoid flooding brought about by extreme rain or during wetter winters.	2	4	Environmental Statement Vol 2 - Chapter 17 Vulnerability to Climate Change CEMP. CTMP.	Key legislation includes, but is not limited to: UK Climate Change Act (2008).
33	Population and human health										
34	Construction	Construction works which could potentially impact on population and human health include: Site compounds; Temporary drainage system, access track & haul roads; Reservoir earth embankment; Reservoir culvert; Wetlands earth embankments; Southern Access Road; Control house; Spillway; Raising of FE CAT A Track.	Access to areas of open space (Havant Thicket), disruption to bridleways or Public Rights of Way (e.g. temporarily closures or diversions).	Normal	3	2	Control measures are listed in the REAC (PHH1 - PHH8). Those relevant to the MRW construction are: PHH1 - Retain existing pedestrian accesses where possible. Maintain safe access through traffic marshalling, traffic management and use of fencing to separate the public from construction activity and traffic. PHH2 - Keep the public informed on project progress and on the timing and extent of road/footpath/PROW/amenity spaces closures/diversions. PHH3 - Keep the public and residents fully informed of the scale, nature and timing of the works to minimise any adverse effects from noise pollution and vibration.	1	2	Environmental Statement Vol 2 - Chapter 18 Population and Human Health. CEMP. CTMP.	Key legislation includes, but is not limited to: Fair Society, Healthy Lives (the Marmot Review) 2010; Health and Social Care Act 2012; Public Services (Social Value) Act 2012; Public Health England Strategy 2020-25.
35	Major Accidents and Disasters										
36	Construction	Construction works which could be vulnerable to potential major accidents and disasters include: Reservoir earth embankment; Reservoir culvert; Wetlands earth embankments; Control house; Spillway.	Potential events include flooding and change(s) to groundwater levels.	Abnormal	2	2	The majority of major events identified as relevant to the Scheme have been sufficiently mitigated through embedded mitigation and additional mitigation. Control measures are listed in the REAC (AD1 -20) and include, but are not limited to: AD4 - Water invasion during borrow pit excavation to be managed by appointed contractor. Water from incoming streams diverted and pumped elsewhere, up to a 1 in 30 storm event – contractor to include in design and construction methodology. AD10 - Traffic Management Plan to be implemented by the appointed contractor to reduce risk of road traffic accidents due to construction traffic.	1	2	Environmental Statement Vol 2 - Chapter 20 Vulnerability to Major Accidents and Disasters CEMP. Water Quality Management Plan. Emergency Response Plan. EA Abstraction licence for dewatering activities. EA Environmental Permit. CTMP.	Key legislation: Control of Major Accident Hazards Regulations 2015 (COMAH)
37											
38	Please add Comments below and include details of Further Controls if the Risk Rating or Significant Score is MEDIUM or HIGH										
39											
40											
41											
42											
43											

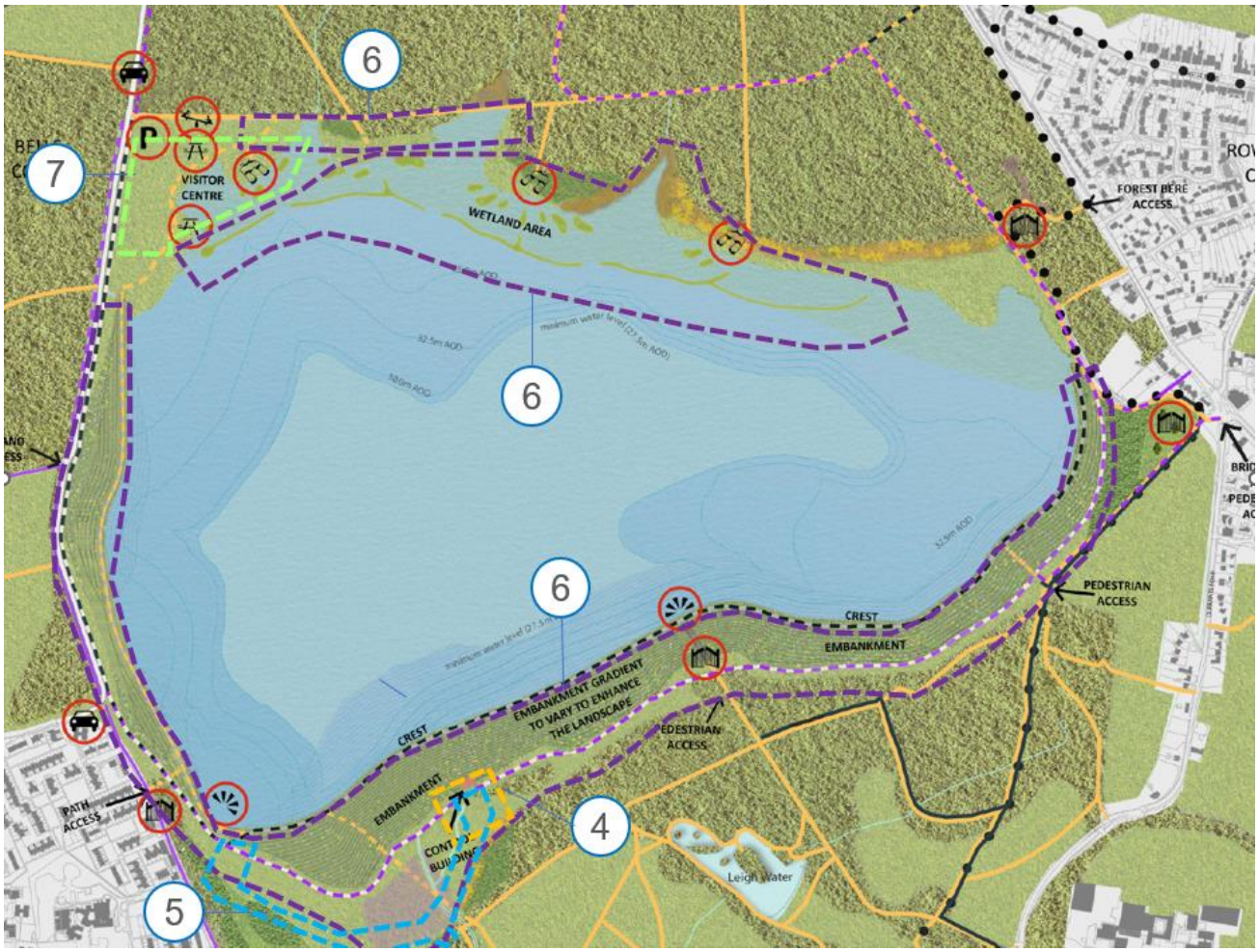
Appendix F Detailed Phasing Plan

The Detailed Phasing Plan (doc no. HTR-FUW-RZ-RE-DP-W-507) and the Construction Method Statement (doc no. HTR-FUW-RZ-RE-MS-W-505) outlines the construction phasing and the programme to construct the MRW. These documents will be submitted to the local planning application to discharge planning conditions 4 and 6. For further information, please visit Havant Borough Council and East Hampshire District Council.

Below are ilustrations of the key construction works.



Ref	Element Covered	Proposed Submission Timing	Additional Information
1	Northern Access Route	July 2022	Approved Feb 2023
2	Wetland Retaining structure earthworks, Wetland Flow Control Structures, Ground Water Cut-offs	Q1 2024	
3	Southern Access Road, Main Embankment, Valve tower	Q2 2024	



Ref	Element Covered	Proposed Submission Timing	Additional Information
4	Control House	Q3 2024	
5	Spillway	Q2 2025	
6	Hard Landscaping, Soft landscaping and Forestry England track raising & culverts	Q1 2026	
7	Visitor Centre	Post 2026	

The indicative construction programme for the MRW is presented below:

Timeline	Construction activities
2024	Wetlands Earthworks & structures Main Embankment Earthworks Reservoir Pipe Culvert & Valve shaft Southern Access Road
2025	Main Embankment Earthworks Culvert & Valve shaft Control House
2026	Main Embankment Earthworks

Timeline	Construction activities
	Control House Hard Landscaping Forestry England track raising & culverts Soft Landscaping
2027	Forestry England track raising & culverts Hard Landscaping Soft Landscaping
2028	Soft Landscaping
2029	Soft Landscaping

Appendix G Environmental Toolbox Talks

A list of Toolbox Talks is provided below. Regular toolbox talks will be conducted for site employees and subcontractors to highlight site environmental issues.

Toolbox Talk No. and Title	Toolbox Talk Category
E01 Being a good neighbour	Environmental - Nuisance
E02 Environmental nuisance	Environmental - Nuisance
E03 Emergency spill control	Environmental - Pollution Protection
E04 Cement, concrete and plaster	Environmental - Pollution Protection
E05 Pumping, over-pumping and washing down plant	Environmental - Pollution Protection
E06 Fuel and oil	Environmental - Pollution Protection
E07 Energy and water efficiency	Environmental - Resource Efficiency
E08 Wildlife	Environmental - Nature Conservation
E09 Invasive Plants	Environmental - Nature Conservation
E10 Working around trees and hedgerows	Environmental - Nature Conservation
E11 Waste	Environmental - Waste
Ecological Calendar	Environmental - Nature Conservation
GP1 Archaeology	Environmental - Good Practice
GP2 Energy Fuel Efficiency	Environmental - Good Practice
GP3 Material Handling Housekeeping	Environmental - Good Practice
GP4 Working on Previously Developed Land	Environmental - Good Practice
HE1 Archaeology	Environmental - Heritage
HE2 Built Heritage	Environmental - Heritage
HE3 Working on previously developed land	Environmental - Heritage
HE4 Working around trees and hedgerows	Environmental - Heritage
NC1 Adders	Environmental - Nature Conservation
NC3 Bats	Environmental - Nature Conservation
NC4 Great Crested Newts	Environmental - Nature Conservation
NC5 Nesting birds	Environmental - Nature Conservation
NC6 Giant Hogweed	Environmental - Nature Conservation
NC7 Himalayan Balsam	Environmental - Nature Conservation
NC8 Japanese Knotweed	Environmental - Nature Conservation
NC9 Working Around Trees Hedgerows	Environmental - Nature Conservation
NU1 Be a good neighbour	Environmental - Nuisance
NU2 Dust and air quality	Environmental - Nuisance
NU3 Noise and vibration	Environmental - Nuisance
PP1 Bentonite	Environmental - Pollution Protection
PP2 Cement and concrete	Environmental - Pollution Protection
PP3 Cleaning plant and machinery	Environmental - Pollution Protection
PP4 Fuel and oil	Environmental - Pollution Protection
PP5 Pumping and over-pumping	Environmental - Pollution Protection

Toolbox Talk No. and Title	Toolbox Talk Category
PP6 Silt	Environmental - Pollution Protection
PP7 Spill Control	Environmental - Pollution Protection
PP8 Working on or near watercourses	Environmental - Pollution Protection
RE1 Certified timber	Environmental - Resource Efficiency
RE2 Energy Efficiency (electricity, gas, fuel)	Environmental - Resource Efficiency
RE3 Material storage, handling and housekeeping	Environmental - Resource Efficiency
WAS1 Waste Hierarchy	Environmental - Waste
WAS2 Demolition	Environmental - Waste
WAS3 Segregation of waste	Environmental - Waste
WAS4 Storage of waste	Environmental - Waste
WAS5 Control of road sweeper arisings	Environmental - Waste
WAS6 Hazardous and special waste, aerosols, COSHH	Environmental - Waste
WAS7 Waste electrical and electronic equipment WEEE	Environmental - Waste
066 - Leachate	Environmental - Pollution Protection
069 - Interceptor Drip Trays	Environmental - Pollution Protection
081 - Littering	Environmental - Waste
082 - Energy	Environmental - Resource Efficiency
085 - Plant Nappies	Environmental - Resource Efficiency
086 - Amphibians	Environmental - Nature Conservation
087 - Adverse Weather	Environmental - Nuisance
100 - Silt Pollution Prevention	Environmental - Pollution Protection
102 - Washing Down Plant and Machinery	Environmental - Pollution Protection
103 - Interceptor Drip Trays	Environmental - Pollution Protection
104 - Rhododendron	Environmental - Nature Conservation
105 - Elodea Canadensis	Environmental - Nature Conservation
106 - Cotoneaster	Environmental - Nature Conservation
107 - Ecofficiency	Environmental - Waste
108 - Nesting Birds	Environmental - Nature Conservation
109 - PFC059 Site Set Up & Maintenance - Environmental	Environmental - Good Practice
110 - Site Ecology & Calendar	Environmental - Nature Conservation
111 - Plant and Vehicle Energy Efficiency	Environmental - Resource Efficiency
112 - Suitably Qualified Ecologists	Environmental - Nature Conservation
123 - Plant Capture & Off-Hires	Environmental - Pollution Protection
124 - Segregation of Hazardous Waste	Environmental - Waste
125 - Managing Fuel Spills	Environmental - Pollution Protection
126 - Biodiversity	Environmental - Nature Conservation
129 – Carbon Management	Environmental - Resource Efficiency
108 - Nesting Birds	Environmental - Nature Conservation
132 - Targets for Diesel Reduction In Construction	Environmental - Resource Efficiency
133 - Spill Response Training	Environmental - Pollution Protection

Toolbox Talk No. and Title	Toolbox Talk Category
134 - End of Project Waste	Environmental - Waste
138 - Reducing Idle Time	Environmental - Resource Efficiency
140 - Standpipe Usage & Licensing	Environmental - Resource Efficiency

Appendix H Environmental Training Matrix

The training matrix presented below reflects the roles for site personnel.

PERSONNEL	Period of validity (years)	Training Provider	Construction Managers	Contract Managers/ Earthworks Manager	Design Manager	Design Staff	Engineering Manager	Engineering Staff	Administration Manager	Administration Staff	HSE Manager	HSE Advisor	Site Environmental Manager	Environmental Specialists and Contractors	Works Manager	Foreman	Labourers	Visitors
Jones Bros HSE Induction	N/A	Internal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Site Specific Induction	N/A	Internal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Site Environmental Awareness Training Scheme (SEATS)	5	External	X	X			X	X			X	X	X	X	X	X	X	
Site Management Environmental Training Scheme (SMETS)	5	External											X	X				
Spil Kit Awareness & Spill Mitigation Training	3	Internal	X	X			X	X			X	X	X	X	X	X	X	
Energy Champion Training	3	Internal						X						X				
Environmental Toolbox Talks	N/A	Internal	X	X			X	X			X	X	X	X	X	X	X	