

Havant Thicket Reservoir

Ecological Mitigation, Compensation and Enhancement Measures

Phase 2 Wetlands Reserved Matters - Discharge of Planning Condition 36

30th May 2024 | Rev P03

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1. Introduction and Background to the Scheme

Purpose of this Report

1. Portsmouth Water secured hybrid planning permission in October 2021 for Havant Thicket Reservoir, a new raw water storage reservoir development located north of Havant, Hampshire (hereafter referred to as 'the Scheme'). The new reservoir will have a minimum storage capacity of 8,700 million litres and an extent of approximately 1.6 km from east to west and 800 m from north to south.
2. Future Water have been appointed as the Principal Contractor by Portsmouth Water to undertake the construction of the Scheme.
3. The current planning permission was secured following a hybrid planning application submitted in 2020 to East Hampshire District Council and Havant Borough Council as the two Local Planning Authorities (LPAs) for the Scheme (the Scheme spans two local authority areas).
4. In June 2021, East Hampshire District Council's Planning Committee resolved to grant planning permission for the reservoir, following the support given by Havant Borough Council for the reservoir and pipeline in the same month. Full planning permission was granted in October 2021 for the principle of the reservoir and some aspects of detailed design (Havant Borough Council Reference: APP/20/00990/East Hampshire District Council Reference: 51680/001). Additional design aspects are approved in outline subject to Reserved Matters applications. The reservoir is due to be completed and operational by 2029.
5. The outline planning permission includes a permanent wetland area on the northern side of the reservoir that will include new bird hides and screens, which will be subject to the Phase 2 Reserved Matters application.
6. The purpose of this report is to provide the Local Planning Authority with details of the ecological mitigation, compensation and enhancement measures and monitoring of mitigation measures required for each reserved matters application, as further detailed in planning condition 36, in relation to Phase 2, wetlands. This information is required to discharge the Phase-specific pre-commencement planning condition 36 which will need to be discharged before Phase 2 construction works can commence. The planning condition states:

Condition 36: Ecological Mitigation, Compensation and Mitigation Measures:

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. Such details shall be in accordance with the ecological mitigation, compensation and enhancement measures detailed within the Outline Biodiversity Mitigation and Compensation Strategy (ECOSA, September 2020), the Habitats Regulations Assessment (Atkins/Portsmouth Water, September 2020) and the Implementation Plan for Off Site Biodiversity Mitigation and Compensation (Atkins, April 2021). Any such approved measures shall thereafter be implemented in strict accordance with the agreed details and with all measures maintained in perpetuity, unless otherwise agreed in writing by the Local Planning Authority.

***Reason:** To protect and enhance biodiversity in accordance with the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, NERC Act 2006, NPPF and Policy CS 11 of the Havant Borough Core Strategy March 2011.*

Ecological Context of the Wetlands

7. The Scheme lies within a shallow valley located between the residential settlements of Leigh Park and Rowlands Castle and covers an area of approximately 296 ha. The wetlands (Phase 2 of the Scheme) are fully within the approved Scheme boundary, which is marked by the red line planning boundary shown in **Figure 1-1**.

Ecological mitigation undertaken in 2023

8. Given the presence of species and important habitats identified within the Site, a number of working Method Statements and / or Precautionary Method of Works (PMWs) have been prepared to aid the Principal Contractor in discharging their obligation to protect such receptors from harm during the works. The Ecological Clerk of Works supervises all site clearance and site preparation work.
9. Most grassland within the construction footprint of the wetlands was strimmed, using a two-stage approach, under ecological supervision in 2023. Areas within the north, west and south of the site were topsoil stripped.
10. Slow worm, common lizard, common toad, common frog and field vole were translocated during supervision of the two-stage grass cut. The areas were also searched using prescribed methods to ensure no ground-nesting birds were present, prior to a supervised two-stage grass cut. The grassland was then continuously managed to keep a short sward by a tractor for the remainder of summer 2023.
11. Ditches across the site were strimmed (using two-stage cut process), tree stumps removed and topsoil stripped, all under ecological supervision. Sections of the ditch network were also subject to draining under ecological supervision. A small pump was used to lower the water level to ensure all animals had been removed prior to removing tree stumps/roots along the ditch network. Animals caught during removal of ditch vegetation include common lizard, common toad, adder, common frog, bank vole, common shrew, slow worm, European eel, bullhead and stickleback.
12. All reptiles and amphibians were translocated to pre-defined receptor areas in Havant Thicket woodland, to the north of the construction site boundary. European eel, bullhead and stickleback were relocated under an Environment Agency licence.

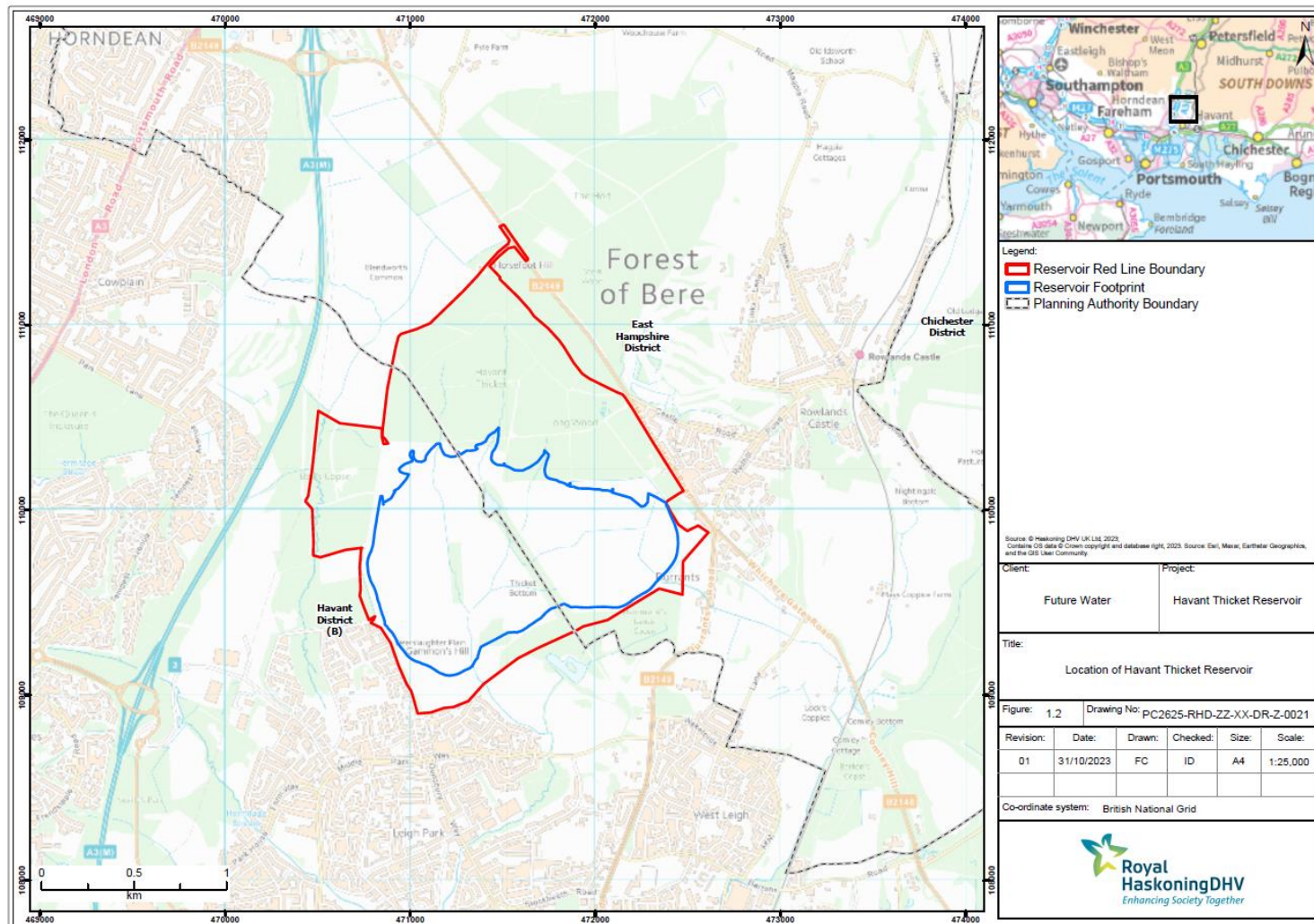


Figure 1-1 Planning Red Line Boundary

2. Background to the Wetlands

13. The objectives of the wetlands are described in the Havant Thicket Reservoir Landscape and Ecology Management Plan (LEMP) (Atkins, 2022) and are summarised below. The LEMP is based on mitigation and compensation measures for landscape and ecology set out in the ES submitted with the planning application in 2020, and the Biodiversity Mitigation and Compensation Strategy (Atkins, 2022 doc no: HTR-ATK-ZZ-ZZ-RP-Y-0001).
14. To compensate for loss of wetland, wet woodland, and other habitats, a wetland area, with a mosaic of habitats will be created on the northern edge of the reservoir. This area will include pools with islands and variable water depths, reedbed, marshy grassland, wet woodland, and scrub.
15. The wetland area will be fed by the three headwater streams (Reaches 1-3) as shown in the Ponds and Watercourses Figure in the LEMP (Atkins, 2022) . The wetland will be held at the retained wetland level of 38.8m AOD when the main reservoir water levels are low, such as during lengthy operations or drought.
16. A shallow shoreline will be formed on the north-eastern side of the reservoir to create habitat suitable for typically ephemeral populations of plant species adapted to the open shallow edges of freshwater lakes. Partially submerged dead wood features will be installed using timber felled onsite during the woodland clearance for the reservoir.

Objectives of the Wetlands

- A wetland retaining structure will retain water in the wetland when the main reservoir water levels are low. Water levels will naturally fluctuate;
- To provide 10.2 ha of wetland with south-facing margins and consistent water levels. Target habitats include:
 - wet woodland;
 - grassland and scrub mosaic;
 - ephemeral pools with islands; and
 - 3.4 ha of reedbed.
- The retained wetland is formed of four compartments which will be fed by three headwater streams.

3. Phase 2 Reserved Matters Wetlands Design

17. The proposed design of the wetlands for the Phase 2 Reserved Matters is based on the outline design work undertaken by Portsmouth Water to secure the hybrid planning permission to compensate for the loss of wetland, wet woodland, and other habitats¹. The following drawings have been prepared by Future Water for the Phase 2 Reserved Matters application:

- HTR-GHD-ZZ-RE-DR-Z-0002 - Proposed Reservoir Works Key Plan Phase 2;
- HTR-GHD-WC-ZZ-DR-L-0012 - Outline Wetlands Embankment Overall Design Strategy;
- HTR-COF-EM-RE-DR-GE-4004 – Planning Drawing Wetlands Retaining Embankment Proposed Site Layout;
- *HTR-COF-EM-RE-DR-GE-4005 - Planning Drawing Wetlands Retaining Embankment Design Cross Sections;*
- HTR-GHD-WC-ZZ-DR-L-0050 - Landscape and Ecology Proposals;
- HTR-GHD-WC-ZZ-DR-L-0051 - Wetlands Embankment Active Water Control Feature - Penstock Detail;
- HTR-GHD-WC-ZZ-DR-L-0052 - Wetland Spillway Detail - No Vehicle Access (Section & Plan);
- HTR-GHD-WC-ZZ-DR-L-0053 - Wetland Spillway Detail (Section and Plan);
- HTR-GHD-WC-ZZ-DR-L-0054 - Wetland Spillway Detail Compartment 3/4 (Section and Plan);
- HTR-GHD-WC-ZZ-DR-L-0055 - Wetland Spillway Detail Compartment 1/2 (Section and Plan);
- HTR-GHD-WC-ZZ-DR-L-0056 - Wetland Retaining Structure - Landscape General Arrangement Sheet 1 of 6;
- HTR-GHD-WC-ZZ-DR-L-0057 - Wetland Retaining Structure - Landscape General Arrangement Sheet 2 of 6;
- HTR-GHD-WC-ZZ-DR-L-0058 - Wetland Retaining Structure - Landscape General Arrangement Sheet 3 of 6;
- HTR-GHD-WC-ZZ-DR-L-0059 - Wetland Retaining Structure - Landscape General Arrangement Sheet 4 of 6;
- HTR-GHD-WC-ZZ-DR-L-0060 - Wetland Retaining Structure - Landscape General Arrangement Sheet 5 of 6;
- HTR-GHD-WC-ZZ-DR-L-0061 - Wetland Retaining Structure - Landscape General Arrangement Sheet 6 of 6;
- HTR-GHD-WC-ZZ-DR-L-0062 - Wetlands Active Water Control Penstock Chamber Details Compartment 4;
- HTR-GHD-WC-ZZ-DR-L-0063 - Wetlands Active Water Control Penstock Chamber Details Compartment 3;
- HTR-GHD-WC-ZZ-DR-L-0064 - Wetlands Active Water Control Penstock Chamber Details Compartment 2;
- HTR-GHD-WC-ZZ-DR-L-0065 - Wetlands Active Water Control Penstock Chamber Details Compartment 1;
- HTR-GHD-WC-ZZ-DR-L-0080 - Wetlands Islands and Ephemeral Features Cross-Sections Sheet 1 of 4;
- HTR-GHD-WC-ZZ-DR-L-0081 - Wetlands Islands and Ephemeral Features Cross-Sections Sheet 2 of 4;

¹ Wetland Concept and Outline Design Report (Atkins doc no: HTR-ATK-XX-ZZ-RP-Z-0001).

- HTR-GHD-WC-ZZ-DR-L-0082 - Wetlands Islands and Ephemeral Features Cross-Sections Sheet 3 of 4;
- HTR-GHD-WC-ZZ-DR-L-0083 - Wetlands Islands and Ephemeral Features Cross-Sections Sheet 4 of 4.

Wetlands Design Features

The proposed design features of the wetlands include the following:

Retained wetland area

- Shallow shoreline features providing habitat suitable for typically ephemeral populations of plant species adapted to the open shallow edges of freshwater lakes;
- Wet woodland elements form part of a mosaic of grassland, scrub, and ephemeral pools;
- The island surface levels have been set to ensure that the islands become progressively exposed during the normal annual hydrograph to produce seasonally inundated nesting habitat;
- Shallows below Top Water Level add value when water levels recede, as standing water will be temporarily held within the shallows;
- The Wetland will be fed by three headwater streams. These help to improve habitat connectivity between the new wetland and existing Havant Thicket woodland, allowing for increased connectivity between watercourses and pond features;
- The island location and sizing has been developed with a target of achieving a neutral cut and fill balance within the retained wetland area;
- A 3-4 m wide access track for maintenance purposes will run along the top of the crest of the embankment between the wetland and the reservoir. This will be made from compacted stone/gravel and dressed with topsoil for establishment of grass sward joins the embankment between Compartment 1/2 and 3/4; and
- To maintain hydrological connectivity between the retained wetland area and main body of the reservoir during the normal water level regime, it is proposed to provide passive water level control (spillway) and active water control (pipe).

Grassland planting

- Wet grassland planted with native flora such as bog arum and marsh marigold within the shallows and ephemeral features;
- The grassland area will look to create at least 25% acid grassland overall, no more than 10% dense bracken.
- Species-rich grassland habitat will be managed to create suitable micro-habitats for invertebrates, including varies sward densities, patches of bare substrates, promotion of larval food plants and scattered scrub;
- Management of the new and retained grassland will be undertaken to provide a varied sward height that will maintain suitability for ground nesting birds such as skylark and meadow pipit and graded edges where at the interface with scrub and woodland to increase structural and species diversity;
- Species-rich grassland habitat will be managed to create suitable micro-habitats for invertebrates, Increasing the foreshore variation in landform and seeding around the edges of

the reservoir site alongside future grassland management and installation of hibernacula and log piles will look to maximise habitat value; and

- Increase carrying capacity around the edges of the reservoir site through grassland management and installation of hibernacula and log piles.

Planting

- Specific landform, planting and fencing measures to reduce predation pressure on birds through excavations and placement of islands/ephemeral features from the shoreline;
- Local native tree species within the woodland mix have been selected that provide foraging habitat for bats and dormice and benefit birds and invertebrates by providing shelter and food sources. These include, but are not restricted to common hornbeam, common oak, common lime and common alder;
- Within the wetland area and transition north, the scheme provides wood pasture (parkland) areas for more open habitat that will benefit invertebrates and provide different foraging opportunities for bats;
- The planting design also includes new woodland edge habitat to benefit reptiles;
- The area of corsican pine plantation in the south of Havant Thicket woodland that has been felled will be replanted with alder, aspen, native poplar and willow prior to the flooding of the area, to form new wet woodland. Scots pine is to be retained where possible;
- The landscape design will provide woodland edge habitat to benefit invertebrates and reptiles; and
- There is approximately a 3 m wide shelf for reedbed planting. Reedbeds habitat will be created (islands and ephemeral shallows) consisting of 3.4 ha of planted perennial grasses and perennial herbaceous flowering plants.

Viewpoints

- Islands aligned to viewpoints from bird hides, visitor centre and known key vistas within the wider context of the site.
- Viewing screens, landform with planting will provide adequate screening while allowing public to see into the wetland area. Bird hides have been located adjacent to access paths; and
- The landscape strategy has looked to retain willow scrub and tall herb habitat along the south-eastern boundary of Havant Thicket woodland. This has helped to reinforce the visual barrier between grassland on the reservoir side and footpaths within Havant Thicket woodland.

4. Phase 2 Ecological Mitigation Measures

Table 1: Summary of ecological mitigation incorporated within the wetland design

Species/ species group	Enhancement measures
Bats	The wetland habitat will provide an availability of water for rehydration and high insect densities for foraging. The planting of local native tree species within the woodland mix have been selected to provide foraging habitat and developed trees will provide potential roosting habitat for bats.
Great Crested Newt	New wetland pools, grassland and woodland will provide suitable locations for breeding, foraging and hibernating for great crested newts.
Birds	New wetland, grassland, woodland and scrub will provide foraging and nesting habitat for birds. Measures undertaken within Havant Thicket woodland will compensate for loss of habitat and nesting opportunities for birds, such as conifer clear-fell and replanting, birch clearings and replanting, wet woodland planting and pond enhancements. The wetland will provide roosting and nesting sites for a variety of birds. Management of retained and new grassland (including wetland flora) will create a varied ward height that will provide new opportunities for territories for skylark and meadow pipit, and foraging habitat for kestrel.
Reptiles	New wetland, grassland and scrub edge habitat will provide foraging, basking and hibernating opportunities for reptiles. Grass snake's <i>Natrix helvetica</i> preferred habitat includes wetlands and marshes, also making use of the surrounding terrestrial habitat such as grassland, scrub and woodland. The wetland area will provide suitable basking and foraging habitat for grass snake which feed mostly on amphibians and small fish.
Hazel Dormouse	New woodland planting will help create new vegetation structures and graded edge habitats which provide habitat for hazel dormouse.
Invertebrates	New wetland habitat will support a varied assemblage of invertebrates such as dragonflies, water beetles, butterflies and moths.
Water Vole and Otter	Water Vole and Otter are a flagship wetland species, neither have been recorded at the Site, however there is potential for these species to colonise the wetlands in the future. New wetland habitat will provide areas of secluded habitat within the Site and connectivity with marine habitats via wetland planting, creating riparian corridors.

5. Construction Environmental Management

18. The proposed design of the wetlands for the Phase 2 Reserved Matters is based on the outline design work undertaken by Portsmouth Water to secure the hybrid planning permission to compensate for the loss of wetland, wet woodland, and other habitats². The following drawings have been prepared by Future Water for the Phase 2 Reserved Matters application:
19. A Construction Environmental Management Plan (CEMP) (doc no. HTR-RHD-P2-RE-PL-Z-0018) has been prepared by Future Water in support of the construction works. The CEMP is being submitted to the local planning authority to discharge Condition 5 alongside this Reserved Matters application.
20. The CEMP will be a 'live' document and will be maintained by Future Water throughout the life of the Scheme.
21. The CEMP will be developed into the Handover Environmental Management Plan (HEMP) upon completion of the construction works to pass crucial environmental information to those bodies responsible for future maintenance and operation of the asset. Future Water will be responsible for preparing the HEMP and Construction Phase Health and Safety Plan on completion of construction, for handover to the managing agent.
22. Portsmouth Water, Future Water and its subcontractors are all responsible for adhering to and complying with the Scheme objectives, Scheme environmental policy, relevant environmental legislation, bylaws and regulations. It is a requirement that all site personnel are made aware of their duty of care to the environment, including local communities, 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.
23. Responsibilities for site environmental management will be delegated to key personnel by Future Water. These personnel will be responsible for the implementation, reporting and monitoring of environmental mitigation during construction. Where required, environmental specialists will provide advice on specific issues or site activities.

Post-construction Environmental Management Responsibilities

24. Portsmouth Water will produce a Site Management Plan for the reservoir site, which will confirm roles and responsibilities for the management and maintenance of the site for as long as the Approved Scheme remains open and operational. The Site Management Plan will be administered by a Site Management Board.
25. The LEMP (Atkins, 2022) sets out the long-term management of habitat creation and enhancement measures undertaken within the site as compensation for each Phase. The LEMP includes objectives for the management of important landscape and biodiversity features and provides a schedule of works.

² Wetland Concept and Outline Design Report (Atkins doc no: HTR-ATK-XX-ZZ-RP-Z-0001).

6. Monitoring during Construction

26. The CEMP (doc no. HTR-RHD-P2-RE-PL-Z-0018) describes the monitoring requirements during construction of the main reservoir works. This document will be submitted to the local planning authority to discharge planning condition 5.
27. The wetland habitat will be managed and maintained between construction in Q1 2025 and the reservoir being filled. It is currently proposed that the area is mowed and kept short.

7. Timescales

28. Construction of the wetlands is due to commence in Q2 2024 and will be completed by Q1 2025.
29. At present the wetland area will not function as a wetland until 2031. Planting of wetland species will commence once the wetland has retained water.
30. The Detailed Phasing Plan (doc no. HTR-FUW-RZ-RE-DP-W-507) outlines the construction phasing and the programme to construct the main reservoir works. This document will be submitted to the local planning authority to discharge planning condition 4.

8. Record of Environmental Actions and Commitments

31. The Record of Environmental Actions and Commitments (REAC) summarises the committed mitigation measures within the chapters of the published Environmental Statement (ES) (Atkins, 2020) 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 included in the main reservoir works CEMP.
32. Ecological commitments identified in the REAC that are directly relevant to the wetlands are provided in Table 2.

Table 2 – Extract from the Record of Environmental Actions and Commitments

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 P - Pre- construction C - Construction O - Operation A - All	Completion record
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	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	Initial: Date:
B6	CH9	To protect areas of SINC 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	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. Quarterly ECoW progress reports to be provided to LPA during construction.	P, C	Initial: Date:
B15	CH9, CH15	To protect watercourses from	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	Contractual responsibilities between Portsmouth Water and PC.	P,C		

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 P - Pre- construction C - Construction O - Operation A - All	Completion record
		construction related pollution risk	Construction Industry Research and Information Associated (CIRIA) guidance on the control of water pollution from construction sites.	Pollution prevention measures will be detailed in a CEMP. The PC will have access to relevant guidance material.			
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	Initial: 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 be provided to LPA during construction.	P, C	Initial: Date:
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	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.		Work to be undertaken in accordance with licence.	P,C	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 P - Pre-construction C - Construction O - Operation A - All	Completion record
					Quarterly ECoW progress reports to be provided to LPA during construction.		
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	Initial: Date:
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	Initial: Date:
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	Initial: Date:
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.			P,C	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.	P	Initial: 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.	P, C	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 P - Pre-construction C - Construction O - Operation A - All	Completion record
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.		Agreement of detailed wetland design by LPA. Maintenance and inspection schedule of wetland.	O	Initial: Date: