

HAVANT THICKET RESERVOIR PROJECT

Design and Access Statement



FOREWORD

by Bob Taylor, Chief Executive of Portsmouth Water



I feel extremely privileged to be the Chief Executive Officer at Portsmouth Water at this moment as we submit our planning application for the Havant Thicket Reservoir.

It has taken some years to reach this stage and as a Havant-based company we're delighted to be in a

position to deliver this vital strategic water resource for the South East and create a unique leisure and wildlife environment for local communities.

Portsmouth Water has a long history since 1857 of supplying water to this area, and we've continually maintained a proud record of some of the highest service standards and the lowest water supply charges of all the water companies in England and Wales.

We believe in 'doing the right thing', a belief further embedded in our Community Pledge, launched earlier this year, and our Community Partnership, to be launched in the Spring which ensures society benefit is considered in all our decisions. Our aim is to make sure our objectives are in line with those of our communities.

Nowhere is this more important than in the development and delivery of a large infrastructure project like a reservoir, the first to be progressed in the South East since the 1970s.

This project has always had the potential to provide many additional benefits, over and above its core purpose of securing vital water supplies for our customers and those of Southern Water – ensuring we're ready for housing growth, climate change and protecting two world-famous rare chalk streams in Hampshire.

We believe we've captured that potential in this scheme, not least through the creation of a wetland for threatened bird species, extensive tree, hedgerow and wildflower planting, drought resilience and the educational, training and employment opportunities these also bring. Our plans also create a green leisure space with paths and play areas – offering priceless benefits for health and wellbeing – with a visitor centre aimed at bringing communities together.

And with our eye on future challenges, we've also considered the role we'll play in meeting our unique commitment as an industry to become carbon net zero by 2030.

We've listened carefully to the ideas and thoughts of our customers, communities, partners and regulators – held discussion groups, drop-in sessions, delivered talks, chatted on Facebook, spent time with young people and engaged tirelessly with our regulators, environmental organisations and the planning authorities. We believe this is part of the reason we have such strong support.

We think this application embodies not only our hopes and aspirations for the reservoir, but also those of the communities who will benefit and be part of its delivery, and we look forward to continuing to work in partnership with our neighbours over the months and years to come.

Bob Taylor

Chief Executive Officer,
Portsmouth Water



Visualisation of how the visitor centre could look

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Visualisation of how the visitor centre could look



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Figure 1.1: Reservoir location plan

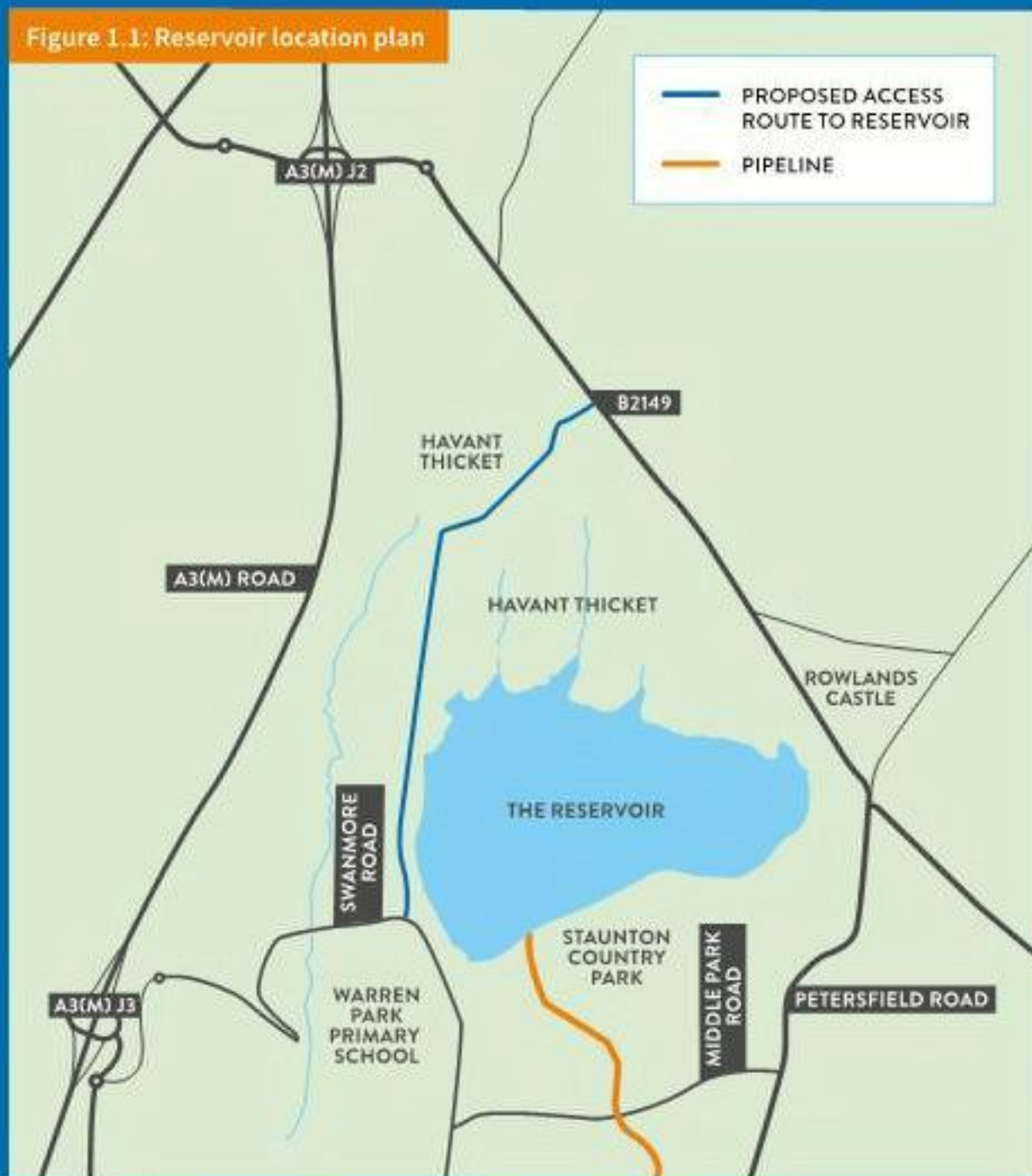
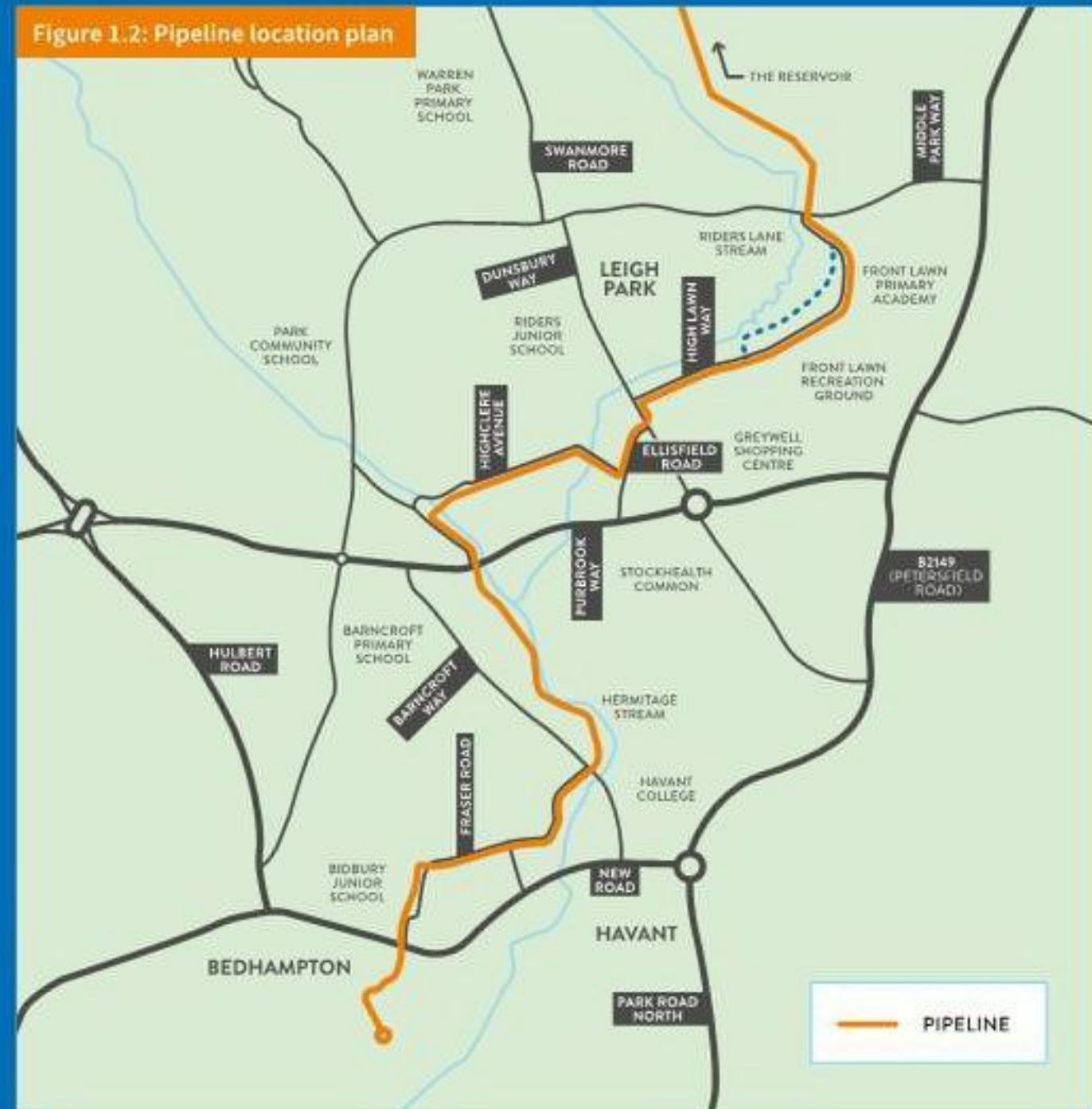


Figure 1.2: Pipeline location plan



1 INTRODUCTION

This Design and Access Statement (DAS) forms part of the outline planning application submissions for a proposed new reservoir and pipeline (the Scheme) at Havant Thicket, Havant.

- 1.1. The outline applications (one for the reservoir site and one for the pipeline) have been submitted by Portsmouth Water. As the reservoir and pipeline are a 'single project' (i.e. inextricably linked) it is supported by one Environmental Statement which assesses both the reservoir and pipeline as one Scheme. One set of documents has been provided to cover both elements of the Scheme. Both applications will be determined together.
- 1.2. Figures 1.1 and 1.2 provide the site location plan and Figure 1.3 provides an aerial view of the reservoir site. Figure 1.3 shows that the reservoir site is split along a north south alignment between the two local planning authorities of Havant Borough Council (HBC) and East Hampshire District Council (EHDC), both within Hampshire County Council (HCC). The pipeline falls entirely within HBC (Figure 1.2).
- 1.3. The objective of the Scheme is to provide a new resource to supply drinking water in the water-stressed South East of England, while maximising the community and environmental benefits of a new raw water reservoir.



Purpose and Scope

- 1.4. The purpose of this DAS is to explain the design thinking behind the development proposals (the Scheme) and describe the way in which the proposals deliver high quality design and accessibility within the context of relevant policy and site considerations.
- 1.5. The DAS forms an integral part of the application submission and should be read in conjunction with the other plans and documentation that together form the complete Planning Application submission package. The submission package is documented in the Planning Statement.
- 1.6. In particular, the baseline environmental conditions and the policy and development context for the Scheme, including the relationship with the Havant Borough and East Hampshire District Local Plans are dealt with comprehensively in the Environmental Statement (ES) and Planning Statement respectively. A summary of key points is provided here.
- 1.7. The need for development and alternative sites considered are covered in the ES and Planning Statement and summarised next. This document focuses on the selected option and looks at those issues which have shaped its design.

The reservoir will provide a new recreational facility/resource...

Overview of the Scheme

- 1.8. The reservoir, when constructed, will be filled with surplus water drawn from the springs at the Bedhampton works when flows are at their highest in winter via a new combined inlet/outlet 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. 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 internationally designated River Itchen and the nationally designated River Test 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.
- 1.9. 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).

- 1.10. The Scheme also provides for a new wetland habitat and associated area for nature conservation. The proximity of the reservoir to the internationally important 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)).
- 1.11. The proposed pipeline will also be used as an emergency draw down pipeline if the reservoir needs to be drained down in emergency conditions.
- 1.12. The Scheme is allocated in the HBC and EHDC Local Plans.

Key components of the Scheme

- 1.13. The key components of the Scheme are as follows:
 - A reservoir for raw water storage, with control house, visitor centre and car park, recreational facilities for public amenity and a wetland along the northern shore of the reservoir;
 - A new pipeline to transfer water from Bedhampton Springs to fill the reservoir in the winter and draw it off to treat and supply when needed in the summer.



CLICK HERE to see a video of Jim Barker, Head of Water Resources at Portsmouth Water, explaining why we need Havant Thicket Reservoir to secure reliable water supplies for the future.

Planning History

- 1.14. Portsmouth Water purchased the reservoir site from the Forestry Commission in 1965 and Portsmouth City Council in 1966. Since then, the land has been improved for agricultural use through the removal of tree stumps drainage, soil rotovation and improvement. The Site is let to the Staunton Country Park and managed by Hampshire County Council (HCC) who use it for grazing. Woodland to the north of the Site is owned by Forestry England.
- 1.15. Outline planning permission was granted by Hampshire County Council on 20/01/1964 for the construction of a 1,500 million gallon reservoir on a land area of 424 acres at Havant Thicket (HCC Plan No. PRD.3622). A further application for outline planning permission was granted by Havant & Waterloo Urban District Council on 16/10/1966 for the reservoir (now part of HBC). Portsmouth Water formally appealed against a new condition which was removed and a new outline consent without the condition was issued in December 1966 (HWUDC Plan no. 15413/1).
- 1.16. Portsmouth Water applied again for outline planning permission for the reservoir in 1980. The LPAs agreed 'in principle' to the reservoir but deferred granting formal permission so that further discussions could take place on the proposed means of access. In 1985, Portsmouth Water withdrew the application as water resource forecasts indicated that the need for the reservoir was not pressing at that time.

- 1.17. An Outline Plan for the reservoir was developed after extensive consultation with HBC/EHDC, the public and other stakeholders in 2008/09. This 2009 Outline Plan was not taken forward for planning permission at the time but it has formed the baseline design and the latest design exercise has sought to optimise this 2009 design taking into account the Project Drivers (see Figure 1.4), Consultation Feedback (Section 4) and Design Principles (discussed in Section 5).

Need for the Scheme

- 1.18. The majority of the South East is classed as 'seriously water-stressed' with Portsmouth Water currently sharing supplies with Southern Water in West Sussex and Hampshire of up to 30 million litres of water each day. Portsmouth Water and Southern Water are part of the Water Resources in the South East (WRSE) Group, along with the Environment Agency, Ofwat, Defra, the Consumer Council for Water and Natural England. Together this Group has developed a joined-up water strategy for the whole of the South East.
- 1.19. The reservoir was included in WRSE's regional strategy and Portsmouth Water and Southern Water's 25-year and 50-year Water Resources Management Plans, which gained approval from the Secretary of State for the Environment, and then Ofwat in 2019. Its modelling work for the region in 2017-18 identified the development of Havant Thicket reservoir as a 'prevalent' strategic option to help meet future demand.
- 1.20. The Scheme will provide over 35% of water supply need over the next 25 years, and will help

Portsmouth Water to free up existing supplies in the west of the catchment area to share with Southern Water's customers in order to meet the region's challenges in the future, in particular relating to abstraction licence changes, predicted population growth and climate change which will all place pressure on meeting future water supply demand.

- 1.21. The Havant Thicket site has been identified as the preferred location for a reservoir following numerous studies undertaken over the past 53 years. Detailed ground investigations were commissioned by the Southern Water Authority in the 1960's and 1970's to identify potential reservoir sites with suitable geological conditions. The Site Alternatives Assessment (April 2020) captures the site selection work that had been undertaken previously.
- 1.22. Seventy two potential sites were assessed across the Portsmouth Water and south Hampshire area in stage one of the assessment, 67 of the 72 sites were discounted at this stage, primarily due to the fact that the proposed source of abstraction was protected under an Abstraction Licensing Strategy (2013) and Habitat Directive which did not allow for additional abstraction beyond that currently undertaken. Only sites that could be supplied by the Havant and Bedhampton Springs were feasible
- 1.23. Five sites were taken forward to stage two namely Lumley Farm, Havant Thicket, Southleigh Forest, Southleigh Farm and Loveders Farm. The assessment of the sites against environmental, socio-economic and engineering criteria showed that there were constraints and opportunities associated with each site. However, the assessment concluded that Havant Thicket site was the preferred site to be taken forward, as it has the

largest capacity, allows for the development of areas for recreational activity that will benefit the local community, together with the potential for nature and biodiversity enhancement, requires the shortest pipeline and would result in the least impact on protected Chichester and Langstone Harbours.

- 1.24. At stage three, eight conceptual design options for a reservoir at Havant Thicket were then evaluated against further criteria and subject to stakeholder consultation. This led to the development of two further refined options which contained a combination of the best features of the favoured appraised options. This was subject to public consultation in 2008 and refined further to form the 2009 Outline Masterplan. The Scheme, the subject of the current planning applications, is a refinement of the 2009 scheme, further reducing impacts on ancient woodland and Staunton Country Park, increasing the area of retained wetland, enhancing landscaping and optimising opportunities for recreation and biodiversity.
- 1.25. A more detailed consideration of need and a summary of the Havant Thicket Reservoir Site Alternatives Assessment (April 2020) is provided in section 4 of the Planning Statement and Chapter 4 of the Environmental Statement which accompany the planning applications (see Appendix 2.1 of the ES for the full report).

Project Drivers

- 1.26. Portsmouth Water's Project Drivers provide the high-level framework which is guiding the project:



Statement Structure

1.27. The Design and Access Statement provides important and detailed information about the proposal and has been written for a wide target audience, including the Local Planning Authorities, local residents, statutory and non-statutory consultees and elected Members.

1.28. Following on from this introduction the DAS addresses:

- 2. Site and Context Analysis** – describes the existing characteristics of the site encompassing landscape and environmental features and provides an overview of the physical, social and economic context to set the baseline for design development;
- 3. Planning Policy Context** – brief overview of the key planning policy issues that set the context for the development, presenting a summary that draws from the more detailed content of the ES and Planning Statement;
- 4. Involvement** – a summary of the consultation undertaken during scheme development and the key issues informing design evolution.
- 5. Design Evolution** – the constraints and opportunities shaping the design response, options considered and design development, including how the findings of consultation have affected the proposal.

6. The Scheme – sets out the proposals with reference to the use and amount of development and the layout, scale and appearance of the development components.

7. Biodiversity Mitigation and Compensation Strategy – provides a summary of the outline strategy for mitigating and compensating for the environmental impacts of the Scheme and outlines how the design evolved to minimise loss of ancient woodland.

8. Historic Landscape Design Strategy – summarises the impacts of the Scheme on the historic environment and demonstrates the design solutions which have been incorporated to minimise impacts on the surrounding area.

9. Sustainability Statement – demonstrates how construction and operation of the reservoir meet Portsmouth Water's project drivers and the Scheme design principles, sustainability requirements of the national and local authorities, and the requirements of the organisations and communities that have an interest in its construction, operation and use.

The Design and Access Statement provides important and detailed information about the proposal and has been written for a wide target audience...



2 SITE CONTEXT AND ANALYSIS

Scheme Location

- 2.1. The Scheme includes the reservoir at Havant Thicket and the pipeline connecting the reservoir to Bedhampton Springs. This Design and Access Statement focusses on the evolution of the design at the reservoir site. The pipeline element of the Scheme is covered within the Planning Statement.
- 2.2. The reservoir site (the Site) is located to the north of the town of Havant in the county of Hampshire. The Site is split along a north-south alignment between the two local planning authorities of HBC and EHDC. The pipeline component of the Scheme lies within HBC. The boundary of the South Downs National Park (SDNP) lies to the east.

Site Context

Site characteristics

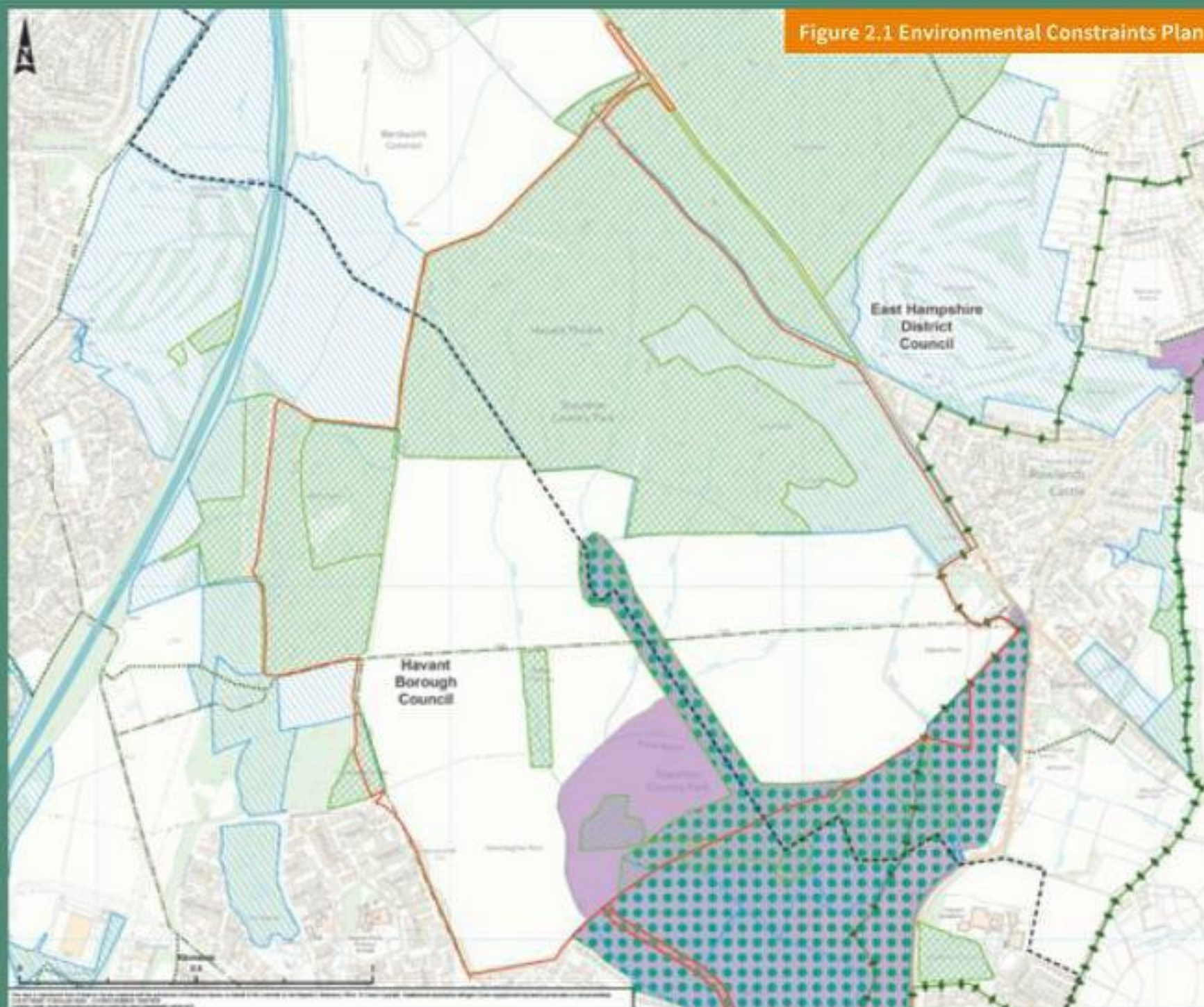
- 2.3. The Site lies within a shallow valley located between the residential settlements of Leigh Park and Rowlands Castle. It has an area of approximately 160 hectares and comprises predominantly open grassland with some woodland, hedgerows and ditches. At the centre of the reservoir site is an area classified as ancient woodland that runs from north to south that is known as The Avenue. Three other areas of ancient woodland, Middle Clearing, Round Wood and Corsican Pine Plantation, are located within the reservoir site. These woodland areas provide habitat for a range of bird, insect and bat species. A public Right of Way (bridleway) extends across the Site from east to west. Three unnamed small

watercourses run from north to south across the 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 Site are designated main rivers by the Environment Agency at that point.

- 2.4. The residential areas of Warren Park and Leigh Park lie to the west and south-west of the Site, the nearest of which are present on Swanmore Road approximately 20m from the Site. The settlements of Rowlands Castle and Stansted are around 200m east of the Site. Warren Park is located adjacent to the western boundary and Rowlands Castle, Redhill and Durrants are located approximately 160 m to the eastern boundary. Leigh Park is located approximately 480 m south-west of the Site and along the pipeline corridor. The pipeline route passes through the town of Bedhampton.
- 2.5. The woodland directly north of the Site is owned and managed by Forestry England for timber production and is also classified as ancient woodland.
- 2.6. Directly to the west of the Site are open areas of grassland and woodland known as Bells Copse and Cabbagefield Row. Some of the habitats here are classified as ancient woodland. South of these wooded areas lies the residential district of Leigh Park.
- 2.7. A large area of the Site is part of Staunton Country Park a Grade II* Registered Park and Garden, and within the Sir George Staunton Conservation Area. The area of Staunton Country Park and the Conservation Area within the Site is mainly open grasslands.

Site history

- 2.8. A comprehensive search of historic maps and archive information has shown that the Site is a man-made landscape that has changed significantly through time.
- 2.9. Initially the habitat developed from a largely open landscape to what was most likely a grazed heath / grassland with scattered trees and eventually into wood pasture, with glades, rides and open heathland areas.
- 2.10. From 1800 the area was leased by the owners of the mansion house at Leigh, but copyholders still had the right to graze animals across the Site. As the level of grazing reduced more tree growth occurred, which is likely to have been supplemented by planting undertaken by the new lease holder.
- 2.11. Historic maps indicate that woodland did not become established across the Site until the mid-19th Century. Prior to enclosure in 1870 the Site was part of the 'wastes' of the Manor of Havant and was subsequently incorporated into the Leigh Park Estate when all common grazing rights were removed. The area was planted with oak in compartments. The habitat became a managed woodland for timber, shooting and recreational pursuits.
- 2.12. In 1874 a new avenue was cut through Havant Thicket and a new lake was constructed by damming the existing smaller watercourse to the west of the new ride. The lake had a waterfall (weir), boat house and bathing house. By 1987 these features were labelled on the OS historic mapping as the Avenue and Upper Lake.



2.13. In 1953/54 aerial photographs confirm the woodland was cleared on either side of the Avenue, leaving two small recently planted, oak plantations (Middle Clearing and Round Wood) to the west of the Avenue, which were planted as a cash crop prior to 1954.

2.14. From 1966 to 1971 the Ministry of Agriculture Food and Fisheries (MAFF) funded scrub and stump clearance work to create agricultural land on either side of the Avenue. This included ripping, rotovating, ploughing, fertiliser spreading and seeding each area as it was cleared to make the land suitable for grazing. In 1973 MAFF funded land drainage works across the Site.

Environmental constraints

2.15. Figure 2.1 illustrates the environmental and heritage designations which cover the Site.

Legend

Reservoir Red Line Boundary	Ancient Woodland
Pipeline Red Line Boundary	Conservation Area
Bridleway	Local Authority District
Footpath	Registered Park & Garden
Long Distance Footpath	Site of Importance for Nature Conservation (SINC)

Historic environment

- 2.16. The historic environment within the Site includes part of the Grade II* Leigh Park (Staunton Country Park) Registered Park and Garden (RPG) and the Sir George Staunton Conservation Area. In addition, 42 designated heritage assets have been identified within 2 km of the 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.
- 2.17. The Scheme would remove a portion of the Grade II* 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.
- 2.18. The sensitivity of the historic environment has been considered in the design of the reservoir to minimise significant impacts as much as feasible given the requirements of the Scheme. The Environmental Statement (ES) includes an assessment of the historic environment and the likely significant impacts of the Scheme and is supported by a desk-based study of the historic environment baseline, including an assessment of significance for those assets within the study area. A separate Statement of Heritage Significance for the Grade II* RPG and the Sir George Staunton Conservation Area was prepared to provide additional assessments of significance and impact for those assets directly impacted by the Scheme.

Further information on how the Scheme design has considered the historic environment is included in the Historic Landscape Design Strategy in Section 8.

Ecology

- 2.19. The closest international designated sites are the Chichester and Langstone Harbours Special Protection Area (SPA) and Ramsar site and Solent Maritime Special Area of Conservation (SAC), located approximately 1 km downstream from the Bedhampton and Havant Springs (the pumping site and most southerly point of the pipeline) and approximately 3.85 km from the Site. These designated sites also have a hydrological connection to the Site and Pipeline corridor, via the Riders Stream and Hermitage Stream.
- 2.20. There are two Sites of Special Scientific Interest (SSSI) within 2 km of the Site:
- **Langstone Harbour SSSI which is 1 km south of the Pipeline Corridor; and**
 - **Chichester Harbour SSSI which is 2km southeast of the Pipeline Corridor.**
- 2.21. There are eight non-statutory designated Sites of Importance for Nature Conservation (SINCs) located within the Site:
- | | |
|----------------------------------|---------------------------------------|
| • Middle Clearing; | • Havant Thicket (South-West Corner); |
| • Thicket Bottom; | • Idsworth Common; |
| • Thicket Bottom Woods and Lake; | • Bell's Copse; and |
| • Havant Thicket; | • Cabbagefield Row |

There are additional SINCs adjacent to the Site and two SINCs partially within the pipeline corridor: Thicket Lawn SINC and High Lawn SINC.

- 2.22. There are three Local Nature Reserves (LNR) located within 2 km of the Site:
- **Hazelton Common LNR approximately 890m north west of the Site;**
 - **Dell Piece West LNR approximately 1.8km north west of the Site; and**
 - **Farlington Marshes approximately 1.6 km south west of the Pipeline Corridor.**
- 2.23. The desk study identified seven ancient woodlands within the Site, including four Ancient Semi Natural Woodlands (ASNW):
- **The Avenue;**
 - **Middle Clearing;**
 - **Round Wood; and**
 - **Part of Bell's Copse.**
- 2.24. And three Ancient Re-Planted Woodlands (Plantations on Ancient Woodland Sites, PAWS), including:
- **The Forest of Bere (Havant Thicket)**
 - **Part of Bells Copse; and**
 - **A site located within Staunton Country Park (SCP) adjacent to the Avenue.**

Priority habitats

- 2.25. Vegetation surveys identified four priority habitats within the Site; lowland mixed deciduous woodland, wet woodland, purple moor-grass and rush pasture and lowland dry acid grassland.

Public access

- 2.37. Part of the Site is The Staunton Country Park with open access to the public. This covers the Leigh Park Gardens to the south, extending to cover the Avenue right up to the edge of Havant Thicket in the north, down the edge of Bell's Copse in the west, including Cabbagefield Row and covers all the open grassland to the west of the Avenue. Open access land covers all of Havant Thicket in the North and all of Bell's Copse in the west.
- 2.38. Bridleway 121 runs along part of the west boundary, running along Swanmore Road heading north along the edge of Cabbagefield Row before meeting Bridleway 120 at right angle just south of Bell's Copse. Bridleway 120 then crosses the Site on an east west alignment. Moving west, it passes the north edge of Middle Clearing before crossing the Avenue. To the east of the Avenue it continues east past Gipsies Plain before emerging on Manor Lodge Road adjacent the War Memorial at Rowland Castle.
- 2.39. Staunton Way passes through Leigh Park gardens to the south of the Site, heading north through Hammond's Lands Copse, emerging into the site at Gipsies Plain, following the site boundary running north east before turning 90 degrees to follow the site boundary in the north east corner and connecting onto Manor Lodge Road.
- 2.40. E9 European long-distance route enters Leigh Park Gardens to the south of the Site. Coming from the south at Great Copse it crosses Middle Park Way, entering the country park and crossing High Lawn. It runs along an alignment in a north east direction through Hammond's Lands Copse to connect with Staunton Way on site at Gipsies Plain.

From western boundary of the Site looking east towards Middle Clearing



South East corner of the Site



Looking north up the Avenue



3 PLANNING POLICY CONTEXT

Policy Framework

- 3.1. The Scheme falls within the two Local Planning Authorities of HBC and EHDC:
- The reservoir and access routes are in HBC and EHDC;
 - The inlet/outlet pipeline between reservoir and Bedhampton is in HBC.
- 3.2. The framework for development is established in a cascading set of policies from national to local level. A detailed assessment of the Scheme against planning policy is included within the Planning Statement which accompanies the planning applications. A summary of the key planning policy considerations is provided below.

National Policy Framework

- 3.3. At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development based upon a number of core principles and themes. Those most relevant to the Scheme relate to:
- Promoting healthy and safe communities;
 - Promoting sustainable transport;
 - Making effective use of land;
 - Achieving well-designed places – design issues are the subject of this statement;
 - Meeting the challenge of climate change, flooding and coastal change;
 - Conserving and enhancing the natural environment – the Scheme is an environmentally design led;

- Conserving and enhancing the historic environment;
- Facilitating the sustainable use of minerals.

- 3.4. NPPF requires local authorities to make sufficient provision for water supply infrastructure and states that water supply and quality is a cross-boundary issue where there is a duty to cooperate.
- 3.5. With regard to loss or deterioration of irreplaceable habitats including ancient woodland and Veteran Trees, applications for permission should be refused unless “there are wholly exceptional reasons and a suitable compensation strategy exists” (para 175 (c). Exceptional reasons include “infrastructure projects ... where the public benefit would clearly outweigh the loss or deterioration of habitat”.
- 3.6. NPPF (paragraph 194) advises that “Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification.” Paragraphs 195 states that: “where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use”.
- 3.7. The Scheme will result in the loss of ancient woodland and has been assessed as causing less than substantial harm to the significance of the Grade II* Leigh Park (Staunton Country Park) Registered Park and Garden and Sir George Staunton Conservation Area. In response to paragraph 175 (a) and (c) and paragraphs 194 and 195, Section 1 provides a case for exceptional reasons based on the need for the Scheme and

the lack of a suitable alternative site or design solutions within the preferred Havant Thicket site. It also demonstrates that a suitable mitigation and compensation strategy exists.

Local planning policy

- 3.8. Planning law requires that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise. The Development Framework Plan comprises:
- Havant Borough Council Local Plan, made up of the Core Strategy adopted in 2011 and the Site Allocations Plan adopted in 2014; and
 - Adopted Local Plan for East Hampshire District Council as Joint Core Strategy (JCS) adopted in 2014.
- 3.9. These will remain in place until the respective Local Plans 2036 for HBC and EHDC are adopted.
- 3.10. HBC has commenced work on its replacement Local Plan 2036 in 2016. The HBC Local Plan: Pre-Submission version with changes was subject to consultation in 2019. The Local Plan 2036 examination was due to start in Autumn 2019; however, HBC has advised that there needs to be further changes to the Pre-Submission Local Plan which have arisen from responses received during the consultation relating to the issue of nutrient neutrality and additional evidence work on transport. Overall, the changes to the Local Plan could be significant enough to justify further consultation. These changes will be considered in due course and if required, there will be further consultation undertaken by HBC.

3.11. EHBC is also updating its Local Plan, the Draft Local Plan 2017 - 2036 was subject to consultation between February and March 2019. A second consultation focused on 10 large development sites and ran from September to October 2019. The Council is currently analysing the responses to the two periods of consultation.

Site allocations

3.12. The Havant Thicket reservoir and pipeline is safeguarded in the HBC Local Plan 2011 under Policy CS18 and in the EHDC Local Plan 2014 under Policy CP26, these policies provide support for the principle of the Scheme:

HBC Adopted Policy CS18 Strategic Site Delivery, includes Havant Thicket Reservoir as one of four strategic sites that are critical to achieving the Core Strategy vision.

HBC Adopted Policy CS19 Effective Provision of Infrastructure, protects the Site for the use as a reservoir, as such the principle of the development is accepted, subject to its details.

EHDC Adopted Policy CP26 Water Resources and Quality, states that development will be required to protect the quality and quantity of water and make efficient use of water. Paragraph 7.50 recognises the reservoir at Havant Thicket will not only provide further water resources but will provide a real opportunity to create a natural and sustainable recreational attraction.

3.13. The Scheme is also safeguarded in the emerging HBC and EHDC Local Plans:

HBC draft Policy KP9 Havant Thicket Reservoir, states that planning permission will be granted

at Havant Thicket for a winter storage reservoir comprising recreational provision including a visitor centre subject to certain criteria.

EHDC draft Policy S31 Havant Thicket Reservoir, states that planning will be granted at Havant Thicket for a winter storage reservoir comprising recreational provision including visitor centre and discusses the requirements for the delivery of the Scheme.

3.14. The HBC and EHDC policies for the Site are very similar, draft policy KP9 carries significant weight as it has been subject to **Regulation 19** public consultation:

Draft Policy KP9 Havant Thicket Reservoir states:

Planning permission will be granted at Havant Thicket for a winter storage reservoir comprising recreational provision including a visitor centre where:

- a) The development is sustainable, fully maintained, cost-effective and delivers environmental and community benefits;
- b) The reservoir provides additional leisure opportunities which complement existing provision in the borough and will become an attraction for local communities;
- c) Any recreational provision is appropriate to the countryside location and does not include any motorised activities acknowledging the site's primary use as a reservoir;
- d) Green infrastructure links between the rest of Leigh Park and Dunsbury Park are enhanced;
- e) Construction traffic is minimised through Leigh Park, Rowlands Castle and other residential areas;

- f) Public vehicular traffic is restricted within the site and confined to the vicinity of the main access;
- g) An appropriate means of access is established to the satisfaction of the Highway Authority;
- h) Recreation provision includes a network of paths for walking, cycling and horse-riding; and links with the Riders Lane and Hermitage Stream corridors are realised wherever possible. Footpaths, bridleways, and cycle paths should connect to existing public and permissive path network in the neighbouring area;
- i) Access and the surfacing of paths take account of the needs of all and provides seating;
- j) Natural, rural, and historic character is conserved in particular by:
 - i. Limiting impacts on biodiversity including the creation of additional habitats;
 - ii. Compensating for the loss of, and effects on, Sites of Importance for Nature Conservation (SINCs), the registered park and the conservation area;
 - iii. Ensuring that the pipeline avoids Great Copse, which should be protected during construction;
 - iv. Integrating the reservoir into the existing landscape of the area;
 - v. Minimising the loss of ancient woodland and trees;
 - vi. Appropriate mitigation measures, including buffers, are put in place for Bechstein's bat in line with Policy E15.

- k) The potential impacts on the Langstone and Chichester Harbours as well as the Hermitage Stream have been assessed under the appropriate regulations and any necessary avoidance and mitigation measures included in the scheme design;
- l) Opportunities for biodiversity enhancements associated with the reservoir and the Hermitage Stream are realised wherever possible;
- m) If possible, opportunities have been explored for the prior extraction of minerals to the satisfaction of Hampshire County Council;
- n) The potential impact of the development on the setting of the South Downs National Park has been assessed and any necessary avoidance and mitigation measures included in the scheme design;
- o) The risk of flooding has been fully assessed in a flood risk assessment and mitigation put in place to minimise all risks;
- p) The proposal realises the potential for renewable energy while taking into account nature conservation and other site constraints;
- q) Opportunities arising from the new pipe works are taken to enhance the habitats, recreation provision and cycle and pedestrian accessibility along the stream corridors.

Development proposals will not be permitted in the pipeline route buffer zone (as shown on the Policies Map), where they could prejudice the future delivery of the pipeline.

3.15. EHDC emerging Policy S31 also includes h) existing forestry track off the B2149 could be enhanced to provide access to the reservoir perimeter.

3.16. Planning policy requirements and considerations have been considered throughout the Scheme development. These requirements are summarised in Table 3.1. The Planning Statement provides more detail on how the Scheme meets the planning policies.

Table 3.1: Summary of key planning policy requirements:

Policy Themes	Summary of Key policy requirements / considerations
Leisure and recreation	• An attraction for local communities • Network of connected paths for walking, cycling and horse-riding • Green infrastructure links • Maximise opportunities for deprived areas • Opportunities for an improved quality of life • Provision of new facilities to promote tourism
Environment	• Avoid potential adverse impacts on wildlife sites, protected species and priority species • Create additional habitats • Compensate for loss of habitats and woodland • Avoid habitat fragmentation and severance of species migration and commuter routes • Consider opportunities for biodiversity enhancements at reservoir and along Hermitage stream • Improve network of multi-functional green and river corridors • Minimise impacts on Langstone and Chichester Harbours and Hermitage Stream • Minimise the risk of flooding • Avoid Great Copse • Consider the predicted future impacts of climate change • Consider renewable energy • Improve local air quality • Minimise noise pollution
Transport	• Minimise construction traffic • Restrict the use of public vehicular traffic within the site • Ensure appropriate means of access • Promote sustainable transport
Heritage and Landscape	• Protect and enhance the Conservation Area • Integrate the reservoir and new landscape within the historic landscape and existing woodland • Minimise impact on Staunton Country Park and setting of South Downs National Park • Protect rights of way

4 INVOLVEMENT

Background to Consultation

- 4.1. The work undertaken to prepare the Outline Plan in 2009 was informed by a series of public exhibitions in 2008. The consultation attracted a strong level of engagement, with over 850 exhibition attendees; 254 feedback forms received; 1895 website visits (April – September 2008); 10 stakeholder letters / emails received; and 30 community workshop attendees. All the surrounding local communities were well represented both at the exhibitions and in the feedback received. In general, feedback showed a high level of support for the Scheme and where concerns were raised, it was with the understanding that a project of this scale will inevitably have some drawbacks.
- 4.2. A Havant Thicket Stakeholder Group was formed in 2004 and consists of a range of local stakeholders, environmental organisations and regulators which have remained active throughout.

Recent Stakeholder and Customer Engagement

- 4.3. In 2009 the reservoir plans were put on hold for reasons of cost and need, but in 2019 the Government approved the need for the Scheme. To continue to maintain awareness throughout the period 2009 to 2018 several presentations were given to interested groups, including schools, as well as other activities. Portsmouth Water renewed engagement on the Scheme in 2018 with a formal consultation on its Water Resources Management Plan and Business Plan for 2020 to 2025, the results

of which showed that 87% of more than 2,000 respondents supported the plans for the reservoir.

- 4.4. The Havant Thicket stakeholder group has met on a number of occasions over the last two years. Membership has been refreshed to ensure appropriate representation from the local community, environmental groups, planning authorities and regulators and it will continue to play a key role in informing and reviewing the design. There will be further opportunities for all stakeholders to input into the design, raise new issues and influence the design and construction of the Scheme as it continues to develop.
- 4.5. Portsmouth Water has used a range of communications channels to keep a wide variety of stakeholders (from members of the public, to UK government officials) updated and able to engage on the Scheme in a way that suits them. In particular, this has included increasing its use of digital platforms. For example, it created a dedicated Havant Thicket Reservoir Facebook page, which attracted more than 102,000 page impressions during the May / June 2020 public consultation on the project alone.
- 4.6. National, regional, local and trade media have all been briefed and updated on progress with Havant Thicket Reservoir at regular intervals, resulting in good coverage of the Scheme – for example, on BBC South Today TV and BBC Radio Solent and in the Portsmouth News newspaper / website. Features in the Portsmouth News on the reservoir, to highlight the May / June 2020 consultation, reached a total of 102,000+ people.

- 4.7. Key engagement activities over the last year has included:

October / November 2019

- A mailshot was sent to 27,000 local households informing them of the ground investigations and providing details of the need for the scheme.
- Emails were sent to a range of local and regional stakeholders updating them on plans for the scheme and offering briefings.
- Three drop-in events were held for the local community in the Leigh Park and Rowlands Castle area to explain the early ground investigation work and answer questions about the Scheme.

January-April 2020

- A workshop was held with the Havant Thicket Stakeholder Group to discuss options (e.g. access, car park locations, visitors centre). Photos – see Stage 1 report
- Ongoing meetings with stakeholders in the Hampshire area.
- Ongoing engagement with key statutory consultees, including the LPAs, Hampshire County Council, Natural England, Historic England and Environment Agency, to address specific design issues and discuss mitigation and compensation proposals.

May/June 2020

4.8. Due to the Coronavirus situation we were no longer able to hold face to face public engagement. Portsmouth Water revised its plans to include the following activity:

- A comprehensive suite of consultation materials on the project website via a digital exhibition section (including an animated fly-through, interactive consultation booklet, complete with maps, images and videos/podcasts with the specialists on different elements of the scheme);
- A feedback form;
- Clear signposting on project website to email / phone / post details for people to raise queries / comment;
- A series of consultation webinar sessions, with a live Q&A session after each webinar presentation via webchat facility;
- Live Q&A sessions via HTR Facebook page, where there is an already engaged audience;
- A leaflet posted to 50,000 households;
- Posters on-site and in retail premises within the local communities;
- Promotional materials and press releases also included clear signpost to non-online contact channels so that comments could be received via phone and post (e.g. phone call to talk to customer, sending consultation information in hard copy format, with feedback form).

4.9. The Havant Thicket Reservoir pages on the Portsmouth Water website were updated and expanded, with an additional virtual exhibition created for the May / June 2020 consultation, attracting 4,180 visits during the consultation period.

4.10. More broadly, an ongoing stream of engaging content was developed and broadcast via the digital platforms, e.g. a series of short films on a range of topics, which were viewed over 9,700 times online, and different engagement tools, such as an online map where people could place a digital pin, including a comment, about the access route options for the reservoir and the proposed reservoir pipeline route.

4.11. Importantly, people have always also been offered the option of engaging by more traditional means, such as by post or phone, with 1,350 printed brochures and feedback forms sent out during the May / June 2020 consultation, for example.

4.12. The originally planned series face to face public exhibitions were replaced by one stakeholder webinar and six public webinars. These proved very popular, with very positive feedback from attendees, 156 people joining the public sessions overall, with the webinar recordings watched online over two hundred times.

4.13. Engagement with key stakeholders and statutory consultees was ongoing during this period via skype/conference calls.



Portsmouth Water has used a range of communications channels to keep a wide variety of stakeholders (from members of the public, to UK government officials) updated...



CLICK HERE to take a virtual tour of the Havant Thicket Reservoir.

Consultation Feedback

4.14. Feedback received has demonstrated a high level of support for the reservoir proposals, most recently with 80 per cent of people completing the consultation feedback forms during the 2020 public consultation period either strongly agreeing or agreeing with the proposals, and 90 per cent support from young people. The most frequent concerns related to the loss of ancient woodland and traffic impacts. A Woodland Trust Campaign was set up and 1,375 template emails were received objecting to the location of the reservoir and urging an alternative site to be found if the Scheme couldn't be redesigned to avoid the loss of ancient woodland.

The design work in 2019 and 2020 took on board many of the stakeholder and community concerns and included measures to reduce impacts on ancient woodland and Staunton Country Park, including realignment of the embankment, relocating the visitor car park, retaining an area of woodland within the wetland and redesigning the pipeline route to avoid Great Copse ancient woodland.

In response to the 2020 consultation, a new approach was developed to vehicular access combining both access options which will 'dilute' the construction and visitor traffic that will use either route, and reduce the loss of ancient woodland there by 45 per cent by halving the width of the proposed northern access route into the Site.

4.15. A full summary of the feedback received and our responses to the issues raised can be found in our Spring Consultation Report 2020, appended to the Statement of Community Involvement which accompanies the planning applications. Key changes and additions to our design, emerging from the consultation have been summarised in the table below.

Table 4.1: Summary of key concerns and the design response:

Concern about...	Our design response
The impact of construction, on residents, the environment and transport	Developed a combination of both access options proposed, doubling our options for construction traffic coming in and out of the site, creating opportunities to reduce the impact on local communities.
The loss of ancient woodland	Updated the design of the northern access road, to a single lane single carriageway with passing bays, halving the width of the road and reducing the associated loss of ancient woodland by 45%.
Traffic impacts of either access option on local roads and the loss of ancient woodland from the northern option	Developed a combination of both the northern and southern options, to 'dilute' the impact of either route on local roads. Splitting the traffic between two access points also made the reduction of the northern access to a single lane possible, reducing the associated loss of ancient woodland by 45%.
A combined access becoming a 'rat run' and endangering wildlife	The revised, single lane northern route will deter rat runners and both roads will lead to a wooded car park, rather than create a direct route through the site; slowing down traffic and ensuring connectivity for wildlife.
Trails being shared by walkers, cyclists and horse riders	Designed the main circuit to be 4m wide, rather than the 3m minimum recommended by Hampshire County Council guidance. A separated track of the same width will also run alongside the southern vehicle access route.
The development not blending in with the landscape.	Inclusion of a 'green roof' for the visitor centre, providing a more natural look and additional habitat; and a topsoil brush for parts of the rocky embankment, creating a greener appearance, with reeds and sedge grasses.
The impacts of visitors on wildlife and habitats on the site.	Inclusion of gated pathways to stop dogs accessing the wetland viewing areas; and banks, barriers and planting, to keep people away from the most sensitive habitats.
Antisocial behaviour on the site	Consideration of special access gates for bridleways, designed to stop motorcycles; security fencing around the control house; and safety equipment for accidents occurring from unauthorised swimming.

5 DESIGN EVOLUTION

5.1. Portsmouth Water's Project Drivers (in Section 1) provide the high-level framework which is guiding the project. These drivers have informed the Design Principles. The Design Principles respond to the site characteristics and planning policy context and have been used as a framework to guide the reservoir design.

Key Environmental Design Factors

5.2. The following environmental design principles are embedded into the design of the Scheme:

- Create a safe environment to work and play. Use creative and intelligent design to minimise any short and long-term health and safety issues.
- Maintain and integrate with the rural landscape character and woodland setting, through the design layout and material selection process, and where possible developing soft engineering solutions - limiting structures and ancillary clutter.
- Design to be sympathetic to and blend in with the historic park and gardens landscape. Specifically considering impact on setting and views to and from the designated sites including the Grade II listed park and gardens, conservation area and South Downs National Park.
- Design to minimise whole life costs such as maintenance and need for replacement ensuring durability in a challenging public setting and flexibility in the design to manage future requirements.
- 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.
- Optimise educational opportunities in all design elements.
- Maximise opportunities for biodiversity in the design of the landscape and buildings and minimise and mitigate any conflict with wildlife through forward planning.
- Where possible avoid ancient woodland, an irreplaceable habitat, and maintain a minimum 15m gap as buffer along the boundary.
- Incorporate public art into the design in an innovative and robust way.
- Incorporate interpretation of the wider historic landscape and connections to the Grade II* RPG at Leigh Park and Sir George Staunton Conservation Area
- Optimise opportunities for a sustainable design where practical to include:
 - Improving energy efficiency in base design, consider decentralised low carbon energy sources to achieve an overall improvement in operational energy efficiency.
 - Improving climate resilience of the reservoir, ensuring management of reservoir flows, considering whole life sustainability impacts.
 - Minimising material quantities as much as possible and select alternative low carbon materials in design wherever possible.

- 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.

Evolution of the Design

5.3. This Section outlines the considerations that have informed the design of different elements of the Scheme including: environmental, sustainability, heritage, traffic, health and safety, buildability and stakeholder feedback. It also summarises the studies that have been undertaken to look at different design options. Further detail can be found in the Engineering and Design Report which accompanies the planning applications. Section 6 focusses on the final design and explains the 'outline' nature of the planning application.

Embankment

Sustainability and environment

- 5.4. The embankment design has been progressed in accordance with the following design philosophy:
- Materials to be used in the embankment must be sourced from site as much as possible;
 - Off-site disposal of materials found on site will be avoided as much as possible except for materials exported for sale;

- Materials will be selected that will be sustainable and suitable for the rural context of the reservoir in a country park. Importing of materials not found on site will be minimised as much as possible; where required the aim will be to utilise local sources where appropriate;
- The target reservoir volume storage capacity will be achieved in as lean a manner as possible with a 'Soft engineering' approach integrating embankment into the natural landscape, taking account of design principles and resulting in slope gradients that reflect local landform;
- Realignment of the embankment to respond to environmental constraints.

Health and safety

5.5. Health and Safety by Design principles have also been applied in the design and planning of the reservoir. Key risks were identified in relation to: construction; operation and maintenance and public amenity use. Dam safety design has been ensured by compliance with the Reservoirs Act (1975) in appointing a Qualified Civil Engineer under the appropriate panel (in this case the All Reservoirs Panel) to supervise the design.

Construction programme

- 5.6. Managing protected species on the Site, specifically within woodland areas, has influenced the timing and distribution of the earthworks construction on site.
- 5.7. The key elements of the proposed construction sequence are as follows. This is an indicative programme which will be subject to change:

Table 5.1: Indicative Construction Programme

Dates	Key activity / milestone
Spring 2021	Planning permission expected.
Spring 2021 – November 2022	Commencement of works. Species relocation, tree felling, preparatory work on habitats avoiding breeding / nesting seasons, enabling works including access road construction.
March 2023 – September 2026	Construction of culvert structure, embankment and reservoir control house.
Autumn 2026 – Spring 2029	Construction of visitor facilities. Filling of reservoir in stages with pumped water from Bedhampton Springs. Testing and commissioning.

5.8. Considerations of buildability and associated safety issues have influenced changes from the 2009 Outline Plan, such as the relocation of the reservoir culvert to avoid groundwater issues and instability of the ground along the route in the reference design.

Embankment realignment options summary

- 5.9. An options exercise was undertaken to address the following issues identified with the 2009 design and layout of the embankment:
- Encroachment onto the western site boundary and adjacent ancient woodland, with no space for access roads or tracks;
 - Excessive loop in the route to the south west part of the embankment;

- Encroachment onto Round Wood and the Avenue ancient woodland which could be minimised.

5.10. The study concluded a combination of the options identified was preferred to address the issues identified, including realigning the embankment crest route and length, and steepening downstream slope in places.

Steepening of inside embankment slope

5.11. As part of the design review study, analysis was carried out to test the feasibility of increasing the gradient of the inside slope from 1:7 to 1:5. The assessment focussed on the southwestern corner of the Site at the location of the highest section of the embankment. The analysis demonstrated that the slope of the inside face (upstream) of embankment could be increased from 1:7 to 1:5 for the whole length.

5.12. Steepening the upstream slope has the following engineering and environmental benefits:

- Reduced construction time of earthworks;
- Reduced visual impact of exposed upstream face during drawdown of the reservoir (with slope length reduced by around 2m for every 1m drop in water level);
- Reduced length of embankment culvert and pipelines (by approximately 38m);
- Increased space for topsoil and other material storage between the embankment footprint and the borrow pits;
- Reduced vehicle movements / emissions transporting material.

- 5.13. Further analysis will be required so, to maintain flexibility, the planning application includes a range of gradients from 1:7 to 1:5.

Control House

Sustainability and environment

- 5.14. The embankment culvert and control house structure design has been progressed with the following considerations in mind:
- Structures to be sensitively designed in the context of being either near to or in the Conservation Area, the Staunton Country Park and Registered Park and Garden;
 - The location of any structures within the Conservation Area would require justification and minimisation of their visual and environmental impact;
 - The ancient woodland areas of the Avenue and the Round Wood are irreplaceable and so any loss of trees must be minimised as far as reasonably possible;
 - the visual amenity of visitors to the reservoir site using the public rights of way

Health and safety

- 5.15. Safety in design principles have been followed in the assessment of the location of the culvert, and the design of the control house layout, with risks highlighted throughout a review process which engaged Portsmouth Water operations managers.

Function

- 5.16. The control building is required to house operational equipment for the control of potential emergency discharge of the reservoir, and the equipment required for daily running of the reservoir, including sampling and mixing instrumentation.
- 5.17. There are two distinct areas to this building: the main control house and secure external zone, which will be used for employees maintaining the equipment. The other area is the maintenance store, which will have a separate entrance and be used by employees and volunteers maintaining the site. The building will not be accessed by anyone but Portsmouth Water maintenance staff.
- 5.18. The following functionality is required for the Control Building:
- Control interface to allow remote or local control of valves to enable:
 - Reservoir filling and replenishment from Bedhampton Springs via new pumps
 - Supply of reservoir water to Farlington via new Bedhampton booster pumps
 - Compensation flow to local Riders Lane stream
 - Emergency drawdown of the reservoir
 - Equipment to support in-reservoir mixing, to prevent stratification of the reservoir and associated water quality risks, including to drinking water safety (e.g. solubilisation

of metals compromising treatment) and environmental water quality deterioration (e.g. increased algal blooms).

- Abstraction sampling, monitoring and control equipment to mitigate hydrocarbon and nitrate risks
- Power supply for the above equipment.

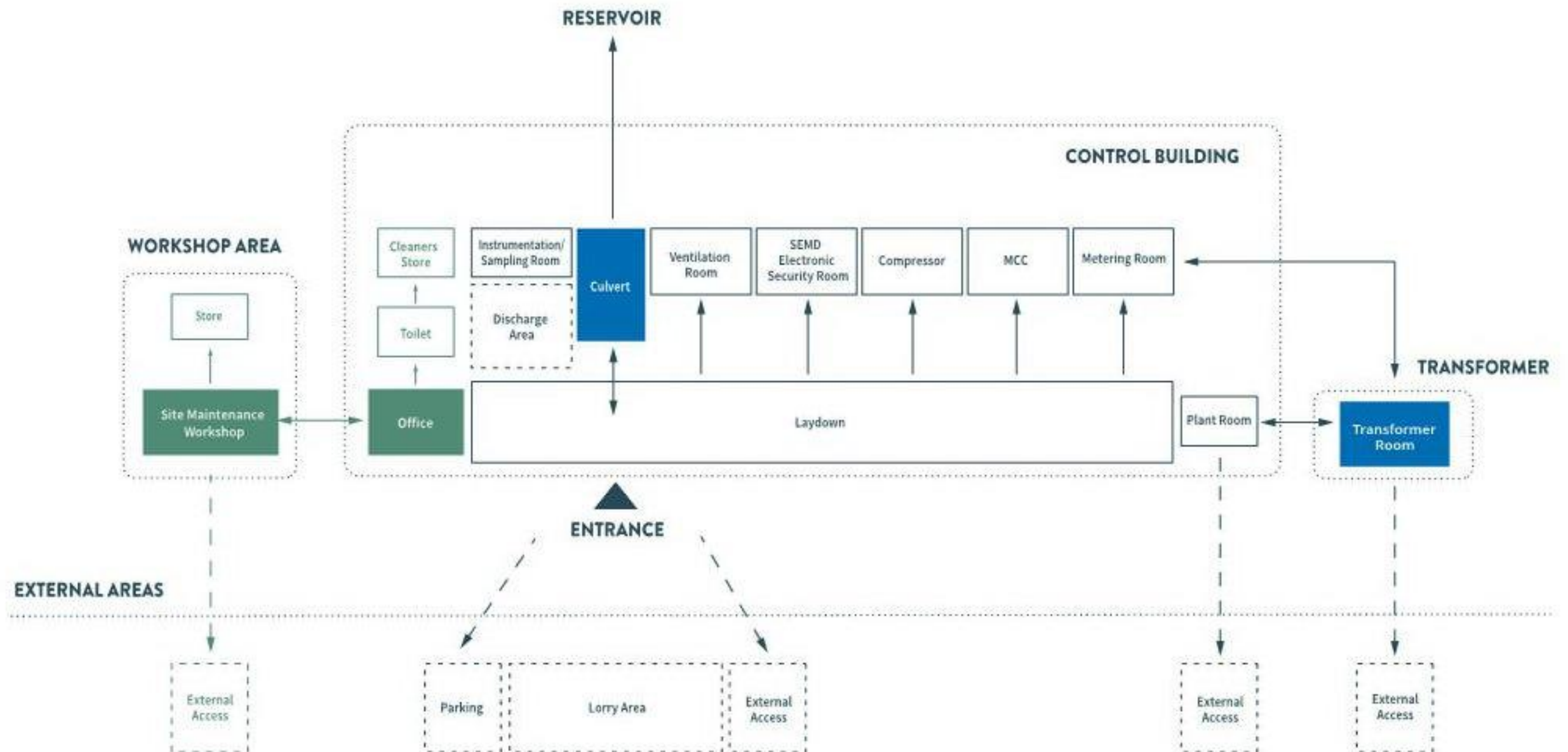
Layout

- 5.19. Figure 5.1 shows the relationship and connectivity between the areas. The following has been shown:

- There would need to be an entrance, which relates to the culvert, to allow for vehicles to offload equipment and pipes;
- The transformer would need external access by the Distribution Network Operator, who it is assumed would own the transformer (as is the case for other Portsmouth Water assets).

The control building is required to house operational equipment for the control of potential emergency discharge of the reservoir...

Figure 5.1: Diagram illustrating how internal layout would need to function



- 5.20. The 2009 design for the control house proposed as a 2 storey concrete structure, not embedded in the landscape, and with a prominent external discharge pool area.
- 5.21. The following issues needed to be addressed to improve or update the 2009 design of the control house:
- **The control house building should be moved further into the embankment (to reduce visual impact);**
 - **More space in the building was required for the rooms and facilities not included in the reference design plan;**
 - **The wide-open discharge pool should be replaced with a smaller structure without the associated open body of water (to reduce the safety risk of people seeing it as a swimming pool and drowning);**
 - **The valves for the isolation / emergency discharge and compensation flow pipes should be made more accessible and also more secure.**
- 5.22. A schedule of accommodation was developed reflecting discussions of the room requirements with Portsmouth Water to provide the worst-case scenario of building envelope to inform the outline planning application.

Wetland

- 5.23. The reservoir provides a great opportunity to create an exciting new leisure facility and wildlife conservation area for local communities.
- 5.24. Wetlands are a vital habitat for wildlife and people, but they are coming under increasing pressure from pollution and droughts. The proposal to create a sustainable wetland along the northern shore of the reservoir will offer a new home for a wide range of wetland wildlife and an area to be experienced and enjoyed by the public.
- 5.25. We have been working closely with a dedicated wetland group, including the Environment Agency, Natural England, Hampshire County Council and the Hampshire and Isle of Wight Wildlife Trust, to develop our plans for the wetland, to create the best habitat for wildlife and experience for visitors. This includes building a retaining clay structure to make sure water can be held in the wetland all year-round, even in a dry summer, and protect it from droughts, which are likely to happen more often because of climate change.
- 5.26. Building on the concept of retention first developed in 2009, several wetland retention options have been explored including partial retention, extended retention and compartmentalisation of the retained wetland area. The outline design has been stress-tested at key points and subject to ground truthing onsite with the wetland group to ensure the delivery a robust, workable, buildable and locally-relevant design that reflects the full range of environmental, recreational and stakeholder requirements of the project.

- 5.27. The wetland area is one of the key delivery mechanisms for compensating for biodiversity losses associated with the build and, in combination with the overall mitigation package, will accord with local and national planning policy.

Sustainability and environment

- 5.28. The outline wetland design has been progressed with reference to the following key design objectives:
- **The need to provide a retained wetland area as valuable wildlife habitat;**
 - **Creation of resilient wetland habitat which will thrive and can be managed and maintained so that it provides a viable asset for the design life of the reservoir and its operational scenarios;**
 - **To create a diverse wetland ecosystem which provides wider habitat connectivity within the context of the site;**
 - **To provide a site for people and education.**
- 5.29. The wetland retaining structure design has been progressed with the following sustainable design principles in relation to:
- **Materials to be used in its construction to be sourced from site as far as practically possible to limit the requirement for material imports;**
 - **Its siting to allow for what will be the operational area of the wetland area to be used for surface water management during construction;**

The wetland area is one of the key delivery mechanisms for offsetting biodiversity losses...

- Any wetland vegetation that establishes within the surface water management system to be retained for inclusion in the operational wetland;
- Associated surface water management pipework will be designed so that in operation it can be adapted to provide the required active wetland water level management control;
- The structure will be designed primarily as an engineering feature with built-in wetland habitat complexity (i.e. berms and shelves to facilitate wetland vegetation establishment) to retain water and to protect the retained wetland area from the effects of wave action;
- Retaining structures will be designed to incorporate predominantly passive (no operation required) control as the mechanism by which water level management can be provided. This will be achieved through the provision of appropriately armoured spillways;
- The design and indicative location of seasonally inundated island (within the retained wetland area) and ephemeral shallows and raised areas with a target of achieving a neutral cut and fill balance;
- Existing intermittent stream inflows and high points in topography to both inform the alignment and compartmentalisation of the retained wetland – thus reducing required material for construction and improving sustainability in the long-term;
- The armoured downstream face of the retention structure to be designed to allow for the integration of bioengineered solution to 'green' the armoured face;

- Compartmentalisation of retained wetland improves resilience and protects against failure of the retention structure i.e. not all wetland would empty should part of the retention structure fail;
- Preference is for natural vegetation/wetland species colonisation as this often results in improved species complexity, although it is recognised that some over planting from imported nursery stock may be required at key locations.

Visitor Facilities

- 5.30. Planning Solutions Consulting Limited (PSC) was commissioned by Portsmouth Water to undertake a study to identify and assess potential visitor numbers and provision for car parking. Their findings are included in the report 'Havant Thicket Winter Storage Reservoir: Visitor number and recreational amenity facilities review, July 2019'.
- 5.31. The study looked at three different scenarios related to three different levels of intensity of recreational provision;

Current Situation

- Visitors (annually) - 93,000
- Car park – Forestry England car park off Manor Lodge Road

Scenario 1 – Low Level

- Projected visitors (annually) – 188,501
- Car park – main car park 70 & overflow 20 26 (Plus staff spaces, coaches/minibus and disabled)

Scenario 2 – Medium Level

- Projected visitors (annually) – 318,000
- Car park – main car park 193 & overflow 70-75 (Plus staff spaces, coaches/minibus and disabled)

Scenario 3 – High Level

- Projected visitors – 425,037
- Car park - main car park 281 & overflow 81-120 (Plus staff spaces, coaches/minibus and disabled)

- 5.32. The market analysis and facilities review resulted in the different options for visitor numbers. They produced a weighted matrix analysis which was based on the priority strategic objectives for the scheme. This resulted in Scenario 2 – Medium Level emerging as the highest scoring option.
- 5.33. The findings concluded that scenario 2 has the strongest fit with the key objectives considered and the Site's environmental capacity. The scenario is also best aligned with the planning opportunity and community aspirations. It is also considered that this option would fit best with the identified main user market group, which is likely to be families and older people.
- 5.34. A workshop was held with the Stakeholder Group in March 2019 where three scenarios were presented and discussed and the findings informed the final report. There was a high level of support for a scenario with medium level of activity where the quiet and rural nature of the Site was maintained and facilities complimented those provided at Staunton Country Park.

Figure 5.2 – Vision for the Visitor Centre



5.35. Local Plan policies state the need for this Scheme to provide leisure and recreational activities for the community. A visitor centre and educational bird viewing hide are proposed to support these activities, they will be located at the North West corner of the Site. These buildings will showcase the conservation aspects of the Scheme and provide facilities for a wide range of users and the local community to use and enjoy.

Visitor centre vision

5.36. A vision and clear objectives for the visitor centre and educational bird hide emerged from a background review and discussions with Portsmouth Water.

Community

- This Site sits between two established communities, Rowlands Castle (north east) and Warren Park (south west), therefore, the Scheme will have an impact on many local inhabitants.
- The visitor centre is in a key location for community use and will provide information to a wide range of people about the work of Portsmouth Water.
- The reservoir and visitor centre will form an important recreational facility which will enhance visitor's health and well-being.

Nature

- The Site will consist of woodlands, grasslands, wetlands and a reservoir which will support a wide variety of nature and animals. The building will sit within this landscape and will complement the natural surroundings. The centre should showcase a connection with nature and the reservoir, in both its location and materiality.

- Sustainability is key element within the design. This building will reinforce the need to look after the environment and nature.

Heritage

- The Site is adjacent to Grade II* Leigh Park RPG and Sir George Staunton Conservation Area and would remove features associated with these heritage assets. The visitors centre will provide information to visitors about the history and archaeology of the Site.

Water

- The most significant landscape modification to the site will be the large expanse of wetlands and reservoir. One of the main benefits of the wetlands will be the encouragement of different wildlife and bird species to the Site. The visitor centre will play an important role in showing and informing visitors of the connection to water, creating a space with views to the wetlands and reservoir.



Stakeholder engagement

CAR conference

5.37. The annual conservation, access and recreation (CAR) conference was hosted by Portsmouth Water in November 2019, with attendance from key members of UK water companies. This allowed Atkins to gain insights and advice from other water companies who also have visitor centres and recreational areas on their sites. Atkins produced 3 boards setting out considerations and options for different elements of the design; Site Access, Visitor Centre Location and Visitor Centre Facilities, which were then discussed in groups.

5.38. The outcome was:

- A preferred waterside location for the visitor centre and education hide;

- Consensus on embedding the visitor centre in the landscape, and creating the connection with water by surrounding the centre with the wetlands;
- Designing for multi-use access for all;
- Volunteer and ranger facilities should be provided;
- Ability to extend café with the use of a terrace on the visitor centre;
- Large changing rooms not required if there is no water-based activity.

Havant Thicket Stakeholder Meeting

5.39. A workshop with the Havant Thicket Stakeholder Group was held on Tuesday 4th February 2020, bringing together representatives from a broad range of organisations, including local councils,

Forestry England, walking and cycling groups, wildlife groups, community organisations and schools, to discuss and feedback on key issues surrounding the reservoir project.

5.40. The outcome was:

- Support for a bridge concept, and waterside location, as part of the visitor centre, providing additional wildlife experience. This would also provide security if a drawbridge type mechanism was used (such as in Brockholes Visitor Centre, Lancashire Wildlife Trust by Adam Khan Architects);
- Suggestions of separate volunteer facilities, including tea and coffee equipment and space for tools and equipment;
- Support of natural materiality for the buildings in keeping with the proposed landscape setting.

5.41. A wide range of visitors are expected to use the reservoir, visitor centre and educational bird hide therefore, the following requirements were considered in the evolution of the design to meet the requirements for different user groups.

Figure 5.3: Visitor Centre Location Options



One of the CAR workshops



A wide range of visitors are expected to use the reservoir, visitor centre and educational bird hide...



Accessible users



Cyclists



Dog walkers



Older users



Bird watchers



Families



School groups



Runners



Walkers

User experience

Entrance

- The experiential journey, the threshold and entrance into the visitor centre is key for visitors. There is a simplicity and legibility in creating a single entrance point into the visitor centre. The entrance should display information such as a sightings board, trails and maps of the landscape.

Public and Private

- One of the design principles for the project is for a separation of the public and private spaces. The private areas will be more enclosed, with the public areas more open and transparent with clear views and connection to the surrounding wetlands and habitats.

Views

- Views from the centre will be important in creating a connection with the wildlife and habitats within the surroundings. A large glazed area to the wetlands will allow for clear views over the reservoir and wetlands, this, providing the public with a connection to the natural surroundings that have been created.

Flexibility

- Interpretation should be integrated to the visitor centre design and visible on entry. There is a synergy between interpretation, cafe and education spaces and an opportunity to create a more open, dynamic and flexible space. These spaces could be used separately or opened up to create a larger space to accommodate more people.

Site Access

- 5.42. We'll need to create a new public road for vehicles to get in and out of the Site, both while the reservoir is being built and when it opens to the public.

A fresh look at the options

- 5.43. Options for the access road were last looked at back in 2006-08. Since then the local area has changed so it was important to look at all the options again. There is more development to the south west of the site and there is planning permission for a residential and mixed-use development just to the north of the site (Land East of Horndean).

- 5.44. These and other plans for development in the area mean there are new challenges and opportunities to consider so we've carried out another review of the all the old options and reviewed new ones. Each option was assessed in terms of the impact on the environment, the engineering and construction and how it fits into the overall project. Our review has shown there are now two potential access points to the reservoir – from the north and from the south (see Figure 5.4) . The north option performed better at keeping traffic away from residential areas but resulted in some ancient woodland loss. The southern option performed best in minimising impact on ancient woodland but will result in traffic passing through residential areas. The two options were presented at public consultation as either one or the other, or a combination of both.

- 5.45. The optioneering process is summarised in more detail in the Engineering and Design Report.

The northern access option

- 5.46. A number of routes from the north were considered during the public consultation in 2008 and the preferred one came from the A3(M) Junction 2 (J2) via the B2149. At the time this was supported by a majority of people because it was close to the A3 (M) and avoided residential areas in Warren Park and Rowlands Castle.
- 5.47. From the B2149, 200 metres of new track would be needed through woodland, then the road could join an existing Forestry England track in Havant Thicket to reach the reservoir. There were, and still are, concerns about the impact of more traffic on the B2149.

The southern access option

- 5.48. As we have studied the reservoir site in more detail over the last few months, we've been able to make changes to the design of the embankment, and this has created more space on the south west side of the Site. This means there is enough space there now to build the embankment, an access road and a separate path for walkers, cyclists and others. So we could create an access point from the south, as well as a northern one.
- 5.49. This access point would come off Swanmore Road and follow a new road on the Site along the side of the reservoir and up to the car park and visitor centre.

Figure 5.4: North and South Access Options



Landscape

5.50. The development of the environmental design must provide a site-specific response to the existing character of the landscape. One of the core objectives is to preserve the unique setting and rural character of the landscape. Both the landscape design and amenities provided within it have been progressed with the key design principles at the heart of the process, as set out at the start of this Section. These can be summarised as:

- The design to be sympathetic to the historic park and gardens whilst working with and around the ancient woodland;
- To maintain and integrate the rural landscape character and woodland setting;
- To ensure design is appropriate for all abilities and ages;
- To maintain and enhance public access;
- To create a safe environment;
- To incorporate recreational facilities in keeping with the local context;
- To optimise educational opportunities;
- To maximise biodiversity;
- To minimise maintenance costs; and
- To incorporate public art.

5.51. 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.

- 5.52. The local community will be able to access this new facility and the amenity resources it provides through sustainable, active travel, on foot, by bike, or through existing bus routes. The reservoir offers further opportunities to improve the public right of way networks in the wider area.
- 5.53. More than 29,500 people live within walking distance of the site (1.5km) and 120,000 people live within cycling distance of the site (4.5km).
- 5.54. Within the area, opportunities for walking and access for the elderly is currently undersupplied. Havant Borough Council specifically expressed a need to ensure provision for improved opportunities.
- 5.55. In the 2008 public consultation, horse riders expressed a desire to have a circular bridleway route. After recent conversations with the local horse rider representative they are keen to have safe access provided with a route into Havant Thicket to the north where local riders have permits from Forestry England. The current bridleway has a blind exit onto the Manor Lodge Road and local horse riders are choosing not to use this for safety reasons.

One of the core objectives is to preserve the unique setting and rural character of the landscape.

Figure 6.1: Outline masterplan



Key:

- Red line boundary
- Permissive path - pedestrian use (existing)
- Permissive path pedestrian use (proposed)
- Bridleway - pedestrian, cycle and equestrian use (existing)
- Bridleway - pedestrian, cycle and equestrian use (proposed)
- Path - pedestrian and cycle use (proposed)
- Existing cycle path
- ... Long distance path
- Temporary bridleway diversion (will be reinstated to permissive path access)

- | | | | |
|--|-----------------------|--|----------------------|
| | Bird watching | | Car Park |
| | Children's playground | | Vehicle access point |
| | Picnic area | | Entrance point |
| | Viewing point | | |

- | | | | |
|--|-----------------------------|--|-------------------------------|
| | Existing woodland | | Proposed wet grassland |
| | New woodland | | Proposed embankment grassland |
| | Proposed wet woodland | | Proposed wetlands |
| | Proposed scrub regeneration | | Proposed reservoir |

6 THE SCHEME

Landscape

- 6.1. The section sets out the final proposals with reference to the use and amount of development and the layout, scale and appearance of the development components.
- 6.2. The application for the reservoir site will include vehicular and pedestrian accesses, an operational control house and visitor facilities - a visitor centre, bird hide, car park and recreational walking and cycling network. The level of detail required for different elements of the Scheme has been discussed and agreed with the local planning authorities. More detail is required in some areas to allow the local planning authorities to determine the impact of the proposal on the sensitive ecological, landscape and heritage setting of the Scheme.
- 6.3. An outline application is being submitted for the reservoir site with some details reserved for approval at a later stage. These will take the form of reserved matters applications. Detail which is covered within this application (and is not reserved for a later stage) includes:
- Appearance
 - Means of access
 - Layout
 - Scale
 - Strategic landscaping

Figure 6.2: Visualisation of the Scheme at the Reservoir Site



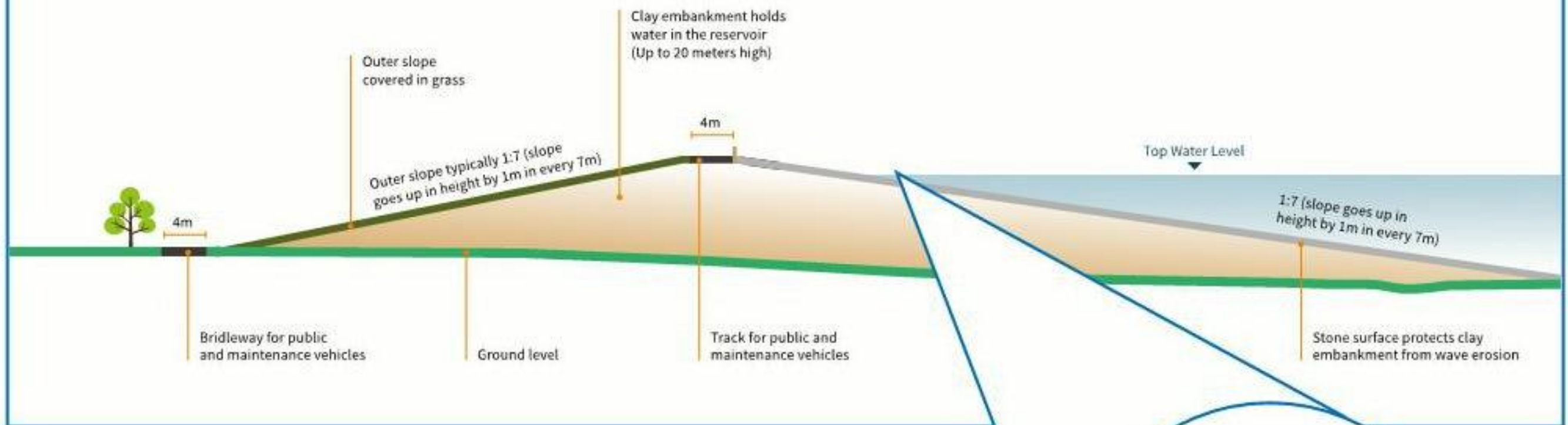
- 6.4. Following approval of this outline planning application, reserved matters applications would be prepared and submitted for approval in relation to the areas we are providing less detail on at this stage, notably:
- Visitor centre and bird hide;
 - Viewing area;
 - Control House;
 - Layout of the north west corner including visitor centre, car park and bird hide;
 - Embankment profile/toe (apart from interface with Staunton Country Park we have provided detail on);
 - Wetland area;
 - Children's play areas.
- 6.5. Design parameters ('maximum envelopes'), visualisations and key design principles in relation to all these areas are provided within this planning application to help inform their assessment and to guide future reserved matters applications.
- 6.6. The parameters are set out within this section but the Development Specification document, which accompanies the planning applications, provides more detail on exactly what the applications are seeking permission for. Figure 6.1 illustrates the Outline masterplan.

Embankment

- 6.7. The reservoir will sit within a valley mostly lined with clay, which acts as a natural seal for water. So, we will be able to dig and shape the reservoir, using the existing material on the Site.
- 6.8. The reservoir will be about one mile (1.6 km) long from east to west and 0.5 miles (0.8 km) wide from north to south and be able to hold about 8.7 billion litres of useable water.
- 6.9. It will fill the majority of the 160-hectare site and be up to 18 metres deep. The water will be contained by a sloping embankment up to 20 metres high, running about 3km along all but the northern edge of the reservoir (near Rowlands Castle), where the proposed wetland habitat will be.
- 6.10. Figure 6.3 shows how this would work, with the sloping embankment constructed from excavated soil and clay; grass covering the outer slope; and a rocky or stony surface lining the embankment at the water's edge, to protect it from erosion by waves. A solution to green the rock armour has been identified where rock mattresses would be brushed with topsoil allowing planting with aquatic / marginal species such as reeds and sedge grasses.
- 6.11. We have been able to improve the position and design of the embankment (compared to the 2009 Outline Plan) to avoid the hedges along the bridleway (at the western boundary near Swanmore Road) and reduce the loss of trees from Round Wood and the Avenue (which are both classified as ancient woodland with the Avenue also forming a contributing feature to the Grade II* RPG and Sir George Staunton Conservation Area).
- 6.12. The inside slope will range from 1:5 to 1:7. The outside slope is predominantly 1:7 with local variations of 1:5 close to Round Wood and the Avenue woodland (length of embankment at 1:5 is approximately 185m out of 575m in this area adjacent to Staunton Country Park). The crest is finished to a level of 40.5m AOD.
- 6.13. We have also worked on ways to reduce the length of the embankment to reduce construction time and the amount of materials we'd need, while still making sure the reservoir can store as much water as it needs to. We have done this in two ways, by making the south western embankment route slightly straighter; and by changing the end position of the eastern bank to make the whole embankment shorter.
- 6.14. The reservoir will need a control house at the south western edge of the embankment slope and a pipeline to link it with the Portsmouth Water pumping station at Bedhampton so we can fill the reservoir (see Planning Statement for more details on the pipeline scheme).
- 6.15. An upgrade to the Portsmouth Water treatment works at Farlington will help to treat the water, including from the reservoir, before being supplied to the customer. This is a separate project.

The water will be contained by a sloping embankment up to 20 metres high...

Figure 6.3: How the reservoir will hold water



Control House

6.16. The control building is an operational structure required for the reservoir, the location of which is dictated by the culvert. The proposed location for the control building is within the Conservation Area and opposite the Registered Park and Garden. In response to this, Portsmouth Water has tried to reduce the visual impact of the building by embedding it within the embankment, proposing large areas of living roof and a natural palette for the material finishes. Designs will continue to develop in consultation with the Conservation Officer for EHDC and HBC to ensure sympathetic design.

Indicative Layout

6.17. The schedule of accommodation and adjacencies required has informed an indicative layout, shown in Figure 6.4. This is an approximate arrangement of the spaces and shows the following components:

- The office and toilet are located together;
- There is a separate site maintenance and store area for staff working on the maintenance and upkeep of the land;
- There is a direct external access to the culvert

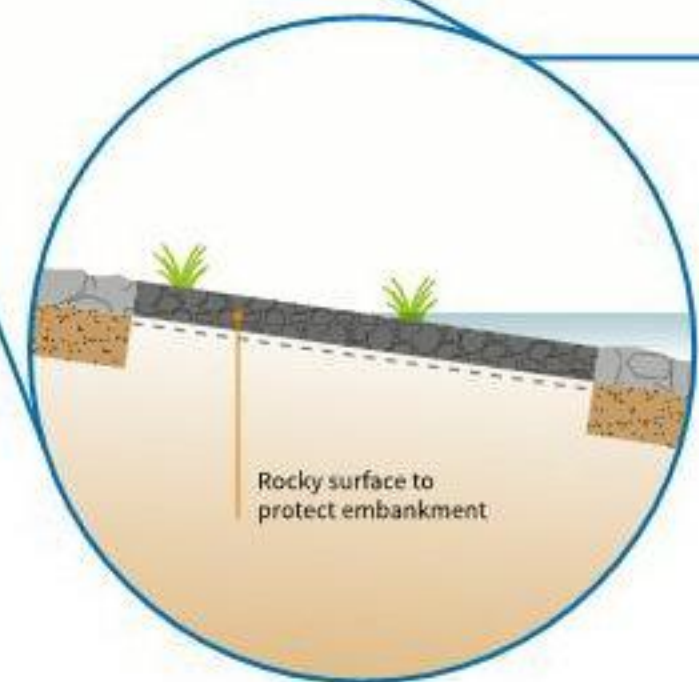
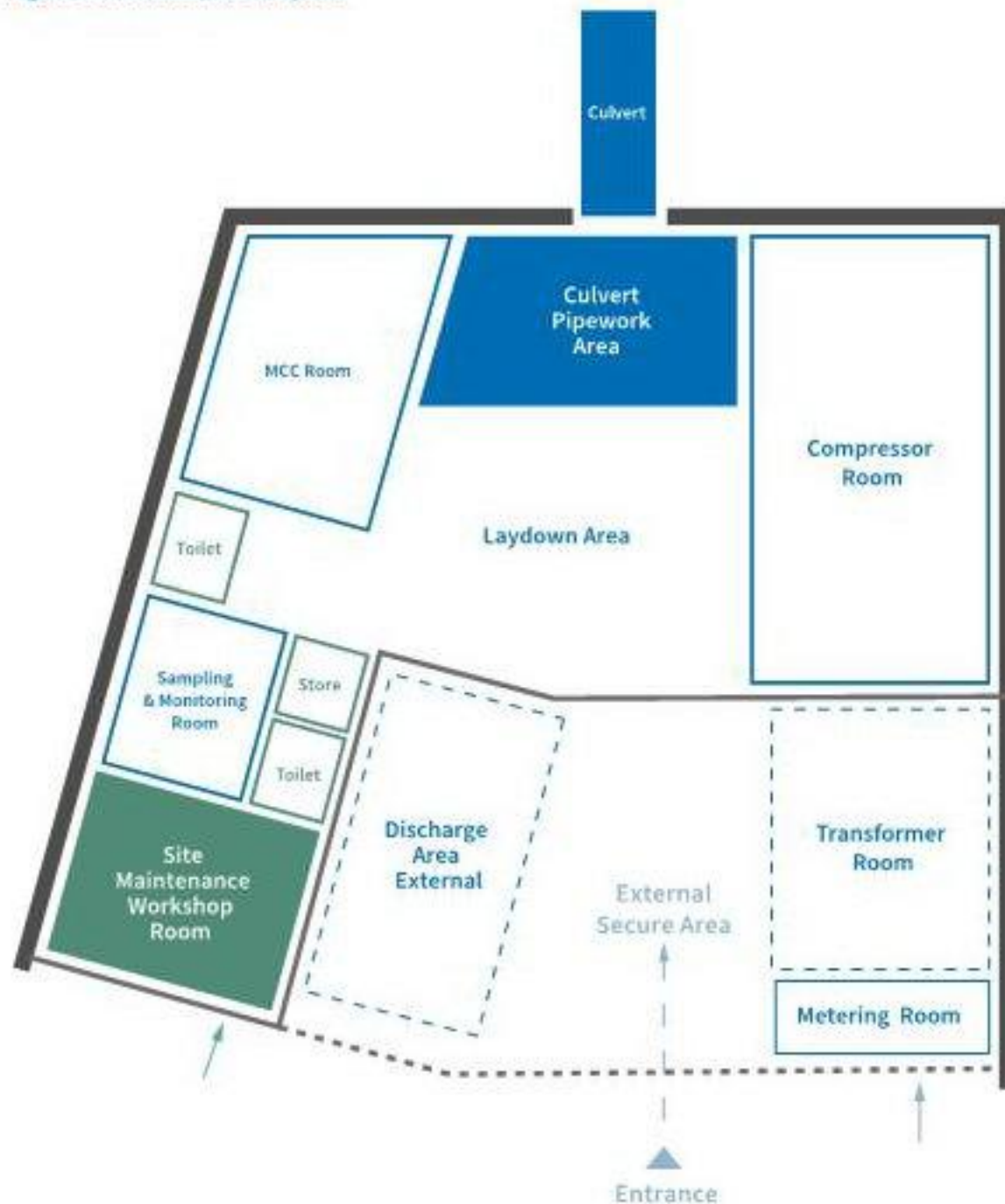


Figure 6.4: Indicative Layout



Accessibility

- 6.18. The control building has been designed as a single storey building. This is to reduce the visual impact as well as removing the need for an internal staircase and lift. The control building and maintenance store are not designed to be accessed by the general public.
- 6.19. The secure external zone will be accessed via a gate in the front wall. This will also be the entrance used for emergency vehicles and lorries.

Scale

- 6.20. A single storey, instead of two-storey building, will reduce the impact on the landscape. The visualisation (Figure 6.5) below illustrates how a single storey would minimise the visual impact of the building on the site. The proposed envelope of the building is:
- Maximum width of building frontage = 33m
 - Maximum height of building wall above external ground level = 6m
 - Schedule of accommodation total area = approximately 430m²

Roof

- 6.21. Roof plant may be required and might protrude past the roof profile, where possible this will be screened. The design will try to reduce any ventilation on the roof by using the courtyard and building façade.
- 6.22. A green roof is proposed. A living roof would provide additional wildlife habitat and an increase in biodiversity. This would also reduce the visual impact of the building when viewed from the crest embankment.

Figure 6.5: Visualisation showing control house embedded into embankment



Security

- 6.23. The form of the building with an internal courtyard creates a fully secured area. There will be perimeter security fencing around all accessible retained sides, with the front face of the building being a solid wall with access gates and doors.

Appearance

- 6.24. As this is a sensitive area, natural materials are proposed to further reduce the visual impact of this structure.
- 6.25. The aspiration is for the control house is to use a limited palette of materials and to be sympathetic to its surroundings, with large areas of living roof and a stone clad front facade. Figure 6.7 shows an indicative palette of natural materials to be considered for the control building. The detail of the appearance and material for the control house will be subject to reserved matters applications.

Figure 6.6: Example of a living roof



A living roof would provide additional wildlife habitat and an increase in biodiversity.

Figure 6.7: Indicative palette of materials

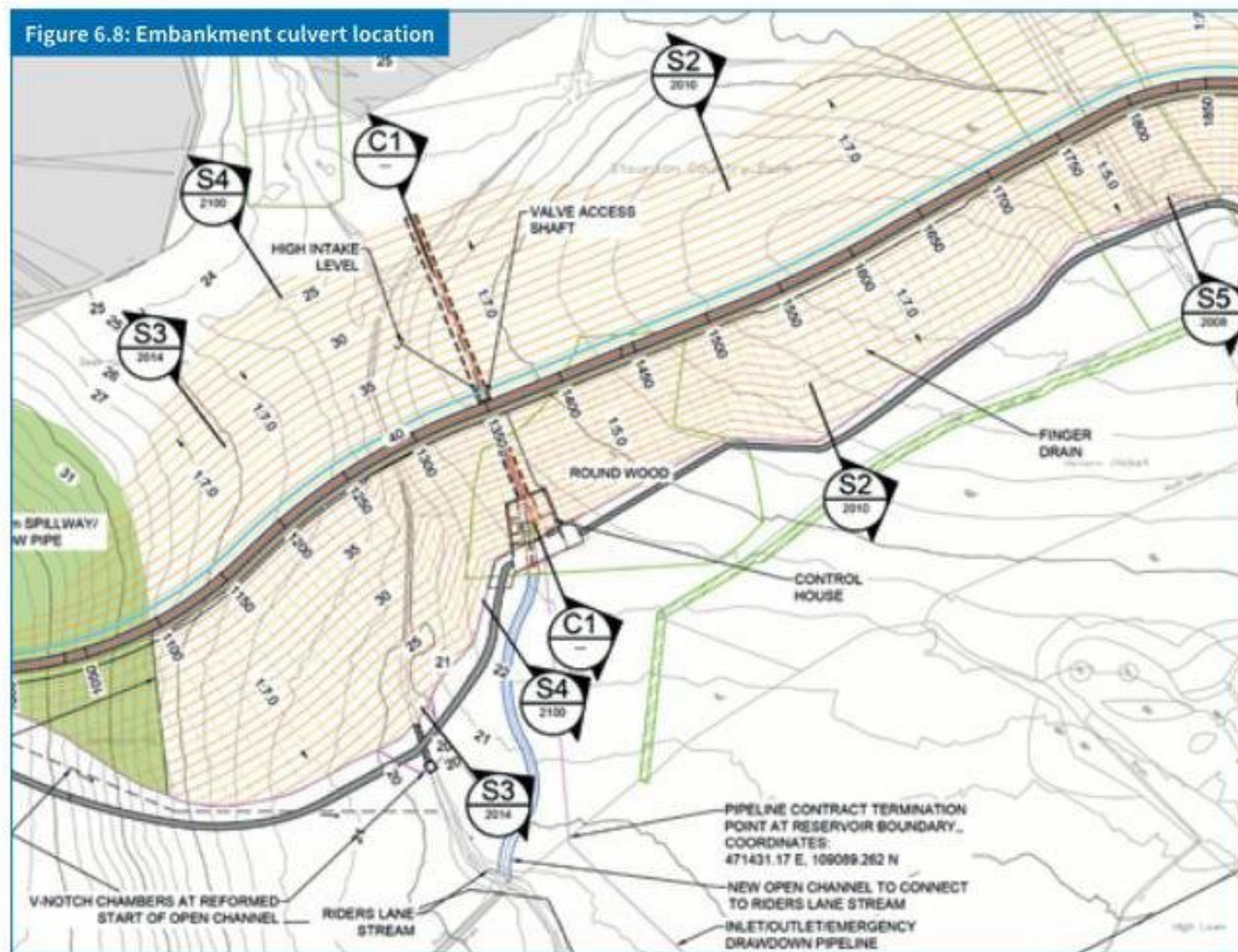


Culvert

- 6.26. The location of the control house is dictated by the culvert. This is designed to convey the inlet / outlet supply pipes and the scour pipe through the embankment. Guard and control valves are located on the mid-level intake and scour pipes within a central valve access shaft which is joined by the upper level intake pipe.
- 6.27. The culvert (Figure 6.8), is to be located further east, within the part of the Round Wood which would be removed to allow for the embankment construction. However, it makes use of the trees retained to provide screening. The length of culvert is 205m and existing ground level at 24m AOD. Start and finish levels are 22.7m AOD and 22.2m AOD respectively.
- 6.28. The proposed location of the culvert has resulted in less impact on the Conservation Area, as the control house can be screened behind the retained trees in the Round Wood and the Hammond's Lands Coppice from historic viewpoints in the Historic Park and Gardens and within the Conservation Area, particularly from the south and east.
- 6.29. The location of the culvert allows for the creation of ephemeral stream for compensation flow (between the control house and Rider's Lane Stream) which helps offset the loss of other streams.

...the control house can be screened behind the retained trees in the Round Wood and the Hammond's Lands Coppice...

Figure 6.8: Embankment culvert location



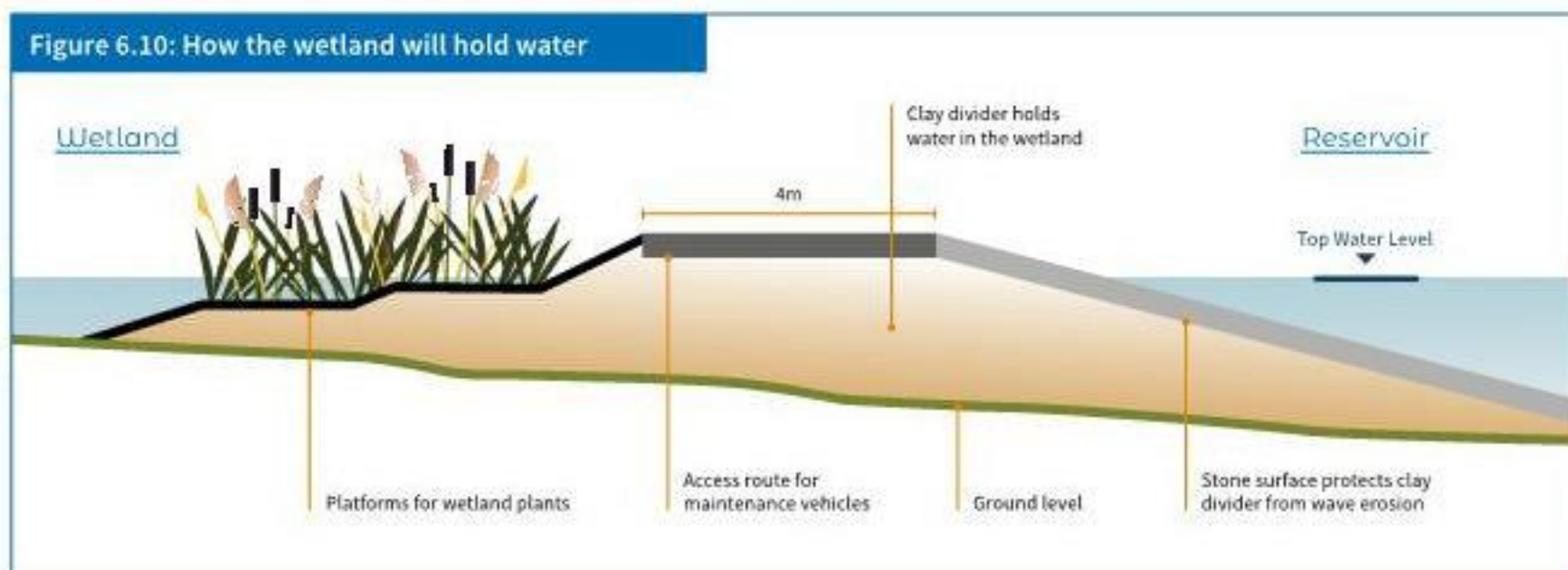
Wetlands

- 6.30. The wetland area along the northern shore of the reservoir is one of the key biodiversity delivery mechanisms for the project. In combination with the overall mitigation package the wetland will ensure the delivery of a diverse array of wetland habitats that will support a wide range of wetland species.
- 6.31. The wetland outline design, as illustrated in Figure 6.9 includes a retained wetland area separated from the main body of the reservoir and split into four compartments by clay dividers. These retaining structures will allow us to sustain, manage and maintain a diverse, species rich 10ha retained wetland within reservoir footprint.
- 6.32. The retention structure will itself provide wetland habitat value through the creation of planting platforms at different depths to allow for the establishment of wetland plant communities within both the retained wetland area, as shown on Figure 6.10, and within the main body of the reservoir.
- 6.33. By dividing the retained wetland into four compartments it will support the project in delivering a wide range of wetland habitat types, including open water, islands, emergent reed swamp, reed bed and wet woodland. These intrinsically important habitats will be integrated into the wider site ecology and landscape setting and will be linked to an area of wet grassland habitat to the east of the retained wetland that will have temporary pools to support additional wetland wildlife.

Figure 6.9: Visualisation of the retained wetland area



Figure 6.10: How the wetland will hold water



- 6.34. There will also be islands within the retained wetland to provide nesting sites for wetland birds. These islands will be designed so that they become exposed gradually as water levels naturally lower during the year and shaped to improve the range of depths and increase wetland habitat complexity.
- 6.35. The wetland retention structure will have vehicular access and incorporates spillways and the option for piped controls which will allow water to move between the reservoir and the retained wetland compartments. This approach will facilitate water level and water quality control, wetland maintenance and wetland habitat management.

Site Access

- 6.36. The preferred option for accessing the Site is to have two access points, one from the north off the B2149 and along the route of an existing Forestry England track (see Figure 6.12), and one from the south, off Swanmore Road (see Figure 6.13). Having two options will 'dilute' the overall impact of traffic, minimising impacts on the ancient woodland and B2149 to the north and on the local residential areas to the south.
- 6.37. Further design development of the proposed northern access option was undertaken with the aim of minimising any loss of ancient woodland.
- 6.38. The original cross section for the single carriageway consisted of a 6m wide single carriageway with 2m verges and 0.9m embankment slopes. This led to an 11.8m wide footprint.

Figure 6.11: How the wetland might look

...the wetland will ensure the delivery of a diverse array of wetland habitats that will support a wide range of wetland species.



- 6.39. This was refined and challenged to provide a single lane single carriageway with passing bays. This resulted in a 3.65m wide carriageway and 0.5m verges with 0.9m embankment slopes and a subsequent 6.45m wide footprint representing a 45% reduction in ancient woodland.
- 6.40. We will use ancient woodland soil arising from loss elsewhere to form the road embankment slopes.
- 6.41. It may be feasible to further reduce the ancient woodland take by employing a "dig down" construction rather than a "build up" approach to remove the need for embankment slopes. This will be investigated at the detailed design stage.

- 6.42. The northern access will be sign-posted as the main access, particularly for the longer distance and 'regional' trips, with the southern access providing a route for local trips. It is anticipated that visitor traffic will largely avoid local roads and this will be encouraged through marketing and information on the website, and a signage strategy.

Measures to limit construction traffic impacts

- 6.43. As we develop the detailed plan, we'll look at how we can limit impacts from construction traffic. These measures will be included in a detailed Construction Environmental Management Plan which will inform construction activities:

- Propose alternating routes for construction traffic to relieve congestion;
- Route construction vehicles along main roads such as the A3(M) to divert construction traffic away from residential areas for most of their journeys;
- Use other areas for parking for the construction teams and to store materials away from the working sites to reduce the number of construction vehicles travelling there;
- Stagger site activities to reduce traffic;
- Restrict when work can be carried out i.e. not overnight.

Figure 6.12: Existing access track through Forestry England land

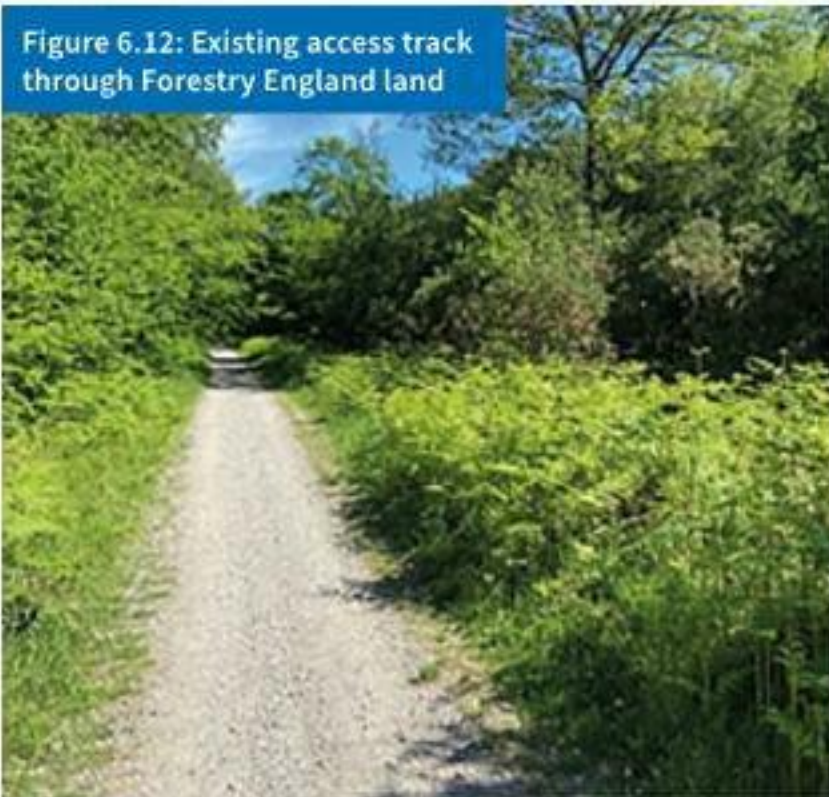


Figure 6.13: Proposed southern access point from Swanmore Road



Visitor Facilities

- 6.44. Section 5 outlines the conclusions on a Visitor Study which was undertaken to identify the appropriate level of recreational intensity, taking into account the environmental capacity of the Site, and this informed potential numbers of visitors to the reservoir and the scale of visitor facilities which should be provided.
- 6.45. A visitor centre, car park, play and picnic areas and bird hide will be grouped together within the north west corner of the Site to create an attractive and accessible hub for local communities. The visitor centre will have a café, shop, and education and community space and will be open to everyone.

The centre will be located on the waterfront in the north western corner of the Site, with access to the car park and the wetland. It will be surrounded by nature, with direct views across the wetland and reservoir...

Visitor Centre

- 6.46. The centre will be located on the waterfront in the north western corner of the Site, with access to the car park and the wetland. It will be surrounded by nature, with direct views across the wetland and reservoir and designed so it can be adapted for different uses.
- 6.47. It will include:
- A reception area with information about water, wildlife, the historic environment, and the activities for visitors;
 - A large open plan café with large windows to give views over the wetland, with seating for up to 50 people;
 - A waterside terrace, with wildlife viewing facilities and space for additional visitors;
 - A small space where locally grown food, art and other produce could be sold;
 - A flexible education and community space, with a separate outdoor area, cloakroom, toilets and storage;
 - A staff area with office, break room, store and toilet.
- 6.48. The design of the visitor centre and educational hide has been submitted in outline, detailed design will be the subject of further reserved matters applications following approval of the outline design. The application seeks permission for the scale and location of the buildings.

Design Principles

- 6.49. The visitor centre and educational bird hide will observe all design principles with focus on the following:
- 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;
 - Optimise educational opportunities in all design elements;
 - Maximise opportunities for biodiversity in the design of the landscape and buildings and minimise and mitigate any conflict with wildlife through forward planning;
 - Optimise opportunities for a sustainable design;
 - 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.

Location

Embedded in Nature

- 6.50. The placement of the visitor centre within the wetlands allows for a building surrounded by nature. The journey to the centre, with paths adjacent to the wetlands and potentially with bridge links, creates a direct visitor relationship with the surrounding habitats. The placement of the Educational hide away from the visitor centre will provide a quieter area to view the wildlife. The journey to the hide from the car park and centre takes the visitor alongside the wetlands into a wildflower meadow with a clearly defined path.
- 6.51. The landscape has been considered to include promontory points which allow views across the wetlands. The visitor centre will sit in a location between these points, within a purpose-made bay formed in the wetlands, to allow for clear views across wetlands and reservoir, connecting the visitors to the natural surroundings.

- 6.52. To access the educational hide from the centre, visitors will be taken on a journey past the outdoor educational area to a more secluded part of the site, with the hide facing eastwards over and along the wetlands.
- 6.53. The location of both these buildings provides a close connection with nature and allows for expansive views within the wetlands and to the reservoir beyond.
- 6.54. The locations also allow for a variety of journeys through different types of landscape, i.e. woodlands, open grassland, wildflower meadows. Creating a visitor hub on the site with connection to a large diverse range of habitats to view and explore.

...clear views across wetlands and reservoir, connecting the visitors to the natural surroundings.

Accessibility

- 6.55. The Visitor Centre has been designed as a single storey building which will have level access to all public areas, including access from the café to the terrace area, allowing for an inclusive design.
- 6.56. Wayfinding signposts and markers on the journey to the centre and hide will be provided in the landscape, in materials in keeping with the natural surroundings, with clear signage located near/on the buildings.
- 6.57. Sympathetic lighting will be provided to routes and key facilities.

Emergency vehicles and daily access

- 6.58. Access for emergency vehicles will be from the car park and an area for a turning circle will be incorporated into the design.

Indicative visualisations of visitor centre and bird hide



Figure 6.14: Visualisation illustrating indicative location of visitor centre and car park



Functionality

- 6.59. The visitor centre will be designed to house three main functions; café, educational/community space and staff office areas. These can be described as public (café and educational/community space) and private (office and staff areas).
- 6.60. Figure 6.15 shows the relationship and connectivity between the different areas required. The design will need a clear entrance, flexibility between the café and educational space, access to a terrace, and an outside educational space.
- 6.61. This has informed an approximate schedule of accommodation in line with the room requirements.

Scale

- 6.62. The maximum building zone for the visitor centre is 35m x 55m with a maximum height of 10 metres, this will allow sufficient flexibility in its design.
- 6.63. The proposed building will be single storey which reduces the impact on the local landscape. Figures 6.14 and 6.16 illustrate how a single storey building would fit into the site and have limited visual impact.
- 6.64. The educational bird hide is being designed to accommodate a school group with a lobby area. It will have a maximum envelope of 9m x 20m and height of 5m to allow flexibility in its design.

Appearance

- 6.65. The exterior of the visitor centre and educational hide will have a natural appearance to reflect the surrounding habitats, combined with large areas of glazing to provide views across the wetlands and reservoir as shown on the indicative drawing in Figure 6.16. The appearance will be subject to detailed design at reserved matters stage (following approval of the outline application).

Figure 6.15 – Connectivity requirements for visitor centre layout

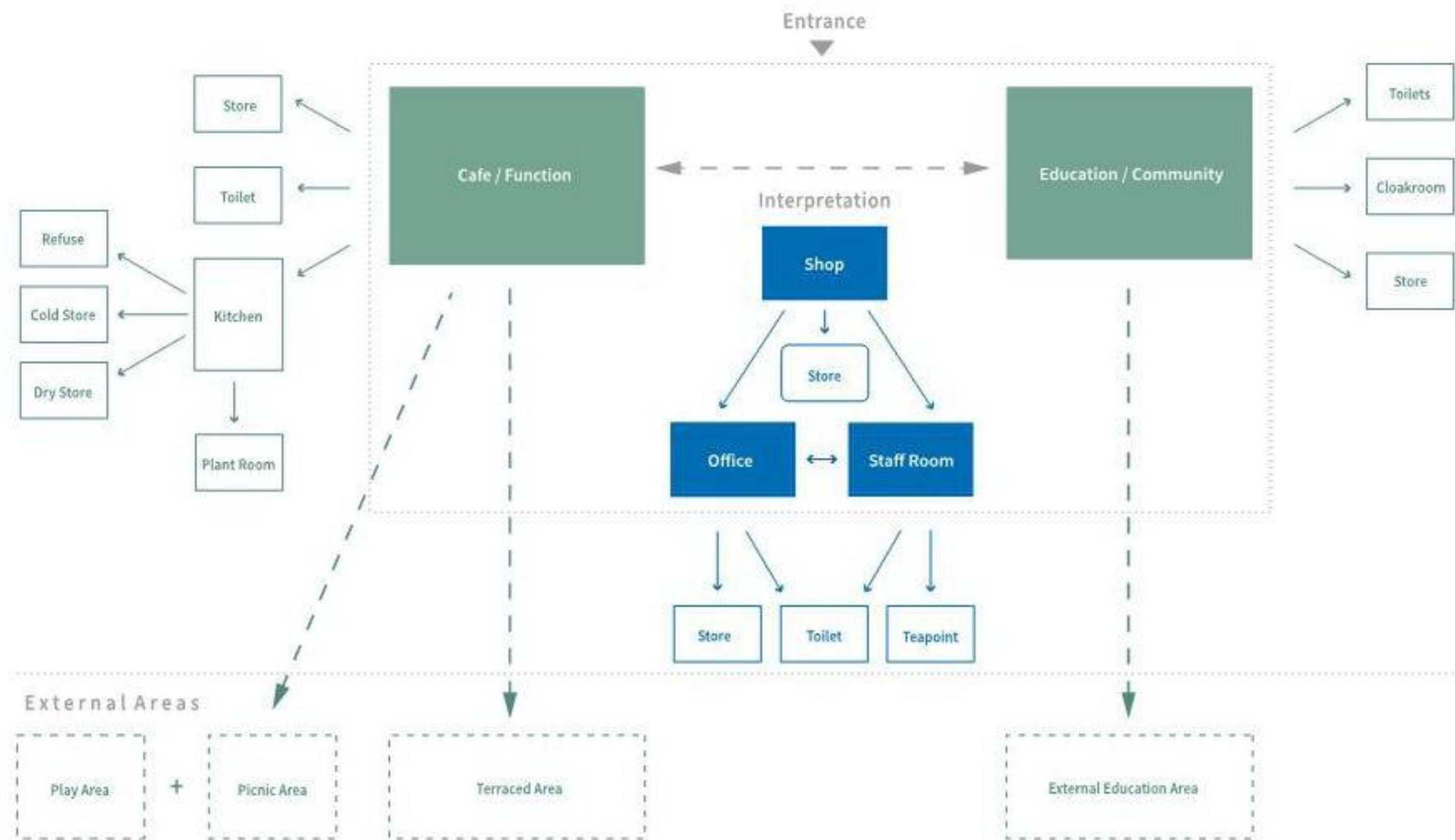
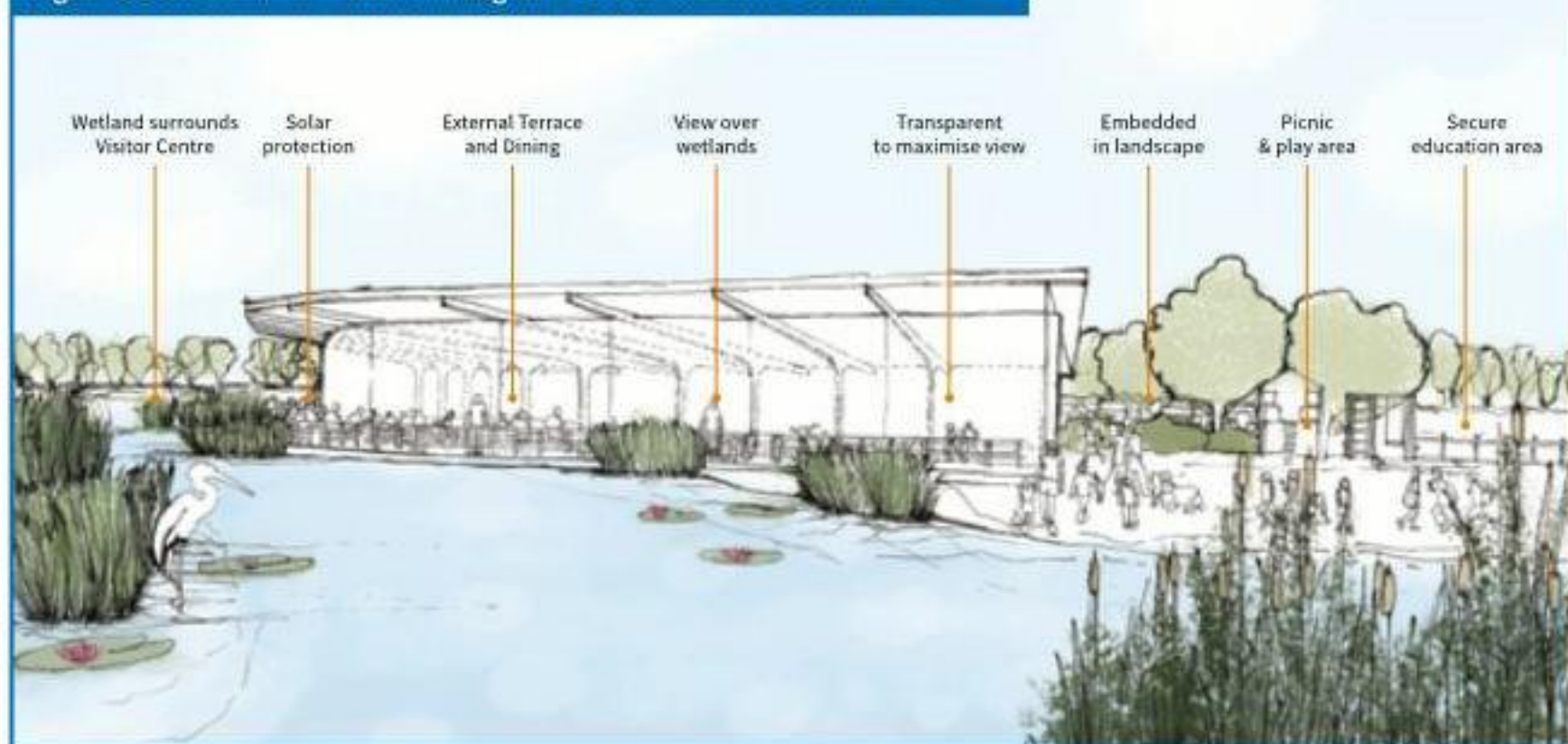


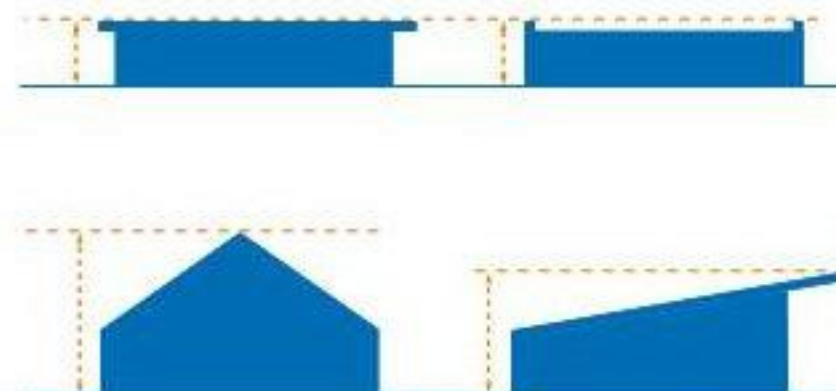
Figure 6.16: A visualisation illustrating what the visitor centre could look like:



Roof

6.66. There are different types of roof that could be placed onto these buildings. The types that are being considered are a flat roof, parapet, hip or mono pitched roof type. The illustrations in Figure 6.17 below shows some of the varying types of roof which could be considered for use for the visitor centre and educational hide. This shows that the hipped roof will have a maximum roof height of 10 metres.

Figure 6.17 – Roof variations



6.67. Roof plant maybe required and might protrude past the roof profile, where possible this will be screened and where possible the design will try and incorporate the plant internally to reduce visual impact.

6.68. It is proposed that the visitor centre will have a living, green, roof to provide potential additional wildlife habitat and support biodiversity.

6.69. The materials for the roof will be explored further in the subsequent reserved matters application.

Security

6.70. It is proposed to locate the visitor centre within a specially designed bay in the wetlands area, this will allow for the centre to have water around all or part of the perimeter.

Materials

6.71. Figures 6.18 to 6.19 provide photographs of aspirations for external and internal materials. The external appearance and materials for the visitor centre and educational bird hide will be dealt with at the reserved matters stage.

It is proposed to locate the visitor centre within a specially designed bay in the wetlands area...

Figure 6.18: Indicative material palette for visitor centre exterior



Figure 6.19: Images of aspirations for internal materials



Figure 6.20: Images of aspirations for educational hide external materials



Car park design

- 6.72. Car parking numbers have been based on the number of visits to the Site anticipated in relation to the medium level scenario agreed (see Section 5 for discussion on the different scenarios considered). To inform the Visitor Study, trip rate data was analysed for country parks and similar sites to identify the rate of hourly flows to the sample of comparable sites. The report concluded that 193 car parking spaces and between 70 and 75 overflow spaces plus staff, coach/minibus and accessible parking would be required. This scenario of overflow parking allocation factors in forecast population growth.
- 6.73. Within the previous 2009 outline masterplan, the car park was to be located within Bell's Copse which is classified as ancient woodland. Avoiding ancient woodland, an irreplaceable habitat, was the key driver in finding a new location for the car park during the evolution of design. Following discussions at the Conservation Access and Recreation (CAR) Conference and consultation with the Havant Thicket Stakeholder Working Group it was agreed that the car park should be located in the north west corner on the Site where it can be accommodated without the loss of ancient woodland.
- 6.74. The design of the car park will be in keeping with the rural nature of the Site. The woodland feel to the car park will improve connectivity for wildlife between Bell's Copse and Havant Thicket.
- 6.75. Visitors are provided with an experience as they arrive at the Site, a journey that begins at the car park through to the visitor centre, wetland and educational hide. Reinforcing and enhancing the connection with nature and water through vantage points and routes around the reservoir.
- 6.76. The car park will be set amongst trees creating a woodland feel and providing a sense of screening to the car park. Woodland fingers will provide connectivity to the pedestrian pathways linking to nearby amenities.
- 6.77. 5% of the total allocation will be for accessible parking as set out by HCC in the Parking Strategy and Guidance.

6.78. The proposed layout and landscaping for the car park area are shown indicatively in Figure 6.21.



Internal Access and Movement

6.79. The new facility will generate interest from a variety of users including:

Accessible Users Many parts of the reservoir, including the Visitor Centre, will be accessible for all users with varying abilities. The centre will also provide level thresholds or ramps if a change in level is needed. Within the landscape to the Visitor Centre, paths with wheelchair access will be provided. People less abled may also have to stop more frequently so providing enough resting places including benches/seats within the landscape will benefit this user group.

Dog Walkers There are already people who use the site for dog walking therefore with the addition of the reservoir and paths this is expected to continue and increase. The picnic area will be a key location for dog walkers; to be able to sit outside and rest on their walk.

Bird Watchers The wetlands will create a space which will encourage all different types of birds and therefore birdwatchers. Locations have been identified for discrete birdwatching to avoid disturbance.

Families The Visitor Centre and surrounding landscape will provide a number of flexible spaces and an attractive backdrop for a family on a day

out. There are opportunities for engaging children and young people in nature such as trails through the woodland, pond dipping areas and boardwalks along the wetland edge where this can be achieved without causing disturbance.

Cyclists There will be new cycle trails around the reservoir and therefore the provision of adequate bike parking and trail materials will be considered.

Horse Riders There will be new bridleway trails around the reservoir. Consideration has been given to safe access points to avoid bridleways being used by motorcycles.

School Groups The reservoir, landscape and centre will provide a fantastic space to teach students about nature, the importance of water resources and have a hands on approach to learning.

Walkers and Runners Trails will be formed around the reservoir to enhance adjacent areas used by walkers. Walkers and runners may want to rest and look at the overall landscape so adequate seating and benches should be provided.

Community Groups The natural surroundings will create an attractive setting and flexible spaces for an array of groups including functions, guided walks and wellbeing events.

6.80. All public access to Forestry England land will be subject to a site management agreement. It will be important to ensure that public access does not compromise the biodiversity objectives for the woodland and wetland areas.

6.81. Portsmouth Water's design response has been to provide a design with an extensive network of walks of varying lengths forming circular walks; consideration was given to suitable distances for

short and long walks that connect into existing long distance paths. The distance for a long circular route around the reservoir utilising the crest is 5km (3.1miles) and less than 2km route (Figure 6.23) for a shorter circuit through the woodland to the north which offers variety.

- 6.82. HCC design standards for bridleways suggests a minimum 3m wide path. The operational maintenance track and crest pathway are proposed 4m wide and permissive paths around the Visitor Centre will be a minimum 2m wide. The connectivity to paths within Staunton Country Park is important as part of the wider walking network and to re-establish a strong link between these areas of differing landscape character, providing enjoyment and amenity for all abilities.
- 6.83. Pedestrian access points will be from: the east at the existing Forestry England 'Forest of Bere' car park; south east at Gypsies Plain via an improved pedestrian access at Cedar Drive; the connection to Staunton Country Park along the Avenue; from Swanmore Road to the east by the viewing area; and in the north west corner from the car park.
- 6.84. Cycle routes are important and the provision of an integrated network through the landscape will see a variety of options for cyclists. The longest circular route on site will be approximately 5.5km (3.4miles) and there will be opportunities to connect to existing neighbouring routes. The cycle routes will allow for a wide range of experiences allowing for exploration through the landscape. The routes will connect people to nature whilst encouraging an active lifestyle and wellbeing. Measures may have to be put in place to slow cyclists down on multiuser routes.

- 6.85. Horse riders are an additional user of the Site. The development results in the loss of a public bridleway that must be replaced. There is a need to reroute this bridleway which crosses the Site. There are safety concerns with the current exit of the bridleway onto the Manor Lodge Road and current users use either permissive access through Forestry England land or an entrance opposite Castle Road into Havant Thicket.
- 6.86. The existing bridleway will be diverted to the south of the embankment, along the proposed operational maintenance track, a temporary diversion will be required to the north through Forestry England land during construction. This temporary diversion will revert back to a permissive route, following the opening of the permanent diversion. A new bridleway route along Cedar Drive will provide a safe entrance and exit for local horse riders. The temporary and permanent bridleway diversions are also shown in Figure 6.23.

Water Sports

- 6.87. During the consultation there were questions around whether there could be other activities at the reservoir, like fishing, swimming and water sports. Portsmouth Water has considered these carefully:

Fishing: the reservoir water wouldn't be suitable for coarse fishing but Portsmouth Water is talking to the Angling Trust to see if other types of fishing would be possible.

Swimming: It is not considered that it would be safe to allow swimming in a cold, deep and unsupervised reservoir where water can be pumped in or out at short notice.

Water sports: Portsmouth Water has talked to many people about water sports, such as sailing and canoeing, and many people think this would change the nature of the reservoir to a much busier place with many more visitors and cars. There are currently no plans to offer use of the reservoir for public water sports at this stage.

Landscape

Visitor Hub

- 6.88. The design of the north west corner (visitor hub) has been discussed above. The setting of this area, adjacent to surrounding woodland will assist in providing an attractive setting for these activities which will be embedded within the landscape to maintain the rural character of the Site. The view across the wetlands to the reservoir will offer a fantastic backdrop.

A variety of routes for all different users will start here promoting activity, health and wellbeing benefits across the Site whilst experiencing different landscapes such as the reservoir, wetlands, grassland, and forests, connecting people to nature and different wildlife species.

The Viewing Area

- 6.89. The location of the proposed viewing area (Figure 6.24) was chosen because of its proximity to the neighbouring Warren Park, offering local residents somewhere nearby to lookout across the reservoir. A plaza area with seating adjacent to a planted raised bed, provides a point to rest along the 5.5km circular route of the reservoir.

Figure 6.23: Outline masterplan illustrating network of paths and cycleroutes



Key:

- Red line boundary
- Permissive path - pedestrian use (existing)
- Permissive path pedestrian use (proposed)
- Bridleway - pedestrian, cycle and equestrian use (existing)
- Bridleway - pedestrian, cycle and equestrian use (proposed)
- Path - pedestrian and cycle use (proposed)
- Existing cycle path
- Long distance path
- Temporary bridleway diversion (will be reinstated to permissive path access)

- Bird watching
- Children's playground
- Picnic area
- Viewing point
- Car Park
- Vehicle access point
- Entrance point

- Existing woodland
- New woodland
- Proposed wet woodland
- Proposed scrub regeneration
- Proposed wet grassland
- Proposed embankment grassland
- Proposed wetlands
- Proposed reservoir

6.90. A grassed amphitheatre tiers down to a reed bed, to ensure robustness it will be faced with reclaimed timber sleepers sourced from the Site which will match the raised planting bed. The reed bed provides screening in times when the water in the reservoir will be drawn down. Ornamental planting beds delineate the circulation routes and 1.2m height fencing along the edge of the reservoir will be provided for safety.

Boardwalks through natural wetland planting will bring the community closer to nature...

The Avenue Staircase

6.91. The staircase leading from Staunton Country Park to the top of the embankment is seen as a key opportunity to celebrate the interface between the reservoir and the park and to integrate the historic environment into the visitor experience. Visually the steps would also provide a focal point at the end of the Avenue and can be used to interpret the changes to the historic landscape through time. There will be views across the water to the visitor centre and wetlands as well as looking back above the tree line of the Avenue towards the Registered Park and Garden and its features and follies. Figure 6.25 illustrates the view of the Avenue Staircase.

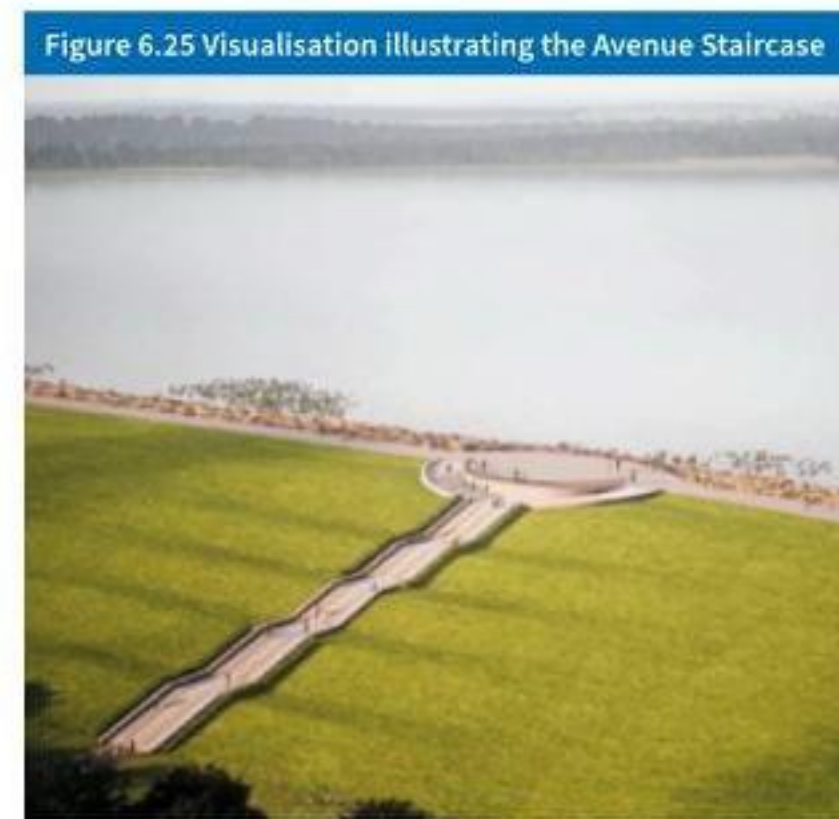
Access within proposed wetland

6.92. A brand-new wetland habitat to encourage different wildlife to the site has been created. The area will be used as an educational resource, to assist in providing teaching experiences through the school curriculum and adult education, to help educate the community about nature and our impact on the environment. It will attract different bird species which will encourage bird watchers. Boardwalks through natural wetland planting will bring the community closer to nature and viewing locations for the wetlands will be at the end of gated pathways preventing access for dogs and minimising disturbance. Indicative and discrete access points are illustrated in Figure 6.26.

Figure 6.24 Indicative Design of Viewing Area



Figure 6.25 Visualisation illustrating the Avenue Staircase



Public Art

6.93. Local planning policy seeks the incorporation of public art into the Scheme, a wide interpretation of public art is possible including use of features such as benches, walls and signposts. An integrated approach of public art with street furniture can be explored for items such as benches, cycle racks and bins. Indicative items of public art are shown in Figure 6.27. Public art can be used in part to celebrate and enhance the natural and cultural history of the area, including references to heritage features impacted by the Scheme, such as The Avenue.

Play space and signage

6.94. Spaced play combines nature-themed playground equipment with trails and greenways to create a playful trail experience for children and families. Play activities can be grouped by theme (i.e. ants, bees, trees or leaves) and installed in pockets of play along a path or trail. As families explore the trail, they encounter play pockets that promote physical activity and fun. Each spaced play pocket can include educational signage with fun facts and activities related to the theme. Spaced play is proposed along the shorter 2km pedestrian route through the woodland north of the visitor centre. Indicative items of spaced play are shown in Figure 6.28.

6.95. Legible signage will be provided to enhance the visitor's experience. Clear signage to guide visitors to the visitor centre, trails and bird watching areas is important. Site specific signage, which complements the natural setting will be used. Illustrative examples of signage are shown in Figure 6.29.

...nature-themed playground equipment with trails and greenways to create a playful trail experience for children and families.

Figure 6.26 Visualisation illustrating discrete access to wetlands



Figure 6.27 Indicative items of public art



Figure 6.28 Indicative items of spaced play



Site Management

6.96. Hampshire County Council (who manage Staunton Country Park) and Forestry England are committed to a tripartite management arrangement on the long-term management of the visitor centre, car parking, public amenity and publicly accessible woodland and wetland areas of the Site. This will be enshrined in a Management Agreement. Hampshire County Council and Forestry England have experience of similar, successful arrangements. Site management arrangements will be the subject of a planning condition / planning obligation.

Figure 6.29 Indicative signage at Beechenhurst (Forestry England site)



Visualisation illustrating what the wetlands could look like.



Click here to see a video of Trevor Codlin, Environment and Sustainability Lead at Portsmouth Water, talking about our work to protect and enhance the environment, the changes to the site and the creation of a wetland to support threatened bird species.

7 BIODIVERSITY MITIGATION & COMPENSATION STRATEGY

- 7.1. Portsmouth Water aspires for the environment to be at the core of this Scheme. The Scheme will support reduced abstraction from local chalk streams, the internationally designated River Itchen and the nationally designated River Test, which will have a significant positive environmental benefit on these watercourses. It will also result in a reduction in nitrogen loads to the internationally designated Chichester and Langstone Harbours, and deliver improvements to water quality and aquatic ecology in the Hermitage Stream.
- 7.2. The National Planning Policy Framework (para 175) advises local authorities that "development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists". Exceptional reasons include "infrastructure projects ... where the public benefit would clearly outweigh the loss or deterioration of habitat".
- 7.3. The project results in the unavoidable loss of ancient woodland with associated impacts on dormice and roosting, foraging and commuting bats, especially Bechstein's bat. The overriding need for the Scheme is summarised in Section 1 and a bespoke approach to compensation has been designed in consultation with key stakeholders including Natural England. One of the of the key project design principles was to minimise loss of ancient woodland as far as practicable.

- 7.4. National Planning Policy Framework (para 194) advises that "Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification." The project results in harm to the Grade II* RPG at Leigh Park and Sir George Staunton Conservation Area. The justification for the Scheme is summarised in Section 1 and further measures to compensate for the harm to the RPG will be included in the reserved matters applications relating to the detailed design of the Scheme.

Ecological Design

- 7.5. The design of the reservoir has been environmentally-led and, wherever possible, measures have been taken to avoid impacts on environmental assets and designated sites; this has included the following changes to the 2009 Outline Masterplan:
- **Realignment of the embankment to minimise the loss of ancient woodland at the Avenue and Round Wood;**
 - **Realignment of the embankment to avoid ancient woodland on the western site boundary through the inclusion of a 15m no-dig zone and avoidance of root protection zones;**
 - **Re-locating the car park within the north west corner of the Site avoiding Bell's Copse ancient woodland;**
 - **Retaining an area of ancient woodland within the wetland area along the northern shore of the reservoir as 'wet woodland'; and**

- **Including two access points (from the north and south) in the Scheme to enable a reduction in footprint of the northern access route minimising loss of ancient woodland, and use of ancient woodland soil arising from loss elsewhere to form the access road embankment slopes. Further measures to minimise impacts on ancient woodland along this route will be investigated at the detailed design stage.**

A new wetland

- 7.6. The creation of a new wetland along the northern edge of the reservoir will provide an exciting new leisure facility and wildlife conservation area for local communities. In combination with the overall mitigation package, the wetland will ensure the delivery of a diverse array of wetland habitats that will support a wide range of wetland species. The wetland will be retained when the reservoir is drawn down and the ephemeral stream to the north will drain into the new wetland (see Section 6 for more details of the wetland).

Advanced planting

- 7.7. Early planting has already been undertaken within the south west (Gipsies Plain) and south east corners of the Site. This planting will allow habitats to become established before the removal of trees commences, making them more valuable to the species potentially affected.

Mitigation and Compensation

7.8. Portsmouth Water is fully committed to the long-term mitigation and compensation measures, and the approach to securing their management over a minimum 25 year period is set out in an Outline Mitigation and Compensation Strategy which accompanies the planning applications. The Strategy is based on six core elements:

- An environmentally led design based on the mitigation hierarchy approach of Avoid, Mitigate and then Compensate;
- Creation of a mosaic of new and high-quality habitats on the site, including a new open waterbody with a retained wetland offering variable water depths, a variety of vegetation types and islands for added habitat complexity and to act as for roosting and nesting sites for birds. New woodland/parkland planting has also been undertaken as advance works;

- Enhanced land and environment management for biodiversity on the wider site through collaboration with Forestry England and Hampshire County Council land including a long-term site management plan;
- Provision of additional new broadleaved deciduous lowland woodland / wood pasture habitats off site;
- Support for others to create new high biodiversity value habitats off-site, such as through provision of long-term capital grants;
- Ensure appropriate mitigation and compensation is implemented for protected and notable species. European Protected Species licences will be obtained where required;
- Allow significantly greater protection of nationally and internationally important chalk stream habitat by reducing water abstraction from the Rivers Test and Itchen.

7.9. Portsmouth Water is committed to a minimum of 110ha of compensatory measures relating to the loss of ancient woodland. This includes on-site woodland / wood pasture creation and on-site ancient woodland enhancement. It also includes off-site creation and / or enhancement to deliver the minimum of 110ha of woodland interventions. Compensation for the loss of purple moor grass rush pasture will comprise bespoke on-site habitat creation. For all other habitats affected by the Scheme, losses will be minimised and opportunities for compensation on the Site would be taken as far as practicable, and the priorities for targeting offsite capital funding will take account of the habitat types to be lost.

7.10. The loss of watercourses, ditches and Upper Lake within the Site will be compensated for through improvements to the local watercourses, to be agreed with the Environment Agency.

7.11. The Environmental Statement (Chapter 9), which accompanies the planning applications, provides more information on the ecological impacts of the Scheme.



We've recently planted hundreds of trees and created new ponds and hedgerows on the edge of the reservoir site to improve habitats for wildlife. This has included a mixture of more than 3,000 trees to create a memorial woodland in partnership with Havant Borough Council as a place for quiet reflection and a valuable new habitat to connect other areas of woodland nearby so birds and mammals can move around and feed more easily.

8 HISTORIC LANDSCAPE DESIGN STRATEGY

8.1. The appraisal of the historic environment within the Scheme has been undertaken by means of:

- A desk-based study of the historic environment, including an assessment of significance of heritage assets within study areas defined for designated and non-designated heritage assets;
- A Statement of Heritage Significance for the Grade II* Registered Park and Garden (RPG) at Leigh Park and the George Staunton Conservation Area. This examined the significance (value) of the two assets, including both designated and non-designated assets within their boundaries, to provide an overview of the heritage significance of the Registered Park and Garden (RPG) and Conservation Area and evaluate how the Scheme would impact the ability of the assets to express their heritage significance;
- An assessment of aerial photography completed for an earlier phase of the Scheme, which aids in the identification of potential archaeological remains within the Site.

8.2. These documents provide the baseline for the assessment of impacts to the historic environment, which are summarised in Appendix A8 of the Environmental Statement. The Scheme would remove part of the Grade II* RPG at Leigh Park, as well as a portion of the George Staunton Conservation Area. The removal of a portion of the Avenue landscape feature is required for the construction of the embankment and reservoir. Part of the George Staunton Conservation Area (an area of open space near High Thicket Lawn) is required for the construction of the embankment. No listed buildings or built heritage contributing to the Conservation Area would be removed.

Sensitive Design

8.3. The Statement of Heritage Significance for the Grade II* RPG and George Staunton Conservation Area evaluated the significance of these assets in terms of their ability to contribute to their historic, aesthetic, archaeological, and communal values. The assessment concluded that the removal of the Avenue would have an impact on the significance of the RPG and Conservation Area, however, that impact would not result in substantial harm to their significance in that the associated values would remain intact and readily discernible.

The Avenue staircase

8.4. The design for the reservoir reflects the history of the landscape and pays tribute to the 'lost' part of the Avenue. The staircase leading from Staunton Country Park to the top of the embankment is seen as a key opportunity to celebrate the interface between the reservoir and the RPG. Visually the steps would also provide a focal point at the end of the Avenue. A sunken tiered staircase precession splitting at the top to offer 360 degree look out. There will be views across the water to the visitor centre and wetlands as well as looking back above the tree line of the Avenue. The grassed tiered slopes reflect the historic alignment of Avenue and provide relaxation spots on the south facing slopes. A formal hedgerow will line the steps to offer a sense of grandeur and to reflect the historic design of the Avenue as a woodland ride. The sunken steps do not detract from the rural setting and will utilise local materials, flint cladding on the internal walls, compacted gravel on the landings and limestone steps to signify the importance.

The viewpoint from the top of the staircase provides an opportunity to incorporate public art reflecting the historic landscape associated with the RPG, connecting the Avenue with the Grade II Listed Mansion Terrace within the RPG and to the aspects of the Avenue that will be lost to the Scheme, including Upper Lake.



Photomontage of view along the Avenue
and towards the Avenue Staircase



Photomontage of view from the Terrace in Staunton Country Park towards the embankment



Photomontage of view from south west corner towards embankment and Conservation Area (1 year after operation)



Control house

8.5. While the inclusion of the open space north of Thicket Lawn into the embankment of the Reservoir would not result in substantial harm to the Conservation Area, there would be a less-than-substantial level of harm at a relatively high degree. The outline design for the control house is in line with the guidance in the Sir George Staunton Conservation Area Character Appraisal and aims to ensure the building is in keeping with the character and appearance of the Conservation Area. Detailed design of the building will be submitted to the HBC/EHDC Conservation Officer as part of a reserved matters application to allow for continued consultation on appropriate designs. The communal value of the open space within the Conservation Area is of historic significance, public access being a defining character of the property during the ownerships of both George Staunton and William Stone. It is expected that, while this access will be temporarily disrupted during construction of the embankment and reservoir, it will be re-established and continue during the operation of the Scheme.

8.6. Section 6 provides more detail on the scale and appearance of the proposed control house and Figure 6.5 provides a visualisation showing the building embedded into embankment. The Cross Section in Figure 8.1 below further demonstrates how the building.

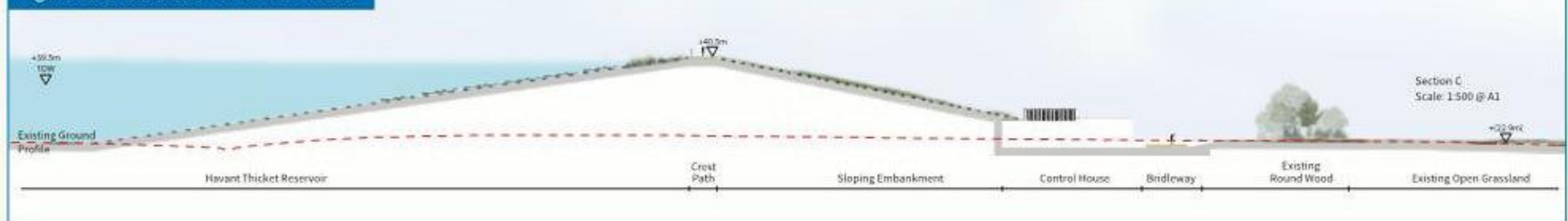
Embankment design

- 8.1. We explored making parts of the embankment slightly steeper, to reduce the amount of land we need to build the embankment and reduce the number of trees we need to remove (see Section 4). The outside slope is predominantly 1:7 with local variations to 1:5 close to Round Wood and the Avenue woodland. The variation in slope gradient and planting proposed will also give the embankment a more natural appearance in keeping with Staunton Country Park.
- 8.2. Overall, the Scheme would have limited impacts to the historic landscape. The historically significant views within the RPG and Conservation Area would be preserved and where impacts are had, sensitive design and opportunities for interpretation and enhancement will maintain the significant connection between the historic and current landscapes.

Archaeological remains

8.3. As is the case for all development in previously undeveloped land, there is the potential for as-yet unknown archaeological remains to be uncovered and impacted. There is the potential for archaeological remains relating to the prehistoric (particularly Mesolithic) and Romano-British periods, as well as post-Medieval remains. However, the Hampshire County Council archaeologist recommended that pre-application investigations would not be proportionate to the level of potential and that impacts to archaeological remains could be dealt with by means of a planning condition. This would require the outline planning permission to be subject to an Archaeological Management Plan outlining the potential for buried remains and providing an outline scheme of investigation for recording any that may be impacted by the construction of the Scheme. Such activities are likely to include (but are not limited to) watching briefs and/or a programme of Construction Integrated Recording during soil stripping activities.

Figure 8.1 Cross section of control house



9 SUSTAINABILITY STATEMENT

Introduction

- 9.1. Sustainability is a multifaceted topic that relates to the environmental, social and economic well-being of a project and has central importance to all aspects of the Havant Thicket Reservoir Scheme.
- 9.2. The reservoir's primary sustainability purposes are to ensure:
- Protection of the Test and Itchen rivers (which are two internationally protected chalk streams) by providing alternative supplies and enabling reduction in the amount of water taken from these rivers for domestic and business use;
 - Continued viability of communities in West Sussex and Hampshire that already suffer from 'serious water stress' by providing secure reliable drinking water for the future; and
 - Low-impact, water resilience across the whole south east region by creating a naturally maintained, new bulk supply.
- Additional to these primary purposes, the aim of this project is to achieve high sustainability performance by delivering project design solutions developed through good integration with all stakeholders and their requirements

Sustainability Requirements

- 9.3. The specific requirements are to ensure that the construction and operation of the reservoir are sustainable as defined by the Project Drivers and Project Design Principles (Section 1) and the sustainability requirements of the national, regional and local authorities, and meets the requirements of the organisations and communities that have an interest in its construction, operation and use. The key requirements of these stakeholders are set out in Table 9.1, opposite.



Table 9.1: Scheme Sustainability Requirements

Organisation	Relevant Document
1. Portsmouth Water	Environment Policy statement Biodiversity Strategy Annual Report on Conservation, Access & Recreation 2016/17 Biodiversity Action Plan- Policy and Practice Annual reporting- Sustainable Procurement Business Plan 2020-2025 Final Water Resources Management Plan 2019
2. Southern Water	Annual Report & Financial Statements 2018-19 Southern Water Futures Strategic Statement
3. OFWAT	Delivering sustainable water – Ofwat's strategy Sustainability First Strategy report – 21st June 2019
4. Natural England	Building Partnerships for nature's recovery - Natural England Action Plan 2019/20 Natural England's Strategic Direction Delivery Framework
5. Environment Agency	Creating a better place - Our ambition to 2020 Annual report and accounts for the financial year 2018 to 2019 The Environment Agency's Objectives and Contributions to Sustainable Development: Statutory Guidance EA - Our commitment to the environment
6. Forestry England	Corporate Plan 2016-17 Forestry Commission Annual Report 2009-10
7. Havant Borough Council	Sustainability Appraisal Scoping Report Havant Energy Strategy 2016 - 2020 Draft Havant Borough Local Plan 2036
8. East Hampshire District Council	Hampshire County Council Business Services - Sustainability Initiatives East Hampshire District Local Plan 2017-2036_ Sustainability Appraisal Interim Scoping Report - Dec 2018 Sustainability Appraisal(SA) of the East Hampshire Site Allocations plan East Hampshire District Local Plan: Joint Core Strategy
9. Hampshire County Council	Land, planning and environment page Sustainability Policy

Sustainability Objectives

9.4. The approach for embedding sustainability into the Scheme is to design it to be built, operated and maintained as effectively as possible, minimising the whole life impacts of the Scheme. To do this, Portsmouth Water has developed the project drivers, design principles and stakeholder requirements into a set of project specific sustainability topics and objectives, as shown in Figure 9.1 and described in Table 9.2.

Figure 9.1: Key Sustainability topics considered in the Scheme

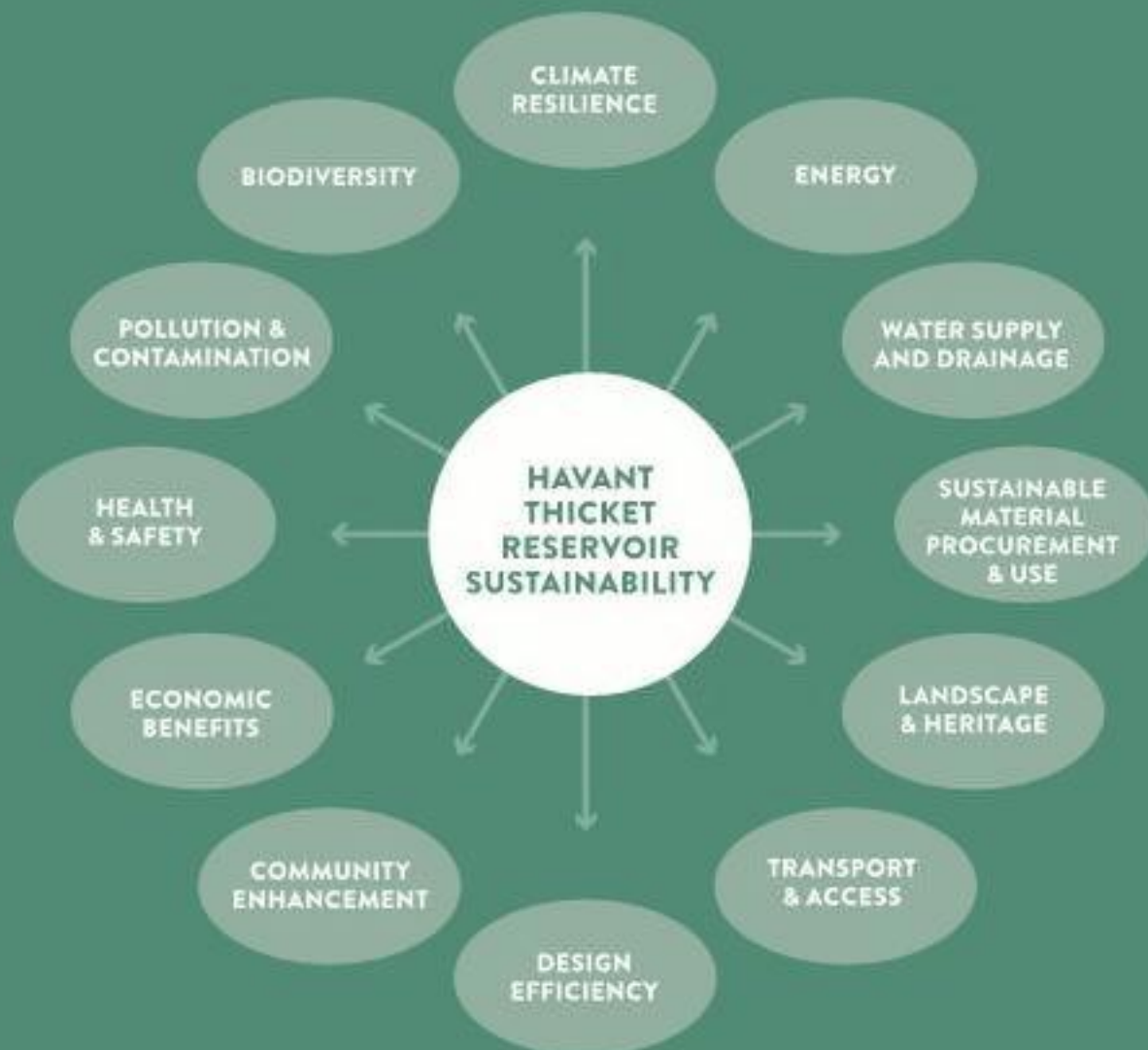


Table 9.1: Scheme Sustainability Requirements

Sustainability Topic	Sustainability Objectives
1. Biodiversity	Complete an ecological assessment of the reservoir site and pipeline route and identify habitats and species where impacts could occur. Minimise loss of irreplaceable habitat, and deliver a suitable bespoke compensation package for any unavoidable losses of these habitats and of habitats of very high distinctiveness. For all other habitats affected by the Scheme, minimise losses and compensate on the Site, and the priorities for targeting offsite interventions including capital funding will take account of the habitat types to be lost.
2. Climate Resilience	Identify and assess the climate change risks and opportunities relevant to the site and pipeline. Consider and apply effects of climate change particularly to flood risk levels. Maximise opportunities for carbon sequestration.
3. Energy	Maximise opportunities to improve operational energy efficiency of the new developments.
4. Water Supply & Drainage	Undertake flood risk assessment, ensure mitigation measures are incorporated to minimise all potential risks. Developments to maximise opportunities for water reuse, including greywater use.
5. Sustainable Material Procurement & Use	Maximise opportunities for recycling and re-use of excavated materials and procurement of raw materials locally. Maximise opportunities to procure all raw materials locally.
6. Landscape & Heritage	Scheme to maintain and enhance the identified green infrastructure networks on and adjacent to the Site. Scheme developments blend into the surroundings by careful design and landscaping. Scheme design includes opportunities to interpret and enhance the historic environment.
7. Transport & Access	Ensure Scheme is accessible to all non-motorised users. Improve access to the green infrastructure near the Site.
8. Design Efficiency	Undertake assessment of construction and operation carbon emissions, materials use and waste to identify carbon hotspots. Reduce the need to travel to Site as far as possible.
9. Community Enhancement	Explore and maximise opportunities to improve overall health and well-being of the local community, across the full social spectrum. Identify the requirements of the local community for the reservoir and implement these into the Scheme. Maximise the provision of recreational spaces and activities for the local community. Identify noise and vibration sensitive receptors to minimise it as far as possible and ensure noise is within acceptable limits at all times.
10. Economic Benefits	Explore opportunities to improve sustainable tourism in the local area, and where possible implement them.
11. Health & Safety	Ensure the Scheme minimises any short and long-term health and safety issues from working and recreation at the Site.
12. Pollution & Contamination	Undertake appropriate risk assessments to identify actual and potential sources of contamination both on and off the Site. Ensure mitigation measures are in place where required to limit any actual or likely negative effects of pollution sources on receptor(s) to an acceptable level.

Sustainable Design Planning and Progress

9.5. This project is fundamentally sustainable for the following reasons:

- The excess clean spring water that would otherwise flow out into the sea can now be captured and stored in the reservoir until it is required to supply Portsmouth Water's customers and the surplus can be shared with Southern Water's customers in West Hampshire;
- The clay required for the construction of the embankment and development of a wetland is already available on-site, hence most of the embankment material will not incur transport emissions and costs;
- The reservoir inherently reduces flood risk in the region through capture and storage of rainwater and surface water runoff.

9.6. Sustainability has been considered and embedded throughout the Scheme design which is further detailed in Section 6. In addition to the above inherent sustainability benefits, some of the headline sustainability initiatives prioritised in the Scheme for the Sustainability Objectives set out in the Table 9.2 above are:

Biodiversity

- Project is designed to minimise losses of ancient woodland and veteran trees as far as practicable. Portsmouth Water has also improved the position and design of the reservoir embankment to avoid the hedges along the bridleway (at the western boundary

near Swanmore Road) and reduce the loss of trees on the Site, from two wooded areas called Round Wood and the Avenue (which are both classified as ancient woodland).

- Scheme proposes a wetland habitat to support threatened bird species and provide areas for endangered bat species to forage for food. Portsmouth Water is creating a wetland habitat as one of the mitigation measures to address the likely ecological and visual impacts associated with the construction of the Scheme. Habitat and biodiversity (terrestrial and water bodies) enhancements will be delivered as part of the project including the provision of wetland habitats along the northern shoreline of the reservoir. The integration of a wetland area into the Scheme provides an opportunity to create a habitat of high intrinsic ecological value that can maximise local natural capital value.
- Portsmouth Water plans to split the wetland into four areas to allow for a wider variety of plants and wildlife and to help us manage and maintain the different sections. There will also be islands which will appear when the water level is lower to provide temporary nesting sites for birds.
- Portsmouth Water is further considering the improvement the biodiversity value of the nearby local watercourses, the options for which are being discussed.
- The Scheme will include creation of additional areas of broadleaved deciduous lowland woodland and enhancement of areas of existing ancient woodland.

Climate resilience

- 9.7. The Scheme design considers the effects of climate change and applies the appropriate climate change factors particularly to flood risk levels to ensure that the infrastructure is resilient to expected climate change and extreme weather events.
- The reservoir design assesses and incorporates the effects of larger flood events (1 in 10,000 considered) will include the climate effects of wind.

Energy

- 9.8. The Scheme design shall explore the viability to use renewable technologies in the new developments such as the visitor centre and the control house.
- The design proposes use of energy efficient lighting (like LEDs) to reduce energy requirements of the new developments (visitor centre, car parks), alongside the use of natural material in the visitor centre to improve insulation and thereby the building energy performance.
 - The Planning permission approval for the outline design of the reservoir will be subject to a condition seeking a renewable energy strategy.

Water supply and drainage

- 9.9. The risk of flooding during storm events is fully assessed in a flood risk assessment and mitigation measures recommended to minimise all risks
- Further development during detailed design would explore the use of SuDS (Sustainable Urban Drainage Systems) to provide more green spaces. Design will aim to minimise any water leakage through the pipe network.

Sustainable material procurement and use

- 9.10. The design proposes a circular approach towards excavated materials by using all the excavated clay on-site either for the construction of the embankment or in landscaping which ensures that no clay needs to be sourced in thereby also reducing material transport emissions.
- The timber generated from site clearance will be used on-site as much as possible with suggested uses being; in the Visitor Centre, to make benches around the Site, for fencing around the embankment and any other uses locally.
 - The Scheme seeks to minimise material imports as much as possible, utilising local sources as much as possible when required. The stone armour required for the reservoir embankment will be procured from a source as locally as possible to reduce the greenhouse gas emissions due to transport.

Landscape and heritage

- 9.11. Portsmouth Water has considered the environment in every aspect of the project design taking into account the Site's sensitive rural location and proximity to Warren Park, Leigh Park and Rowland's Castle and the South Downs National Park. Any impacts on the views to the Staunton Country Park are minimised and long distant views of the South Downs National Park are being maintained in accordance with the local landscape. The natural screening from the vegetation around the Site, will be maintained as far as possible.
- Portsmouth Water has undertaken the Phase 1 of tree planting wherein 3000 trees have been planted within the scheme boundary on the south east and south west side so that these trees would add benefits to the environment as they grow and mature when the project is completed. The Scheme seeks to have as much green infrastructure using natural material around the Site as is possible, in keeping with the rural character of the landscape.
 - The control house is being designed as a single storey building with the use of natural material in its external elevation and a living roof to blend in with the surrounding landscape. Its designs comply with the Sir George Staunton Conservation Area Management Plan and will be sympathetic to the character of the Conservation Area
 - To maximise the visitor experience and the connection with water and nature, the visitor centre is positioned in such a way that it is surrounded by the wetland environment. The centre delivers clear views across the wetlands and reservoir, to connect visitors with the

landscape and wider surrounding, and provides a quieter area to observe wildlife.

- Additionally, the original route of the pipeline from Havant to Bedhampton has been improved by avoiding construction across the ancient woodland at Great Copse, which is considered an irreplaceable habitat in accordance with the UK national planning policy.
- The heritage assets, important landmarks and historic buildings including: Leigh Park Registered Park and Garden; the Sir George Staunton Conservation Area and existing woodland; and the South Downs National Park, have been preserved so far as is consistent with the primary duty of the reservoir i.e. providing a sufficient supply of wholesome water at reasonable cost.

Further measures to compensate for the harm to the RPG will be included in the reserved matters applications relating to the detailed design of the Scheme.

Transport and access

- 9.12. The Scheme provides a landscaped parking area for vehicles and bicycles.
- The Construction and Environmental Management Plan will include measures to minimise construction traffic.
 - Public vehicular traffic is being restricted within the Site and confined to the vicinity of the main access and car park to allow greater non-motorised user access.
 - The Scheme includes a network of trails and paths for walking, cycling and horse-riding.

Design and material efficiency

9.13. The Scheme design supports 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.

- The Scheme design is considering the use of renewable technologies for heating sources in the visitor centre and plans to put a living roof to give a mass to the roof for better insulation.
- The design has been using Portsmouth Water's consultants' in-house carbon assessment tool called Carbon Knowledgebase to make design decisions by selecting low carbon building materials as far as possible while ensuring that the functionality and safety of the structure is not compromised.
- Travel to Site is minimised as far as possible. This has been done by effective use of Spatial Common Data Environment (CDE) using GIS mapping (Geographical Information Systems Mapping) to create a detailed log of all assets. Going ahead this would also minimise the time required to undertake construction, operation and maintenance activities.
- The Scheme will aim to achieve a neutral cut and fill balance and recover 95% by weight of non-hazardous construction and demolition waste in accordance with the HCC Minerals and Waste Plan.

Community well-being and enhancement

9.14. Portsmouth Water wants to create a place for people of all ages to stay active and healthy, learn more about water and wildlife and get together as a community. A visitor centre, car park, play and picnic areas and bird hide will be grouped together to create an attractive and accessible hub for local communities.

- The visitor centre is proposed to be located on the waterfront in the north western corner of the reservoir site with direct views across the wetland and reservoir. The visitor centre is being designed to fit in with the character of the natural environment using natural materials such as wood available on-site.
- Stakeholder engagement and public consultation has been undertaken to identify the requirements of the local community for the reservoir.
- The Scheme maximises provision of recreational spaces and activities to improve overall health and well-being of the local community.
- The Site has a visitor centre which will include a café, facilities for communities and school such as an open learning space that can be accessed by school groups for educational purposes.
- The Scheme includes a network of trails and paths for walking, cycling and horse-riding, with links to others in the wider area and this is expected to lead overall improvement in health and well-being for the local community.

Economic benefits

9.15. The development of the reservoir and the visitor centre is expected to improve sustainable tourism in the local area.

Health and safety

9.16. Portsmouth Water is using creative and intelligent design methods to minimise any short and long-term health and safety issues. The use of digital technology to share information and minimise travel to site is a key aspect of this approach.

- The Scheme has undertaken a 'Public Safety Risk Assessment' to identify hazards and risks and will propose mitigation measures throughout the Scheme.

Pollution and contamination

9.17. The Scheme supports the protection and enhancement of the environmental resources of water, soil, air, biodiversity and landscapes.

- The Scheme pursues the long-term ambition of zero pollution incidents on-site throughout the development programme which would be detailed in the Construction Environmental Management Plan (CEMP).
- The Scheme design will ensure that there are no adverse effects to the air quality (including dust emissions) and noise on-site due to the construction and operation of the scheme and shall set up mitigation measures in case there are any adverse effects.

Stakeholder engagement

9.18. Portsmouth Water has been closely working with all stakeholders including the Havant Thicket Stakeholder Group, local community groups and representatives from environmental groups to develop the design.

- In 2019 Portsmouth Water carried out public drop-in exhibitions, workshops, surveys with the local communities followed by a public consultation in May-June 2020, and plans reflect the views of the people who live near the reservoir or are interested in its creation.
- Despite the Covid-19 situation, Portsmouth Water made all efforts to ensure that public consultation for the reservoir and pipeline could take place according to the original programme and to the satisfaction of HBC and EHDC. Portsmouth Water took an innovative approach in undertaking a digital public consultation included videos with the specialists, public webinars with live Q&A sessions, an animated flythrough and interactive consultation brochure. Portsmouth Water also designed flyers which were sent to 50,000 households and printed hard copies of the brochures for those who requested them.

Engagement with key stakeholders and statutory consultees was ongoing throughout 2019 and 2020.



10 CONCLUSION

This Design and Access Statement supports the outline planning application for the Havant Thicket Reservoir.

It provides evidence to demonstrate how site and context analysis, together with public and stakeholder inputs, has been used in a collaborative and iterative design development process to produce a high quality infrastructure scheme which addresses the region's future water resource challenges, and provides a new wildlife and recreational resource, whilst minimising its visual and environmental impact.

The reservoir, when constructed, will be filled with surplus water drawn from the springs at the 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 and enable additional water to be supplied to Southern Water to meet its forecast deficit.

Complementary to its infrastructure resilience function, the reservoir will provide a new recreational resource adjacent to one of the more deprived areas in south east Hampshire which will include a visitor centre, accessible open space, a network of trails linking to the wider area and a new wetland habitat and associated area for nature conservation.

The planning application demonstrates that there is an overriding public need for the Scheme and a lack of suitable alternative sites, or design solutions within the preferred site, which avoids loss of ancient woodland or harm to the Grade II* Registered Park and Garden (RPG) and Sir George Staunton Conservation Area.

Extensive community engagement has been carried out since 2004 and feedback received throughout has consistently demonstrated a high level of support for the reservoir proposals. The most frequent concerns related to the loss of ancient woodland and traffic impacts. The design work, which resumed in 2019, took on board many of the stakeholder and community concerns and included measures to reduce impacts on ancient woodland, the RPG, conservation area and local highway network including:

- **Realignment and steepening of the embankment in some areas to reduce the amount of land needed to build the embankment and minimise the loss of ancient woodland at the Avenue and Round Wood;**
- **Realignment of the embankment to avoid ancient woodland on the western site boundary through the inclusion of a 15m no-dig zone and avoidance of root protection zones;**
- **Re-locating the car park within the north west corner of the reservoir site avoiding Bells Copse ancient woodland;**
- **Retaining an area of ancient woodland within the wetland area along the northern shore of the reservoir as 'wet woodland';**

- **Including two access points (from the north and south) to 'dilute' the construction and visitor traffic impact and enable a reduction in footprint of the northern access route minimising loss of ancient woodland;**
- **Re-routing the pipeline to avoid Great Copse ancient woodland;**
- **Varying embankment slope gradient and planting to give the embankment a more natural appearance in keeping with the RPG;**
- **Reducing the size of the control house, embedding it into the embankment and including a green roof and natural palette of materials to minimise its visual impact on the setting of the RPG and conservation area;**
- **Including the Avenue Staircase to reflect the history of the landscape and celebrate the interface between the reservoir and the RPG;**
- **Providing viewpoints to allow views across the water to the visitor centre and wetlands as well as looking back above the tree line of the Avenue towards the RPG.**

The design of the reservoir has been environmentally led. It has sought to integrate operational and visitor facilities within the landscape to provide an attractive setting for the Scheme, minimise its visual and environmental impact and maintain the rural character of the site.

