

Havant Thicket Reservoir Project

Environmental Statement Volume 4 – Appendices
Appendix A9 Biodiversity
A9.15 Habitats Regulation Assessment Stage 1
Screening Report to Inform Stage 1 Screening
and Stage 2 Appropriate Assessment

Portsmouth Water Ltd.

03/09/20

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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, 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.

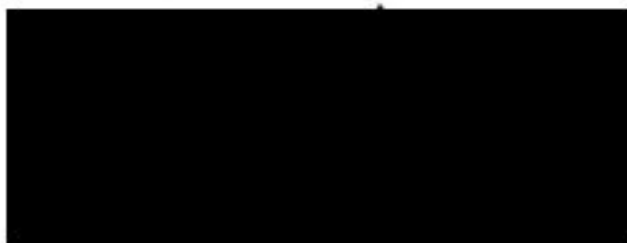
This project has always had the potential to provide many additional benefits, over and above its core purpose of securing vital water supplies for our customers and those of Southern Water – ensuring we're ready for housing growth, climate change and protecting two world-famous rare chalk streams in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

We believe we've captured that potential in this application, not least 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

1 Introduction

Purpose of the report

- 1.1 Atkins Limited (Atkins) has been appointed by Portsmouth Water (the applicant) to provide a Habitats Regulations Assessment (HRA) to inform the Stage 1 Screening and Stage 2 Appropriate Assessment of likely significant effects on European Sites associated with the proposed Havant Thicket Reservoir.
- 1.2 In 2009, Arup produced a Habitats Regulations, Stage 1 Screening Report for the Havant Thicket Reservoir Scheme (then named the Havant Thicket Winter Storage Reservoir)¹. That report is now out of date to support a planning submission. In addition, potential changes to the design of the Scheme need to be re-assessed to determine whether the Havant Thicket reservoir and associated water supply pipeline proposed by Portsmouth Water (the Scheme) are likely to have a significant effect on a European site.
- 1.3 This Habitat Regulations Assessment accompanies the Environmental Statement that assesses the effects of the Scheme on biodiversity resources to support a hybrid planning application by Portsmouth Water for the Havant Thicket Reservoir Scheme and is in accordance with Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations 2017). This assessment is technical Appendix A9.15 in ES Volume 4. The purpose of this report is to present an assessment as to whether the Scheme is likely to have a significant effect (screening) and then an adverse impact on integrity (Appropriate Assessment) on a European designated site.
- 1.4 Information has been collated by Atkins on behalf of the applicant in order to provide information to assist the Competent Authority (East Hampshire District Council and Havant Borough Council) to assess whether there would be a likely significant effect as a result of the Scheme on any European sites, as required by the Conservation of Habitats and Species Regulations 2017 (as amended), known as the Habitats Regulations. Screening forms the first stage of the HRA process and is designed to identify those elements of a project which are likely to give rise to significant adverse impacts on European sites. This report presents the results of the HRA Stage 1 screening assessment (Section 6). Following the results of the screening assessment, Stage 2 Appropriate Assessment (Section 9) was undertaken for the following sites:
- Chichester and Langstone Harbour SPA;
 - Chichester and Langstone Harbour Ramsar Site;
 - Solent Maritime SAC; and,
 - Sussex bat SACs: Singleton and Cocking Tunnels SAC and Ebernoe Common SAC.
- 1.5 The designs for the proposed Scheme are yet to be finalised. This is therefore a draft report and will be updated for the submission of the planning application to the Competent Authority.
- 1.6 This report has been prepared for a draft submission to Natural England as part of a pre-application consultation.

¹ Arup, October 2009. Havant Thicket Winter Storage Reservoir, Appropriate Assessment – Stage 1 Screening. Job number 123755-40

Outline of this report

1.7

This report comprises:

- Section 2 - describes the Scheme and functionality during construction and operation;
- Section 3 - outlines the methodology used for the HRA Screening;
- Section 4 - identifies European designated sites and scopes out sites through coarse screening;
- Sections 5 - identifies the baseline for European designated sites and provides a summary of the potential of likely significant effects;
- Sections 6 - Stage 1: Screening matrix for the Solent Maritime SAC, Chichester and Langstone Harbour SPA and Chichester and Langstone Harbour Ramsar site;
- Section 7 - provides the in-combination effects assessment;
- Section 8 - provides the conclusions of the HRA Stage 1 Screening assessment;
- Section 9 - contains the HRA Stage 2 Appropriate Assessment;
- Section 10 - contains the conclusions;
- Section 11 - contains the appendices.

2 The Scheme

Scheme description

- 2.1 This report has been produced to inform determination of Portsmouth Water's planning application to construct the Havant Thicket Reservoir (reservoir site) and associated pipeline corridor to Bedhampton pumping station. A site location plan of the Scheme is shown on the drawings in Appendix A.1 Site Location Plan of this HRA Screening Report. 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 as required. On completion of the Scheme, the increase in water supplies available to Portsmouth Water will enable additional water to be supplied to Southern Water to address the deficit caused by the reduction of its abstraction licences on the River Itchen and River Test.
- 2.2 The extent of the reservoir development is currently proposed to be approximately 1.6 km from east to west and 800 m from north to south with a storage capacity of approximately 8,700 million litres. Water will be pumped into the reservoir from Portsmouth Water sources at Havant and Bedhampton Springs, providing a sustainable supply of water with no requirement to change the existing volume of the Environment Agency abstraction licence.
- 2.3 The reservoir was selected by the Water Resources in the South East (WRSE) modelling as a solution to future potential water shortages in the region. The Scheme is a collaboration between PW and Southern Water and results in reduced abstraction from internationally and nationally designated chalk streams (River Itchen Special Area of Conservation (SAC) and Site of Special Scientific Interest, (SSSI) and River Test SSSI).
- 2.4 The outline design of the reservoir is planned to be completed by the end of 2020 together with an Environmental Statement to support the planning application for the Scheme.
- 2.5 Following completion of detailed design, construction of the reservoir embankment is planned to commence in 2023, with final commissioning of the reservoir by March 2029.
- 2.6 Within this report where mention is made of 'the Site' this refers to the reservoir development footprint and the associated pipeline corridor. The areas covered by the Scheme are the Havant Thicket Reservoir, the 'reservoir site', and the pipeline corridor. Where reference in this report is made to the reservoir site, this only refers to the Havant Thicket reservoir site. The pipeline corridor is always referred to separately. The Havant Thicket Forestry England (FE) land located to the north, Bells Copse located to the west and the Portsmouth Water owned land within Staunton Country Park (SCP), located immediately south of the proposed reservoir footprint are ecological enhancement areas included within the Site boundary shown in Appendix A Site Location and Pipeline Route Location Plan.

Scheme overview

The Reservoir Site

- 2.7 The proposed reservoir site is located on the northern edge of Havant in Hampshire, centred on Ordnance Survey National Grid Reference (OSNGR) SU 715 097, shown on the site location plan in Appendix A Site Location and Pipeline Route Location Plan.
- 2.8 The reservoir site is situated within a mixed urban and suburban setting with dense residential development to the south and south-west (Leigh Park and Warren Park). The A3(M) road runs parallel (north/south) to the site approximately 500 m to its west. The reservoir site is located within a shallow valley located between the residential settlements of Leigh Park and Rowlands Castle. It has an area of approximately 160 ha 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 the south east to north west which is known as The Avenue. The Avenue contains habitats for birds, insects, reptiles, bats and dormice and includes a small lake. Three other areas of Ancient Woodland, Middle Clearing, Round Wood and Corsican Pine Plantation, are located within the Site. A Public Right of Way (bridleway) extends across the reservoir 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 reservoir site are designated main rivers by the Environment Agency at that point.

- 2.9 The residential areas of Warren Park and Leigh Park lie to the west and south-west of the reservoir site. The settlements of Rowlands Castle and Stansted are around 200 m 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 reservoir site and along the pipeline corridor. The pipeline route passes through the town of Bedhampton.
- 2.10 The woodland directly north of the reservoir site, an area consisting of approximately 99 ha of predominately pine woodland, is owned and managed by Forestry England for timber production and is also classified as ancient woodland and designated as a Site of Importance for Nature Conservation (SINC). The area is also occupied by land locally known as Havant Thicket, Long Wood and Furzy Plain.
- 2.11 Directly to the west of the reservoir site are open areas of grassland and woodland known as Bell's Copse, also owned by Forestry England, and a small area of woodland known as Cabbagefield Row, both of which are ancient woodlands. South of these woodlands lies the residential district of Leigh Park.
- 2.12 Land to the south and south-west of the reservoir site comprises the residential areas of Warren Park and Leigh Park, the nearest of which are present on Swanmore Road approximately 20 m from the reservoir site.
- 2.13 A large area of the reservoir site is part of Staunton Country Park. A Country Park is an area designated for people to visit and enjoy recreation in a countryside environment. The area of Staunton Country Park within the reservoir site is mainly open grasslands.
- 2.14 Portsmouth Water purchased the reservoir site from the Forestry Commission (now Forestry England) in 1965 and Portsmouth City Council in 1966. The area, which will accommodate the reservoir and visitor facilities, measures 1.6 km in length from east to west and 0.8 km from north to south. Since its purchase, the land has been improved for agricultural use through the removal of tree stumps, drainage and soil improvement. It is currently let to Staunton Country Park and managed by Hampshire County Council (HCC) who use it for grazing. The reservoir site is also used by the local community for walking, horse riding and cycling.
- 2.15 The reservoir site was chosen as suitable for a reservoir because it sits in a valley on clay, which provides a natural seal for water.

Reservoir Site Access

- 2.16 Two preferred access roads have been identified: a south option and north option. Both were shortlisted as the preferred options following a route option evaluation exercise. This covered the evaluation of 11 possible options that were assessed against: environmental, engineering, safety and project drivers.
- 2.17 As the construction traffic assessment for the reservoir and pipeline has developed it has influenced the access road provision. In the interest of impact mitigation, it is likely that both options will be developed to spread the impact of the construction traffic and consequentially reduce the impact in any one area.
- 2.18 The south option comes off Swanmore Road and along the western boundary of the site to the visitor car park. The north option comprises a single lane single carriageway with passing bays, following the alignment of an existing track through woodland between the B2149 and the visitor car park. The verges to the access road have been reduced in width to reduce overall construction width and impact on the woodland.

- 2.19 Construction traffic accessing the reservoir site will use both the north option with the use of temporary traffic signals used in conjunction with the passing bays, and the south option².

The development in operation

- 2.20 The proposed reservoir will store surplus water from the springs at Havant and Bedhampton that, during the winter and spring, would flow into the following European Sites via the Hermitage Stream: Chichester and Langstone Harbours internationally designated Special Protection Area (SPA), Ramsar Site and the Solent Maritime Special Area of Conservation (SAC). Conditions were voluntarily agreed and applied following the review of the consent by the EA³ upon Portsmouth Water's Abstraction licence at Havant and Bedhampton to ensure that sufficient flows to support habitats within these European designated sites will be maintained. The licence change took into consideration the volume needed for the reservoir. The surplus spring water will be pumped from Havant and Bedhampton springs to the reservoir by underground pipeline. A plan of the proposed pipeline route is provided in Appendix A.2 Pipeline Route Sections Plan.
- 2.21 It is envisaged that during years of average meteorological conditions the reservoir will remain full almost all year round, but in drier years when demand may be high, water may be drawn down to augment supplies. In extreme years or if demand increases significantly, the reservoir could be drawn down to very low levels. Water levels would be restored as quickly as practical during subsequent winters by pumping from the Havant and Bedhampton Springs, within the constraints of the EA abstraction licence.

Pipeline route

- 2.22 The pipeline route is hydrologically linked to Langstone Harbour and the associated European designated sites. Potential impacts on these European designated sites are covered in this HRA Screening Assessment and Appropriate Assessment.
- 2.23 A water pipeline is proposed to be installed to serve the reservoir. The pipeline is required to pump surplus water from the Havant and Bedhampton Springs, at the southern end of the pipeline, to fill the reservoir. The same pipeline will carry water back to the springs to link in with existing Portsmouth Water supply and treatment infrastructure.
- 2.24 The proposed 4.4 km pipeline route from Bedhampton to the reservoir site follows a fairly sinuous course along the bank of the Hermitage Stream and through several residential roads with a key aim, wherever possible, to avoid major thoroughfares and minimise impacts on residents and the travelling public.
- 2.25 The pipeline route extends from the Portsmouth Water pumping station at Bedhampton, northwards through the town of Havant, to the southern edge of the proposed reservoir site. The beginning and end points of the route are centred on Ordnance Survey National Grid References (OSNGR) SU 7134 0911 and SU 7053 0638 respectively (Appendix A.2 Pipeline Route Sections Plan).
- 2.26 The pipeline route has been split into sections to aid the description of features:
- The first section of the pipeline (at the most southern point) is from Bedhampton to the emergency drawdown location at the Hermitage Stream.
 - The pipeline route runs north along the Hermitage Stream before turning north-east and broadly following the Riders Lane Stream towards the proposed reservoir site. A more detailed description is provided below:

² Atkins.(2020) Havant Thicket Reservoir Project. Engineering and Design Report. Doc No: HTR-ATK-XX-XX-RP-Z-0060 Rev P01.

³ Environment Agency (2010). Licence Serial No: 11/42/36.2/1

- The most southern point of the pipeline route is at the Bedhampton Pumping Station (Section A). From here, the route extends north and east along residential roads (Section B) and through school grounds (Section C).
- At Fraser Road, the route runs north in parallel to Hermitage Stream for approximately 1.2 km (Sections D and E) before crossing the stream and turning east along Highclere Avenue through further residential development (Sections F).
- The pipeline route then crosses the Riders Lane Stream east of Ellisfield Drive before re-entering a residential area (Section G).
- At the northern end of the route, the pipeline splits into two route options; one which flanks the eastern edge of Great Copse (Section H) and the other which runs along High Lawn Way. Only one of these routes will be utilised.
- North of this the pipeline route crosses Middle Park Way and enters grassland within Staunton Country Park (SCP) (Section I).
- The route terminates at the southern end of the proposed the reservoir site.

Pipeline construction

- 2.27 A bi-directional pipeline of minimum 700mm diameter is required to pump spring flows from Bedhampton Springs to Havant Thicket reservoir. Flows will gravitate back down in the same pipeline from the reservoir to Bedhampton, where they will be boosted and transferred to Farlington water treatment works (WTW) for treatment prior to distribution across Portsmouth Water's supply network⁴.
- 2.28 The proposed 4.4 km pipeline route from Bedhampton to the reservoir site follows a fairly sinuous course along the bank of the Hermitage Stream and through several residential roads with a key aim, wherever possible, to avoid major thoroughfares and minimise impacts to residents and the travelling public. A trenchless crossing of the railway line has been proposed with possible additional sections of trenchless installation to facilitate construction through other pinch points, e.g. adjacent to the Hermitage Stream⁴.
- 2.29 The pipeline also provides a conduit for the balance of flows not discharged at the reservoir emergency discharge point at Riders Lane stream. This flow to be conveyed over halfway along the route, into the Hermitage Stream at its confluence with the Riders Lane Stream. This section of pipeline is decreased in size to 1200mm diameter (previously 1500mm)⁴.
- 2.30 To ensure that the Riders Lane Stream has adequate capacity to accommodate the additional flow without increased risk of flooding, improvements will likely need to be made to three culverted road crossings at Middle Park Way, Dunsbury Way and Brubrook Way to remove local restrictions⁴.
- 2.31 The pipeline will cross Riders Lane stream and Hermitage stream, both designated as 'main rivers' by the Environment Agency. Both river channels are relatively narrow at these crossing points, hence a dry open cut trench methodology is selected at this stage, as part of which flow will be maintained through damming and using of temporary 'flume' pipes installed in the bed of watercourse. This methodology will require environmental permitting and will be developed in consultation with the Environment Agency⁴.

Environment Agency Abstraction and Impoundment Licences

- 2.32 There is an Environment Agency (EA) abstraction licence for the Havant and Bedhampton Springs Source. In summary, the abstraction licence requires Portsmouth Water to maintain current flow in streams that are hydrologically linked to the Scheme, thus the flow of water from the Hermitage Stream into Langstone harbour will be

⁴ Atkins. June (2020). Havant Thicket Reservoir Project. Engineering and Design Report. Doc No: HTR-ATK-XX-XX-RP-Z-0060. Rev: P01. Section 3

maintained. The licence puts in place monitoring requirements to ensure these flows are maintained. The existing abstraction licence will remain in place during construction of the reservoir and will be amended for operation to allow Portsmouth Water to abstract water for storage in the reservoir. There will be an additional new licence to allow water to be abstracted from the reservoir for public supply. This will be applied for during the construction period to ensure it is in place for the operation of the reservoir as it will become a new 'source of supply'.

2.33 A copy of the Portsmouth Water abstraction licence and monitoring protocol is included in Appendix A.3 EA Abstraction Licence.

2.34 The total measured flow of water into Brockhampton Mill Lake is restricted under an EA abstraction Licence to be a sum of flows, shown in Table 2-1 - The abstraction licence for the springs is as follows:

2.35 The abstraction licence for the springs is as follows^[1]:

Table 2-1 - Abstraction licence for springs

Instantaneous	6,910 m ³ /hr	165.84 Ml/d
Daily	137,000 m ³ /day	137 Ml/d
Average	35,770,000 m ³ /year	98 Ml/d

2.36 At the same time, two environmental flows need to be maintained 3 hours either side of low tide:

- Brockhampton Mill Lake ≥ 70 l/s [monitor at ≤ 140 l/s]
- Havant-Langstone Mill Stream ≥ 15 l/s [monitor at ≤ 30 l/s]

2.37 The triggers for monitoring are the net overflow rate for the Brockhampton Mill Lake flow and the Idsworth Well level (at 15 m AOD) for the Langstone Mill Stream. Gauging of the streams to measure actual stream flow is required once the trigger values are reached.

2.38 Any excess spring water collected by the Portsmouth Water raw water collection pipe work system not used for public water supply is discharged into the Hermitage Stream via two overflows, or in to the Brockhampton Stream via a third overflow.

2.39 A control house located on the southern boundary of the reservoir site will bring together raw water outlet/inlet and overflows pipelines. The majority of this pipework is carried under the new reservoir embankment in a culvert. The overflow pipe passes around the toe of the dam to discharge, via a submerged discharge chamber into the existing stream.

2.40 The Environment Agency has advised that an Impoundment Licence for the reservoir will be required prior to the commencement of construction, confirming details of the storage volume and compensation flow^[2]. Compensation flow would be measured and reduced in energy at the outlet from a submerged discharge chamber located next to the control building and released downstream in accordance with the EA Impoundment Licence.

2.41 The EA Impoundment licence will mandate that compensation flows from the reservoir at the control house will maintain existing flow rates within the Riders Lane Stream, matching the natural run off from the upstream catchment, and hence into the Hermitage Stream and on into Langstone Harbour. A programme of flow gauging and monitoring will be undertaken prior to the reservoir construction to define the compensation flow to be incorporated within the Impoundment Licence, as agreed with the Environment Agency to guarantee that required flow conditions are achieved.

^[1] Atkins (17/12/19). Havant Thicket Reservoir, Draft Technical Note. Raw Water Springs, 5169117

^[2] At this stage it is understood that "commencement of construction" relates to works on the reservoir embankment rather than initial enabling works such as the access road. Further consultation is required with the EA to confirm the timing of the Impoundment Licence.

Emergency Drawdown

- 2.42 Havant Thicket Reservoir will operate as a pumped storage reservoir utilising surplus water from the Bedhampton and Havant Spring source. The outline design of the reservoir includes provision for an emergency discharge facility. The emergency discharge system is required in accordance with the Environment Agency Guide to Drawdown Capacity for Reservoir Safety and Emergency Planning (2017), to allow the water level within the reservoir to be reduced rapidly in the event of failure of the reservoir structure. The reservoir has been designed in accordance with relevant legislation and policy and will be owned and maintained by Portsmouth Water following the requirements set out in the Reservoirs Act 1975. The probability of reservoir failure is therefore highly unlikely.
- 2.43 This type of emergency scenario needs to consider the impacts of both a reservoir breach and / or the need for emergency drawdown. Whilst the probability of this scenario is highly unlikely⁵ the impact of this scenario on flood risk has been considered in detail in the Flood Risk Assessment (Appendix A15.2 of the ES Volume 4).
- 2.44 Flood storage capacity in the reservoir has been assessed to contain flood inflows below the embankment crest, with an overflow spillway designed to pass excess floodwater. The reservoir operational management plan will ensure flood storage capacity of the reservoir is always maintained.
- 2.45 As part of the need to plan for emergency scenarios, an assessment of how emergency drawdown flows will be safely managed, has resulted in the need to make improvements to three existing culverts along the Riders Lane Stream at Middle Park Way, Dunsbury Way and Brubrook Way. These culvert improvements will increase the capacity of the Riders Lane Stream and the ability of the watercourse to safely convey emergency drawdown flows. The full details of this emergency scenario and the culvert improvements are provided in the Flood Risk Assessment (Appendix A15.2 of the ES Volume 4). The culvert improvements are considered to be an enhancement to Riders Stream.
- 2.46 In case of an emergency drawdown, water from the reservoir will be released to the Riders Lane stream from an Emergency Discharge Valve located at the control house on the reservoir site. In addition, a proportion of the emergency discharge flow will be released to the Hermitage stream via the bi-directional pipeline, which allows for the transfer and discharge of water between the Bedhampton Springs and the reservoir. The first section of the pipeline between Bedhampton and the Hermitage Stream will have a diameter of 700 mm (approx. 1,650 m in length) to allow for the normal pump-and-return flows to and from the reservoir. The upper section of the pipeline between the Hermitage Stream and the reservoir site will have an increased diameter of 1200 mm (approx. 2,750 m in length) to accommodate the emergency flow. The location of the Emergency Discharge Valve at the Hermitage Stream is not yet fixed but will be located on the Hermitage Stream upstream of the Riders Lane Stream confluence and Purbrook Way (CH 1800 – CH 2050, refer to study section 4 described in Volume 4, Appendix A15.2 of the Environmental Statement), subject to geomorphology modelling, flood modelling and aquatic/ecological assessment.
- 2.47 Once the reservoir has been commissioned, a testing programme for the emergency discharge system will be implemented to ensure safe operation of the emergency discharge valves is maintained. It is likely that the testing would occur twice per year, following Environment Agency guidance (Environment Agency 2017⁶). The testing will be carefully planned in agreement with the Environment Agency during periods of low or average flow within the downstream catchment. The emergency discharge valves at the reservoir site and the Hermitage stream will be tested individually, involving the partial opening and closing of the valves over a short duration of a few minutes to limit flow

⁵ Atkins. January (2020). Havant Thicket Winter Reservoir Storage. Emergency Discharge Study. Preliminary Review of Draw Down Capacity. Portsmouth Water. 5165942/61/DG/1022

⁶ Environment Agency 2017b. Guide to drawdown capacity for reservoir safety and emergency planning, published 11 August 2017. Available [online] at: <https://www.gov.uk/government/publications/guide-to-drawdown-capacity-for-reservoir-safety-and-emergency-planning>

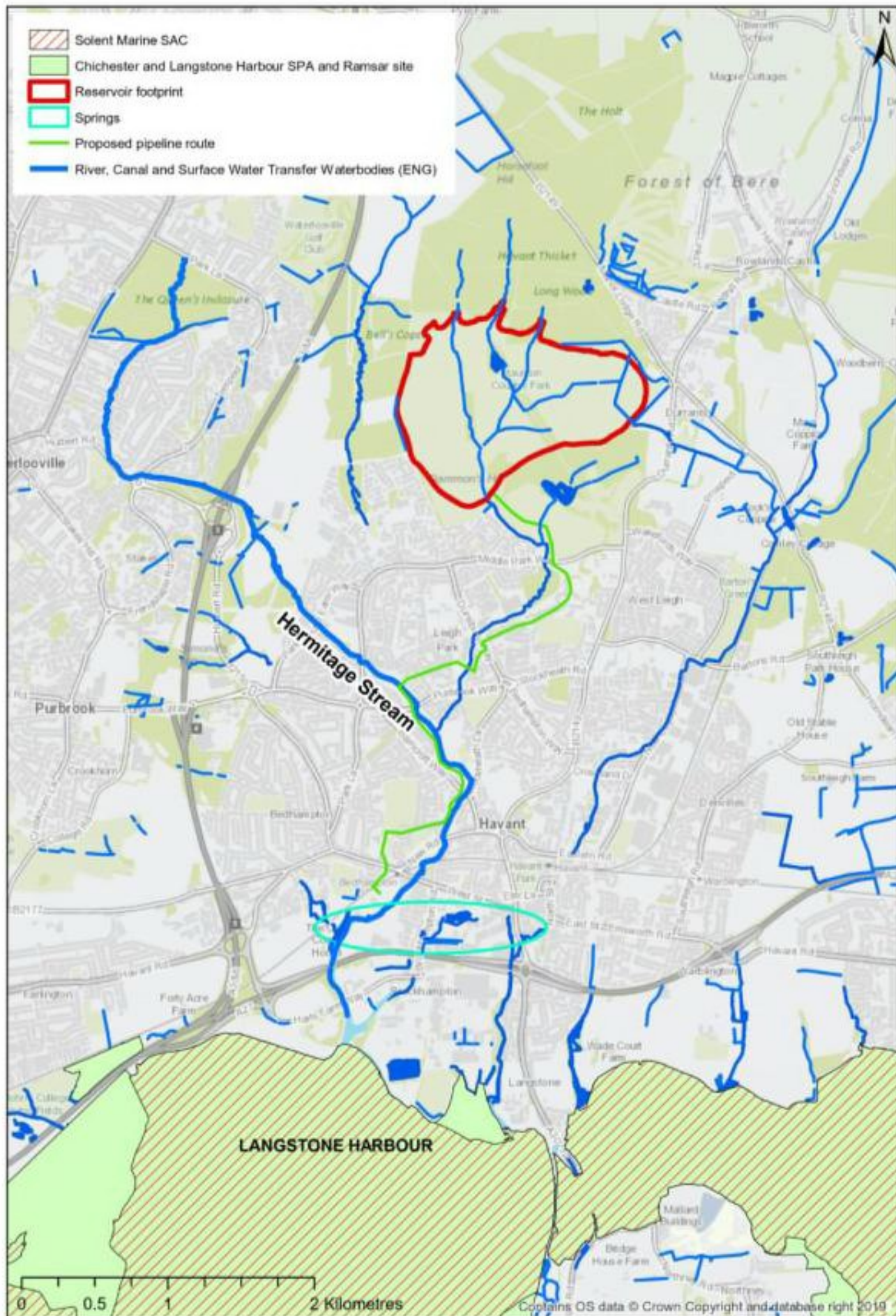
releases to the streams. Hence any impacts on flows reaching Langstone harbour as a result of the valve testing would be insignificant.

Hydrological links to the development

- 2.48 The following Figure 1-1 shows all hydrological links that flow through the Scheme from the north and south where they join Langstone Harbour⁷.

⁷ Atkins 2020. HTR Water Framework Directive (WFD) Screening Assessment Atkins Doc No.: HTR-ATK-XX XX-RP-Z-0016. Atkins Revision No.: C03

Figure 2-1 - Hydrological Connectivity Plan



- 2.49 There are three ephemeral tributaries that flow into the reservoir footprint (see Figure 2-1). The middle tributary flows into an online pond (Upper Lake), which is also within the reservoir footprint and is 0.65 ha. The three tributaries join to form Riders Lane Stream, an ephemeral stream, within the reservoir footprint which then flows south until its confluence with the Hermitage Stream. Riders Lane stream is largely natural, although some sections are concrete lined.
- 2.50 Riders Lane stream is heavily incised and shaded by trees. Hermitage Stream flows south from its confluence with Riders Lane Stream and is a perennial watercourse. Most of its length is lined with concrete on both the bed and banks, and due to this modification is largely straight.
- 2.51 The section of Hermitage Stream above its confluence with Riders Lane Stream has been restored in the past with the concrete banks removed and woody features placed along the banks and perpendicular to the flow within the channel to replicate riffles at low flow. The concrete channel is present on Hermitage Stream until it reaches a 6-weir system, below which the river is initially more natural. In this more natural section, there are two overflow inflows from Havant and Bedhampton Springs. At the location of the spring inflows, and up to the weirs, the river is within the tidal limit and the long-term gauge data shows continuous flow.
- 2.52 The Hermitage Stream will also be crossed by the inlet/outlet pipeline between the reservoir and Bedhampton pumping station. Hermitage stream flows south into Langstone Harbour.
- 2.53 The channel where the Hermitage Stream enters Langstone Harbour is man-made, not a natural channel. The alignment of the Hermitage Stream south of the A27 was permanently changed after 1969 to facilitate the construction of a large municipal mixed waste landfill by reclamation of the harbour at what is now known as Broadmarsh. The channel is man-made from south of the A27 and armoured with solid concrete blocks. There is no likelihood that the harbour channel could be restored to any kind of natural condition, as the armouring must be maintained by the relevant authorities to prevent erosion of the landfill into the harbour.
- 2.54 The Hermitage Stream is tidal to the point where the main springs overflow discharge takes place.
- 2.55 The channel through Langstone Harbour to the mouth of the Hermitage Stream is dredged to maintain a deep-water channel for ships to access the gravel wharf south off Harts Farm Way. This includes the northern section of channel within the Solent SAC at the mouth of the Hermitage Stream.

Havant and Bedhampton Springs

- 2.56 Portsmouth Water propose to take surplus freshwater discharging naturally from the Havant & Bedhampton Springs, which currently flows into Langstone Harbour, and store the excess in the proposed Havant Thicket storage reservoir.
- 2.57 Not all of the springs in the Havant & Bedhampton Springs complex are utilised for public water supply. A number flow directly in to the Brockhampton Stream, Hermitage Stream or the Lavant Stream. This is a key point as these other springs help to maintain a constant supply of freshwater to Langstone Harbour. Figure 2-1 shows the springs location.
- 2.58 Excess water from the all of the springs which are connected to the Portsmouth Water raw water collection pipe work is captured and discharged into the Hermitage Stream via two overflows, or in to the Brockhampton Stream via a third overflow. Thus, there is always an excess of water passing into the overflow system.
- 2.59 There is no pumped abstraction of the groundwater at Havant & Bedhampton Springs. Water discharges naturally from the springs into a series of collection chambers. From there it passes by gravity to either the Havant or Bedhampton Springs Pumping Stations.

Chichester and Langstone Harbour SPA and Ramsar Site and the Solent Maritime SAC

- 2.60 The sites are hydrologically linked via the Riders Stream connecting to Hermitage Stream that enters Langstone Harbour and the associated European designated sites: Chichester and Langstone Harbour SPA, Chichester and Langstone Harbour Ramsar Site and Solent Maritime SAC and therefore potential impacts on these European designated sites are covered in this Habitat Regulations Screening Assessment as discussed in Section 6.
- 2.61 The form of freshwater inputs within Langstone Harbour includes direct flows from marinas and sewage treatment works, natural channels formed by groundwater springs, natural overland channels and diffuse seepages over mudflats. A number of surface water catchments drain to the Harbours including the Hermitage Stream, Lavant Stream and River Ems (Figure 2-1).
- 2.62 The Langstone Harbour is situated on the coastal plain south of a ridge of chalk downland and rainfall filters through the chalk to emerge at a series of springs (Havant and Bedhampton Springs) arising within alluvial gravels and clay at Havant and Bedhampton. The outflow from these springs enters at Langstone Harbour via a number of freshwater streams⁸.

Construction design / phasing

- 2.63 The construction of the reservoir will be spread over several phases over approximately 10 years to take account of detailed design, environmental mitigation, preparatory operations, seasonal clay working limitations and time taken to fill the reservoir with water. The construction compound will be located within the north west corner of the reservoir site.
- 2.64 The key elements of the proposed construction sequence are indicated in **Error! Reference source not found.** and more detailed information is located in Chapters 1-6 in ES Volume 2 of the Environmental Statement:

Table 2-2 - Indicative construction programme

Table	Key activity / milestone
Spring 2021	Planning permission expected
Spring 2021 – November 2022	Commencement of works. Species relocation, tree felling, preparatory work on habitats before 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.

⁸ ECOSA, September 2012. Havant Thicket Winter Storage Reservoir Winter bird and freshwater channel flow surveys in Langstone and Chichester Harbours 2007/2008

3 Methodology

The Scheme

- 3.1 All available information about the Scheme was gathered in order to assess whether the Scheme is likely to have any significant effects on a European site.

Background to HRA

- 3.2 HRA is required under Regulation 63 of the Habitats Regulations and a competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which:
- (a) is likely to have a significant effect on a European site or a European offshore Maritime site (either alone or in combination with other plans or projects), and
 - (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives.
- 3.3 European Sites include Special Areas of Conservation (SAC) and Special Protection Areas (SPA). HRA is also required, as a matter of UK Government policy for potential SPAs (pSPA), candidate SACs (cSAC) and listed and proposed Wetlands of International Importance (Ramsar sites and pRamsar sites) for the purposes of considering plans and projects, which may affect them⁹. Hereafter, all of the above designated nature conservation sites are referred to as 'European Sites.'
- 3.4 The stages of the HRA process are as follows:
- Stage 1 – Screening: To test whether a plan or project either alone or in combination with other plans and projects is likely to have a significant effect (LSE) on a European Site;
 - Stage 2 – Appropriate Assessment: Where LSE have been identified, to determine whether, in view of a European Site's conservation objectives, the plan (either alone or in combination with other projects and plans) would have an adverse effect (or risk of this) on the integrity of the site with respect to the site structure, function and conservation objectives. If adverse impacts are anticipated, potential mitigation measures to alleviate impacts should be proposed and assessed;
 - Stage 3 – Assessment of alternative solutions: Where a plan is assessed as having an adverse impact (or risk of this) on the integrity of a European Site, there should be an examination of alternatives (e.g. alternative locations and designs of development); and,
 - Stage 4 – Assessment where no alternative solutions remain and where adverse impacts remain: In exceptional circumstance (e.g. where there are imperative reasons of overriding public interest), compensatory measures to be put in place to offset negative impacts.
- 3.5 This report comprises HRA Stage 1: Screening of likely significant effects and Stage 2: Appropriate Assessment.

HRA screening methodology

- 3.6 The Habitats Regulations do not specify a methodology for assessment. The methods and approach used for this screening have therefore been conducted having regard to the online publication *The Habitats Regulations Assessment Handbook*¹⁰ which brings together relevant law, policy, methodology, technical advice and good practice into one comprehensive updatable source.

⁹ National Planning Policy Framework. Ministry of Housing, Communities and Local Government. February 2019.

¹⁰ Tyldesley, D., and Chapman, C., (2013) *The Habitats Regulations Assessment Handbook*, DTA Publications Limited www.dtapublications.co.uk [accessed online April 2019].

- 3.7 In addition, the Highway's Agency *Design Manual for Roads and Bridges LA 115*, Habitats Regulations Assessments, (September 2019)¹¹ was used, as it provides comprehensive guidance on recommended areas of search to identify sites that might be subject to impacts from road projects.
- 3.8 The approach followed for this HRA Screening can be summarised as follows:
- Determine whether the Scheme is relevant and identify the Competent Authority.
 - Identify the geographical scope for the assessment, along with the rationale for this decision.
 - Eliminate from further assessment those sites where there is no pathway or route for potential impacts (Coarse Screening).
 - Identify European Sites in and around the Scheme, reason for designation, and site features. Information on the qualifying features, the citation for each site, the Natura 2000 Standard Data Form, conservation objectives and Site Improvement Plans were obtained from the Natural England website and the Joint Nature Conservation Committee (JNCC) website. Condition assessment information for the underpinning Sites of Special Scientific Interest (SSSI) was obtained from the Natural England website to provide important contextual information.
 - Identify the nature of potential impacts arising from the Scheme during construction and operation.
 - Assess whether the Scheme is likely to have a significant effect on conservation objectives of each European site alone or in combination with other plans or projects. This involves an assessment of the likelihood of a significant effect arising from each of the impacts, in respect of each of the interest features of the European Site.
 - For those sites where no effects are likely, report that no likely significant effects exist. If effects are judged likely, or uncertainty exists, the precautionary principle must be followed, and an Appropriate Assessment undertaken.

Requirement for HRA and definition of competent authority

- 3.9 Under the Habitats Regulations, Competent Authorities i.e. any minister, government department, statutory undertaker, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the EC Habitats Directive. In accordance with Regulation 63 the Habitats Regulations, as the proposal is not directly connected with or necessary to the management of any European Sites, the competent authority, before deciding to undertake, or give any consent should subject the proposal to an appropriate assessment of its implications for the sites, in view of each site's conservation objectives.
- 3.10 The Scheme is expected to reduce the need for abstraction elsewhere and it is anticipated that this will result in beneficial effects on the River Itchen SAC (reducing abstraction related stress). However, since this is not the sole purpose of the Scheme, nor is this the only European site that will be potentially affected, it is not considered that the exception in regulation 63 (b) (*'is not directly connected with or necessary to the management of that site'*) applies in this instance. Therefore, HRA is considered necessary for this Scheme.
- 3.11 The Scheme is located within Havant Borough Council (HBC) and East Hampshire District Council (EHDC) (the Local Planning Authority (LPA)) local authority areas. Planning permission is required for the Scheme and both of these Local Planning Authorities will act as the Competent Authorities. This report accompanies the Environmental Statement (ES), which assesses the effects of the Scheme on biodiversity resources to support the outline planning application, which addresses

¹¹ <https://www.standardsforhighways.co.uk/dmrb/search?q=LA%20115&pageNumber=1>

matters raised in the LPA Scoping Opinions and those highlighted by statutory consultees.

Determination of European Sites included in the HRA

- 3.12 With regards to determining the European Sites to include in the HRA screening assessment, the following criteria were considered:
- All European Sites within 2 km of the Scheme; and
 - Potential hydrological or hydrogeological linkage to a European Site within 5 km; and,
 - European Sites listed as strategic Brent geese sites within the Solent Waders and Brent Goose Strategy (SWBGS)¹² within 300 m¹³;
- 3.13 SACs within 30 km where bats are a qualifying feature¹⁴ (See also notes below).
- 3.14 Two of the identified SACs with bats as a qualifying feature (Ebernoe Common SAC and Singleton and Cocking Tunnels SAC) form part of a collective of SACs along with The Mens SAC. All three SACs include roosting Bechstein's bat as a qualifying feature. They are collectively known as 'The Sussex bat SACs'. Due to the linkage between this group of SACs, The Mens SAC was also included.
- 3.15 The Scheme is located 1.7 km east of the 12 km impact zone of the Sussex bat SACs. The 12 km impact zone encompasses the full extent of the range of foraging areas identified necessary to support bats and is mostly aimed at Barbastelle bats that are known from research (Natural England, 2015) to forage up to 15 km from their roost site, whilst Bechstein's bats tend to forage in and around the woodland where they roost with limited outward travel¹⁶. The impact zone is shown in
- 3.16 Figure 4-1.
- 3.17 There are no legally defined distances for scoping European Sites in the HRA screening assessment. The DMRB approach is to scope up to 30 km of the Scheme for bat SACs, in accordance with the methodology outlined in DMRB, LA 115, (2019)¹⁵. The 12 km impact zone for the Sussex bat SACs is a result of Natural England published data that assessed flight lines and foraging activity of Barbastelle and Bechstein's bat.

Baseline information

- 3.18 The Multi-Agency Geographic Information for the Countryside (MAGIC) database was reviewed on 24th July 2019 and verified in 26th March 2020 to establish the location of European sites located within the vicinity of the Scheme. This included a search for all internationally and nationally designated sites such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Wetlands of International Importance (Ramsar sites), within 2 km of the Havant Thicket Reservoir and associated pipeline route and within 5 km of the Scheme where there are potential hydrological or hydrogeological links to a European site.
- 3.19 The desk study area was extended to include all European Sites within 12 km of the Scheme where bats are a qualifying feature. The rationale for this distance is explained in Section 3.
- 3.20 The following survey reports have been reviewed as part of this assessment and their results incorporated into the baseline Section of this report (Section 5):

¹² <https://solentwbgs.wordpress.com/page-2/>

¹³ The TIDE waterboard disturbance mitigation toolkit states that if geese are within 400m of works then consideration should be given to mitigation including the commencement of works and efforts should be made to avoid high level disturbance at such time if possible. The search area of 300 m is concluded from this study. https://www.tide-toolbox.eu/tidetools/waterbird_disturbance_mitigation_toolkit/

¹⁴ Draft Document: Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol, - Southdowns National Park and Natural England. <https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-15-Draft-Sussex-Bat-SAC-Protocol.pdf>

¹⁵ <https://www.standardsforhighways.co.uk/dmrbs/search?q=LA%20115&pageNumber=1>

- ECOSA, September 2012: Havant Thicket Winter Storage Reservoir Winter Bird and Freshwater Channel Flow Surveys in Langstone And Chichester Harbours 2007/2008.
- Appendix A9.4 Bat survey report in ES Volume 4.
- Appendix A9.9 Bird survey report in ES Volume 4.
- Portsmouth Water. December (2019). Assessment of Bechstein's Bat population size, worst case scenario and time spent foraging on the Havant thicket reservoir site. Report, Portsmouth Water. 5165942/DG/61/1024
- Entec UK Ltd (2006). Langstone and Chichester Harbour SPA wintering bird survey. Entec UK Ltd, Bristol; And, Entec (July 2007), Wintering Bird Surveys 2005/06 and 2006/07 Langstone and Chichester Harbour.
- Atkins. February (2020). Havant Thicket Winter Reservoir Storage, Early Start Studies. Water Quality Study – Water Quality Modelling Report, Portsmouth Water. 5165942/DG/61/1024.
- Atkins. January (2020). Havant Thicket Winter Reservoir Storage. Emergency Discharge Study. Preliminary Review of Draw Down Capacity. Portsmouth Water. 5165942/61/DG/1022
- Atkins. February (2020). Havant Thicket Reservoir Havant Thicket Outline Design. Review of Pipeline Options.
- Atkins. June (2020). Havant Thicket Reservoir Project. Engineering and Design Report. Doc No: HTR-ATK-XX-XX-RP-Z-0035 Rev P01.
- Atkins. July (2020). Havant Thicket Reservoir. Environmental Statement Chapters 1-6 and 15 in ES Volume 2.

Obtaining information on other projects and plans for in-combination assessment

- 3.21 The Habitats Regulations requires assessment of the potential for likely significant effects of the project 'in combination' with other projects and plans.
- 3.22 The effects of the subject plan or project in combination with other plans or projects are the cumulative effects which will or might result from the addition of the effects of other relevant plans or projects to the effects of the subject plan or project.
- 3.23 The Habitats Regulations Handbook¹⁶ advises that any plans or projects at the following stages may be relevant to an in-combination assessment:
- Applications lodged but not yet determined;
 - Projects subject to periodic review e.g. annual licences, during the time that their renewal is under consideration;
 - Refusals subject to appeal procedures and not yet determined;
 - Projects authorised but not yet started;
 - Projects started but not yet completed;
 - Known projects that do not require external authorisation;
 - Proposals in adopted plans; and
 - Proposals in finalised draft plans formally published or submitted for final consultation, examination or adoption.

¹⁶Tyldesley, D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook, January 2018 edition UK: DTA Publications Limited www.dtapublications.co.uk.

- 3.24 A search was undertaken February 2020 of the following webpages for relevant planning applications and consents, as well as a review of allocated and proposed sites:
- Havant Borough Council
 - East Hampshire District Council
 - Chichester District Council
 - Portsmouth City Council
 - Environment Agency
- 3.25 Atkins Planning team have undertaken reviews of local plan applications and planning applications within 3 km of the Site. This list is not extensive and has been reviewed and agreed with the planning case officer. The projects listed and agreed with the LPA have been used to inform the in-combination assessment and are provided on plans located in Section 7.

Assessing likely significant effects

- 3.26 A critical part of the HRA Screening process is determining whether or not the proposals are likely to have a significant effect on European Sites and, therefore, if they will require an Appropriate Assessment. The concept of 'likely significant effect' as embodied in Article 6(3) of the Habitats Directive and regulation 61(1) of the Habitats Regulations is central to their operation. Its interpretation is well established in law and guidance and embraces the precautionary principle.
- 3.27 The European Court Waddenzee judgement¹⁷ provides clarification regarding the term 'likely'. It concludes that *'any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects.'*
- 3.28 Clarification has also been provided through case law on the meaning of 'likely' in relation to Bagmoor Wind Ltd v The Scottish Ministers¹⁸. 'The word 'likely' in the regulation is not to be construed as an expression of probability, in a legal sense, but as a description of the existence of a risk (or possibility).' Consequently, if the possibility of a significant effect cannot be excluded based on objective information, an Appropriate Assessment will be required.
- 3.29 The European Court Waddenzee judgement also provides further clarification regarding the term 'significant': *'where a plan or project not directly connected with or necessary to the management of a site is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on that site. The assessment of that risk must be made in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project.'*
- 3.30 The Bagmoor Wind case also provides guidance on the term 'objective.' It states: *'Objective, in this context, means information based on clear verifiable fact rather than subjective opinion.'* The Habitats Regulations Handbook¹⁹ states: *'It will not normally be sufficient for an applicant merely to assert that the plan or project will not have an adverse effect on a site, nor will it be appropriate for a competent authority to rely on reassurances based on supposition or speculation. On the other hand, there should be credible evidence to show that there is a real rather than a hypothetical risk of effects that could undermine the site's conservation objectives. Any serious possibility of a risk that the conservation objectives could be undermined should trigger an 'appropriate assessment'.'*

¹⁷ Case C – 127/02 Waddenzee, reference for a preliminary ruling from the Raad van State: Landelijke Vereniging tot Behoud van de Waddenzee, Nederlandse Vereniging tot Bescherming van Vogels v Staatssecretaris van Landbouw, Natuurbeheer en Visserij, 7th September 2004.

¹⁸ Bagmoor Wind Limited v The Scottish Ministers, Court of Sessions [2012] CSIH 93.

¹⁹ Tyldesley, D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook, DTA Publications Limited www.dtapublications.co.uk [accessed online April 2019].

- 3.31 The test for likelihood of significant effects requires that consideration is given to potential causes and potential effects (i.e. any potential impact pathways). To do this, information on the Scheme is needed to identify the potential causes of effects and information on the European site is needed to identify any potential implications related to these effects. In the absence of a potential impact pathway, it can be concluded that no likely significant effect would arise. Relevant aspects (effects) of the Scheme has been checked against all features of the relevant European sites (i.e. screened) to determine whether a likely significant effect may arise.
- 3.32 The judgement as to whether a significant effect is likely needs to be based on the best readily available information. Sources of information may include evidence from projects where similar operations have affected sites with similar qualifying features and conservation objectives and the judgement of relevant specialists that an effect is likely, as well as survey data collected to date for a particular project. In line with the precautionary principle, where there is uncertainty and/or information is lacking in relation to the capacity of the effect to undermine the site's conservation objectives, it must be assumed that there will be an effect, unless further information can be made available to eliminate any areas of doubt.
- 3.33 The implication of the Court of Justice of the European Union (CJEU) judgement referred to as *People Over Wind* (Peter Sweetman v Coillte Teoranta, Case C-323/17) is that competent authorities cannot take account of any *'measures that are intended to avoid or reduce the harmful effects of the envisaged project on the site concerned'*, when considering at the HRA screening stage whether the plan or project is likely to have an adverse effect on a European Site. The effect of this is that the screening stage must be undertaken on a precautionary basis with no regard to any proposed integrated or additional avoidance or reduction measures. Where the likelihood of significant effects cannot be excluded on the basis of objective information, the competent authority must proceed to carry out an Appropriate Assessment to establish whether the plan or project will affect the integrity of the European site, which can include at that stage consideration of the effectiveness of the proposed avoidance or reduction measures.
- 3.34 Subsequent case law (R (Langton) v SSEFRA & Natural England: [2018] EWHC 2190) included a statement that elements that *'are not the mitigating or protective measures which featured in the People Over Wind ruling'* and *'are properly characterised as integral features of the project...'* should reasonably be included in a HRA screening decision. (R (Langton) v SSEFRA & Natural England: [2019] EWHC Civ 1562) did not challenge this view.

Appropriate assessment methodology

- 3.35 For European sites where LSE is predicted, or it cannot be concluded that there is no LSE, an appropriate assessment has been undertaken if a likely significant effect cannot be excluded on the basis of objective information. That is to say, *'if the plan or project is likely to undermine the site's conservation objectives, the assessment of that risk being made in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project'* (in accordance with the Waddenzee judgement, paragraph 45 and 49).
- 3.36 For all sites and associated qualifying features where it cannot be concluded that there will be no LSE, further information required to inform an appropriate assessment includes:
- Conservation objectives of the site;
 - Current condition status of the qualifying features;
 - Site specific and regional population estimates for qualifying features;
 - Assessment of potential impacts on qualifying features – this detailed assessment is usually based upon information provided during the Environmental Impact Assessment (EIA) process; and

- Importance of the Zone of Influence (Zoi) for the relevant qualifying features in the context of site and regional populations.

European Site integrity

- 3.37 The integrity of a site is defined as *'the coherence of the site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the populations of the species for which the site is, or will be designated'* (Natural England, 2019).
- 3.38 European Commission guidance on the provisions of Article 6, emphasises that site integrity involves its ecological functions and that the assessment of adverse effect should focus on and be limited to the site's conservation objectives (European Commission, 2018).

4 Identification of European Sites and potential effect pathways

Scoping the European Sites

- 4.1 The initial search, undertaken using the above parameters, resulted in the identification of ten European Sites, which meet the screening criteria set out in Section 3 Determination of European Sites included in the HRA.
- 4.2 There are four European Sites with hydrological linkage:
- Chichester and Langstone Harbour SPA; the pipeline corridor at its most southern point (Pumping Station at Bedhampton and Havant Springs) is located approximately 1 km north of Chichester and Langstone Harbours SPA. The reservoir site is located approximately 3.85 km north west of the SPA and is hydrologically linked to the Scheme via the Riders Stream and Hermitage Stream.
 - Chichester and Langstone Harbour Ramsar Site; the pipeline corridor at its most southern point (Pumping Station at Bedhampton and Havant Springs) is located approximately 1 km north of Chichester and Langstone Harbours Ramsar Site. The reservoir site is located approximately 3.85 km north west of the Ramsar Site and is hydrologically linked to the Scheme via the Riders Stream and Hermitage Stream.
 - The Solent Maritime SAC; the pipeline corridor at its most southern point (Pumping Station at Bedhampton and Havant Springs) is located approximately 1 km north of the Solent Maritime SAC. The reservoir site is located approximately 3.85 km north west of the SAC and is hydrologically linked to the Scheme via the Riders Stream and Hermitage Stream.
 - The Solent and Isle of Wight Lagoon SAC; the pipeline corridor at its most southern point (Pumping Station at Bedhampton and Havant Springs) is located approximately 3 km north east of The Solent and Isle of Wight Lagoon SAC. The reservoir Site is located approximately 6.85 km north west and is hydrologically linked to the Scheme via the Riders Stream and Hermitage Stream that feed into Langstone Harbour. The Lagoon SAC encompasses a series of lagoons on the south coast of England, located in the marshes at Keyhaven – Pennington area, at Farlington Marshes in Langstone Harbour, behind the sea-wall at Bembridge Harbour and at Gilkicker, near Gosport.
- 4.3 The River Itchen SAC; the pipeline corridor at its most southern point (Pumping Station at Bedhampton and Havant Springs) is located approximately 28.85 km south east of the River Itchen SAC. The reservoir site is located approximately 25 km south east of the River Itchen SAC. The SAC is a classic example of a sub-type 1 chalk river with inland water bodies, bogs, marshes, mesophile and improved grassland and broadleaved and mixed woodland.
- 4.4 Solent and Dorset Coast Special Protection Area (SPA); protects important foraging areas at sea used by qualifying interest features from colonies within already classified SPAs. These qualifying interest features are three species of tern: common tern, Sandwich tern and little tern²⁰. Chichester and Langstone Harbour SPA is one of the four, adjacent, already existing SPA's within the greater Solent where qualifying features will be subject to further protection from the Solent and Dorset Coast SPA due to the inclusion of sub-tidal areas not currently encompassed in the existing SPAs. The landward boundary is set at Mean Low Water (MLW) where it abuts any existing SPA which has terns as existing features to avoid overlapping sites so as to afford the birds protection within the intertidal areas which are used for foraging. The Solent and Dorset Coast SPA is located approximately 4.2 km south west and downstream from the Pipeline Corridor at its most southern point (Pumping Station at Bedhampton and

²⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/560623/solent-dorset-summary.pdf

Havant Springs) and is hydrologically linked to the Scheme via the Riders Stream and Hermitage Stream. A boundary map of the SPA is provided in B.3 The Solent and Dorset Marine Special Protected Area (SPA) Natural England Boundary Map.

- 4.5 There are three bat SACs forming part of the Sussex bat SACs within 30 km of the Reservoir site. As detailed above, The Mens SAC also forms part of this group so has also been considered at this stage as a potential functional link. The three Sussex bat SACs are as follows²¹:
- The Singleton and Cocking Tunnels SAC is located approximately 15 km east of the Scheme. The SAC is two disused railways tunnels, which are home to hundreds of hibernating bats in the winter. Species recorded hibernating include barbastelles and greater horseshoe bats along with the sole remaining greater mouse-eared bat colony in Britain. The site is also important for bats in the autumn where large numbers congregate to swarm which includes mating.
 - The Ebernoe Common SAC is located approximately 29 km south east of the Scheme. The SAC is a complex of woodlands featuring both barbastelle and Bechstein's maternity roosts. Sites with maternity roosts are important as these are where female bats come together in the late spring and summer to give birth to and raise their young and are therefore critical to the conservation of the species.
 - The Mens SAC is approximately 31 km north east of the Scheme and is a broadleaved woodland that features barbastelle maternity roosts.
- 4.6 There is one further SAC with bats as a qualifying feature within 30 km of the Scheme, this is Briddlesford Copses SAC. The Briddlesford Copse complex of woodlands represents the most varied, structurally diverse and species-rich cluster of ancient broadleaved woodland on the Isle of Wight and supports an important breeding population of the rare Bechstein's bat *Myotis bechsteinii*. The bats use holes and crevices in mature trees for roosting and the interconnecting woodlands for feeding.
- 4.7 There are no other sites within 2 km or bat SACs within 30 km and no other sites with hydrological or potential functional linkage.

Coarse screening

Sites fully screened in

- 4.8 For the following sites the potential for effect pathways cannot be readily discounted. These sites have therefore all been taken through to detailed screening.
- Chichester and Langstone Harbour SPA and Solent and Dorset Coast Marine SPA (screened together due to overlapping determination of the SPA²²);
 - Chichester and Langstone Harbour Ramsar Site;
 - The Solent Maritime SAC

Coarse screening of Singleton and Cocking Tunnels SAC and Ebernoe Common SAC

- 4.9 The Sussex bat SACs have a 12 km impact consultation zone²³ (See Figure 4-1, below). The 12 km impact zone for the Sussex bat SACs is based on Natural England published data²⁴ which assessed flight lines and foraging activity of Barbastelle and

²¹ Draft Document: Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol, - South Downs National Park and Natural England. <https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-15-Draft-Sussex-Bat-SAC-Protocol.pdf>

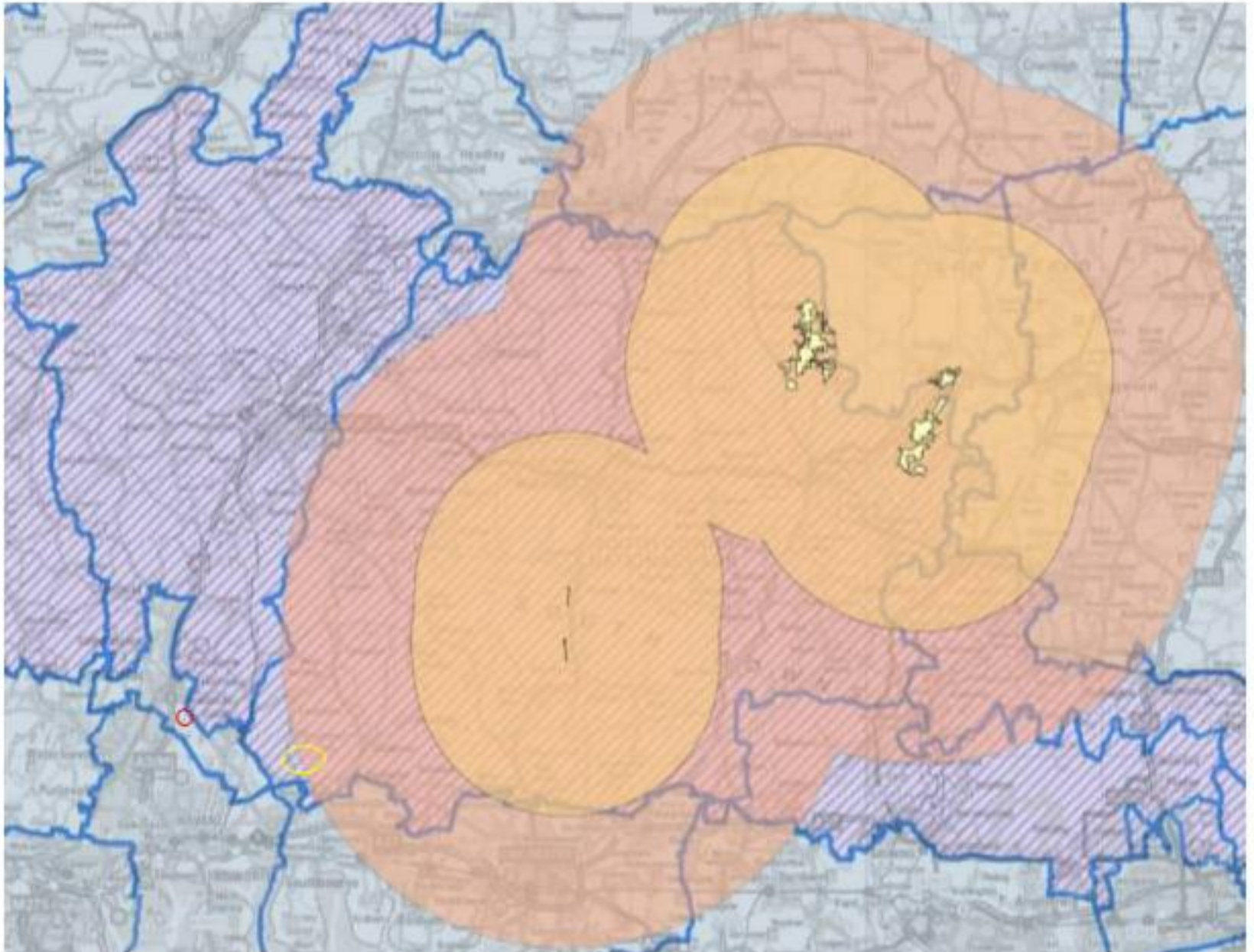
²² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/560627/solent-dorset-boundary-map.pdf

²³ <https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-15-Draft-Sussex-Bat-SAC-Protocol.pdf>

²⁴ Scoping study for the West Sussex Bat Project - Assessing current evidence to recommend conservation measures important to barbastelle and Bechstein's bats of consequence in the project area A report to Natural England. Bat Conservation Trust 2015

Bechstein's bat. The 12 km impact zone encompasses the full extent of the range of foraging areas identified necessary to support bats and is mostly aimed at Barbastelle bats that are known from research to forage up to 15 km from their roost site, whilst Bechstein's bats tend to forage in and around the woodland where they roost with limited outward travel.

4.10 Figure 4-1 - Sussex Bat SACs Consultation Zones - 6 km and 12 km²⁵



4.11 Survey work carried out by Portsmouth Water and ECOSA between 2008 - 2018²⁶ recorded a single Bechstein's bat commuting between day roosts in the reservoir site and a maternity colony in Southleigh Forest located approximately 1.7 km south east of the Site. Southleigh Forest, is located within the 12 km impact consultation zone. Since Southleigh Forest is within the 12 km impact consultation zone for the Sussex bat SACs²⁷ this is considered to be a possible functional link between the reservoir site and the Sussex Bat SAC and therefore a precautionary approach has been taken and the Bechstein's bat qualifying features of Singleton and Cocking Tunnels SAC and Ebernoe Common SAC have been included in the screening assessment.

4.12 All Bechstein's bats captured during the surveys by Portsmouth Water and ECOSA were ringed and to date no direct functional link for Bechstein's between the Havant Thicket Reservoir Site and the Sussex bat SACs has been confirmed by surveys.

²⁵ Southdowns National Park. Natural England. Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol, - Southdowns National Park and Natural England

²⁶ Appendix A9.4 Bat Survey Report in ES Volume 4.

²⁷ Draft Document: Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol, - Southdowns National Park and Natural England. <https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-15-Draft-Sussex-Bat-SAC-Protocol.pdf>

- 4.13 Barbastelle bat, which is also a qualifying feature of the Sussex Bat SACs, was recorded within the reservoir site during surveys undertaken between 2008 and 2018 by ECOSA²⁸. The baseline data for barbastelle indicate that this species is infrequently recorded and unlikely to be roosting on-site or rely on the site for foraging and / or commuting. However, given the presence of individuals on site and suitable habitat present, occasional roosting within the site by single individuals cannot be completely ruled out. This species is more wide ranging than Bechstein's bat and less restricted to woodland habitats. Although barbastelle bats are also a qualifying feature of Singleton and Cocking Tunnels SAC and Ebernoe Common SAC, the species, has been discounted from the screening assessment.

Sites discounted at coarse screening

- 4.14 The following designated sites have been discounted from further assessment for the reasons given below.

The Solent and Isle of Wight Lagoon SAC

- 4.15 The Solent and Isle of Wight Lagoon SAC is hydrologically linked to the Havant Thicket Reservoir and associated pipeline site via the Hermitage Stream that flows into Langstone Harbour. The Solent and Isle of Wight Lagoon SAC includes fourteen coastal lagoons. In Hampshire, there are eight in the marshes in the Keyhaven to Lymington area, one in Langstone Harbour and one at Gilkicker. There are four at Bembridge on the Isle of Wight²⁹.
- 4.16 Shut Lake on Farlington Marshes is an isolated lagoon in marsh pasture that, although separated from the sea by a sea-wall, receives some sea water during spring tides³¹. The Shut Lake lagoon is the nearest lagoon to the Scheme that forms part of the SAC. The Shut Lake lagoon is located approximately 4 km west along the coastline from the point where the Hermitage stream enters Langstone Harbour and is also located on the west side of the Farlington Marshes peninsula facing away from Langstone harbour.
- 4.17 The Langstone Harbour is a tidal harbour where the substrate is naturally dominated by silt. The possibility of any additional introduction of low levels of increased silt mobilised by the construction and operational phases of the Scheme is highly unlikely to have a significant effect on the Shut Lake lagoon, due to the isolated location of the lagoon and due to it only receiving sea water during spring tides, at which point low levels of silt would have washed out into the harbour.
- 4.18 It is considered that the distance of the remaining lagoons along the South of England coast forming part of the SAC (the Gilkicker Lagoon, located approximately 15 km west³⁰ and Keyhaven to Lymington³¹, located approximately 40 km west and the lagoons at Bembridge Harbour³² located 18 km south on the Isle of Wight) is great enough to prevent any likely significant effects from water quality degradation and increased water flow.
- 4.19 The Solent and Isle of Wight Lagoon SAC is therefore scoped out and will not be considered further in this assessment.
- ### The River Itchen SAC
- 4.20 The Scheme is a collaboration between Portsmouth Water and Southern Water, through the Water Resources in the South East group, to provide resilient water supplies to the region. It supports reduced abstraction on chalk rivers and Southern Water's imminent

²⁸ Appendix A9.4 Bat Survey Report in ES Volume 4.

²⁹ <https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK0017073&SiteName=solent&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&HasCA=1&NumMarineSeasonality=0&SiteNameDisplay=Solent%20and%20Isle%20of%20Wight%20Lagoons%20SAC#sitemaps>

³⁰ A sluiced lagoon formed of two interconnected basins with marked seasonal salinity fluctuation and supports a high species diversity²¹

³¹ Are part of a network of ditches and ponds within the saltmarsh behind a sea-wall running along the northern shore-line of the western Solent. The lagoons receive sea water by groundwater percolation, and freshwater by rainfall and by marshland streams

³² Formed in a depression behind the sea-wall and sea water enters by percolation and by man-made culverts²¹

reduction of its abstraction licences on the Rivers Test and Itchen. Thus, reduction in abstraction on the River Itchen is a fundamental part of the Scheme. Havant Thicket Reservoir will be filled with surplus spring water in winter and allow Portsmouth Water to provide a flexible bulk transfer of around 21 Ml/d to Southern Water, as part of an overall commitment to supply 60 Ml/d from a range of sources by 2029³³.

- 4.21 The River Itchen SAC is located in a separate catchment to the reservoir site and pipeline corridor and is located approximately 25 km north west of the reservoir site and 28.75 km to the Pumping Station Site. There is no potential for indirect impacts and the River Itchen SAC is therefore scoped out and will not be considered further in this assessment.

The Mens SAC

- 4.22 The Mens SAC, a Sussex bat SAC, is located approximately 31 km east of the reservoir site. Barbastelle bats are the only qualifying feature of The Mens SAC. Barbastelle have been recorded within the reservoir site, however, Barbastelle bats recorded within the reservoir site have not been recorded in land located within the Sussex SACs 12 km impact consultation zone. Thus, there is no functional link between the reservoir site and the Sussex bat SACs. The Mens SAC is therefore scoped out and will not be considered further in this assessment.

Bridlesford Copses SAC

- 4.23 Bridlesford Copses SAC is situated approximately 24 km south west of the reservoir site, approximately 7 km of this distance comprises the open water of the Solent Estuary. This expanse of open water would present a substantial barrier to bats and therefore functional linkage between Bridlesford Copses SAC and the Reservoir site is discounted. Bridlesford Copses SAC is therefore scoped out and will not be considered further in this assessment.

Other European Sites

- 4.24 Consideration has also been given to potential for indirect impacts on highly mobile species, such as marine mammals, that can travel very long distances from the international sites designated in relation to them. Given the localised nature of the physical works on Scheme and their inland location, no potential has been identified for the Scheme to affect functional land for distant European Sites, so no sites beyond this scoped in will be considered further in this assessment.

Identification of potential effect pathways in the absence of mitigation

- 4.25 The proposed reservoir construction work is taking place 3.85 km upstream of the Chichester and Langstone Harbour SPA and Ramsar Site and the Solent Maritime SAC. The associated pipeline to the pumping station at Havant and Bedhampton springs is located 1 km upstream of the European Sites. There are direct hydrological links between the proposed Scheme and the European Sites.
- 4.26 The following potential impacts have been identified as potentially relevant to the proposed works and show whether they would have an impact during either the construction or the operational phase, or both:

Construction phase

- Potential effects on qualifying features of the of the Chichester and Langstone Harbours SPA and Ramsar site, Solent and Dorset Coast Marine SPA and Solent Maritime SAC, during construction may result from:

³³ Portsmouth Water (November 2019). Havant Thicket Winter Storage Reservoir Site Alternatives Assessments. Agilia Transformations Ltd (11/04/2019).

- Water quality degradation through mobilisation of sediment, via hydrological connectivity (the Hermitage Stream);
- Water quality degradation through mobilisation of pollution via hydrological connectivity (the Hermitage Stream);
- Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs;
- Alteration in salinity levels from fresh water entering the Langstone Harbour via the Hermitage Stream;
- Noise and vibration;
- Air quality.
- The Reservoir site is outside of the 12 km impact zone of the Singleton and Cocking Tunnels SAC and Ebernoe SAC. One of four radio tacked Bechstein's from a colony located using the reservoir site was recorded in 2018 travelling between the reservoir site and a Bechstein's bat maternity roost in Southleigh Forest, that may be itself functionally linked to the Singleton and Cocking Tunnels SAC and Ebernoe SAC. Potential effects on qualifying features 'Bechstein's bat', of the Singleton and Cocking Tunnels SAC and the Ebernoe Common SAC during operation may result from:
 - Loss of Bechstein's bat non-maternity roost sites within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC and roost in Ebernoe Common SAC.
- The reservoir site is outside of the 12 km impact zone of Singleton and Cocking Tunnels SAC and Ebernoe SAC and provides foraging habitat for Bechstein's bat colony using a maternity roost located within Southleigh Forest, that may be itself functionally linked to the Singleton and Cocking Tunnels SAC and Ebernoe SAC. The Singleton and Cocking Tunnels (S&CT) SAC is a hibernation site; thus, it is not considered that there are any potential effects on qualifying Bechstein's bat of this European Site from loss of foraging habitat with the reservoir site. Potential effects on qualifying features 'Bechstein's bat', of the of the Ebernoe SAC during construction may result from:
 - Loss of Bechstein's bat foraging habitat within the Reservoir site and potential effects on the favourable conservation status of Bechstein's bat that forage in Ebernoe Common SAC.

Operational phase

- Potential effects on qualifying features of the Chichester and Langstone Harbour SPA and Ramsar Site, Solent and Dorset Coast Marine SPA and Solent Maritime SAC, during operation may result from:
 - Water quality degradation through mobilisation of sediment, via hydrological connectivity (the Hermitage Stream);
 - Water quality degradation through mobilisation of nitrates via hydrological connectivity (the Hermitage Stream);
 - Water quality degradation through mobilisation of phosphorus via hydrological connectivity (the Hermitage Stream);

- Inputs of phosphorus and trophic state through the creation of a wetland, via hydrological connectivity (the Hermitage Stream);
- Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs;
- The impact of increased flow to the Langstone Harbour via Hermitage Stream, which might occur during the emergency draw-down of the reservoir, (should this ever be required);
- Alteration in salinity levels from fresh water entering the Langstone Harbour via the Hermitage Stream;
- Noise and vibration;
- Air quality.

5 Baseline information

European Sites

- 5.1 The following European Sites have been scoped in:
- Chichester and Langstone Harbours SPA / Solent and Dorset Coast Marine SPA due to hydrological links (south flowing drains, Upper Lake, Hermitage Stream) between the Scheme and Langstone Harbour to the south.
 - Chichester and Langstone Harbours Ramsar Site due to hydrological links (south flowing drains, Upper Lake, Hermitage Stream) between the Scheme and Langstone Harbour to the south.
 - The Solent Maritime SAC due to hydrological links (south flowing drains, Upper Lake, Hermitage Stream) between the Scheme and Langstone Harbour to the south.
 - The Singleton and Cocking SAC and Ebernoe Common SAC, due to a possible functional link for qualifying Bechstein's bat species of the Sussex bat SACS between the Havant Thicket Reservoir Site, Southleigh Forest and the Sussex bat SACs.
- 5.2 The maps located in Appendix B.1 Hydrologically Connected Statutory Designated Sites B.2 Functionally Connected Statutory Designated Sites, B.2 show the approximate relative position of the Scheme and European Sites.

Bat survey results for Havant Thicket Reservoir Scheme

- 5.3 Portsmouth Water produced a technical note in December (2019) 'Assessment of Bechstein's bat population size, worst case scenario and time spent foraging on the Havant Thicket reservoir site' in response to questions raised by Natural England at a Discretionary Advice Service (DAS) meeting held in July 2019. The technical note summarised and concluded bat survey work undertaken between 2008 – 2018 and assessed the Bechstein's bat population associated with the Scheme.
- 5.4 In order to make a 'worst case scenario' assessment of the potential impacts of the proposals on the Bechstein's bat population local to the Scheme, Natural England requested that each maternity group recorded during the surveys is assessed as being a separate colony. The technical note concluded that there are potentially four Bechstein's bat colonies in areas local to the Havant Thicket reservoir site and of the four potential colonies identified, only bats from one of these colonies (colony 1) have been recorded using the Havant Thicket reservoir site.
- 5.5 A combination of the 2008, 2009 and 2018 survey work concluded that bats roosting in the Colony 1 area exploit a large area that extends from Havant Thicket in the north to the western extreme of Southleigh Forest, including Barton's Copse and Staunton Country Park³⁴. One of four radio tagged Bechstein's from Colony 1, (a nulliparous female) was recorded in the 2018 surveys travelling between the reservoir site and a Bechstein's bat maternity roost containing 58 individuals located in Southleigh Forest. Surveys have indicated that a maternity roost was present in 2008 within Staunton Country Park (SCP), located immediately south of the reservoir site. No evidence of this maternity roost or any other maternity roost in SCP was recorded in surveys undertaken post 2008.
- 5.6 It is concluded that the reservoir site, located 1.7 km north of Southleigh Forest is foraging land for a maternity roost in Southleigh Forest that may be itself functionally linked to the Singleton and Cocking Tunnels SAC and Ebernoe Common SAC.
- 5.7 The Singleton and Cocking Tunnels SAC is the nearest of the three Sussex bat SACs to the reservoir site, located approximately 15 km east of the Site, and is a hibernation

³⁴Portsmouth Water. December (2019). Assessment of Bechstein's Bat population size, worst case scenario and time spent foraging on the Havant thicket reservoir site.

roost for Bechstein's bat. In the absence of further survey work it is unknown whether Bechstein's bats using the reservoir site and Southleigh Forest hibernate in the Singleton and Cocking Tunnels. No further survey work is planned to conclude this and based on the favourable conservation status of Bechstein's bat in the Sussex Bat SACs associated with the HTR Scheme, it is concluded that this survey work is not required or necessary for any part of the planning submission.

- 5.8 The Scheme will result in loss of woodland on the reservoir site, but no further woodland, foraging commuting habitat or roost sites will be lost based on current design. The pipeline runs directly south towards the coast from reservoir site and does not have the potential to affect commuting and foraging pathways between roost sites located in Southleigh Forest and Singleton and Cocking Tunnels SAC and Ebernoe SAC.

Wintering bird surveys within the Chichester and Langstone SPA between 2005 - 2008

- 5.9 In the winter of 2007 – 2008, ECOSA carried out wintering bird surveys within the Chichester and Langstone Harbours SPA (ECOSA harbour study 2012) to inform a study that investigated whether there is a relationship between bird numbers and flow rates within freshwater creeks entering the SPA. The study particularly focused on whether any future reduction in flow rates to Langstone Harbour due to winter abstraction from the Havant and Bedhampton Springs would impact upon bird populations.
- 5.10 The surveys consisted of counting birds in two distinct zones, creek and mudflat, to assess the following:
- the numbers and species of birds using selected freshwater creeks within the SPA;
 - investigate bird activity both within and adjacent to the creeks; and
 - investigate the relationship, if any, between flow rates and bird numbers and activity within the creeks.
- 5.11 The study concluded (ECOSA 2012):
- although birds were observed utilising freshwater flows in the harbour creeks for such activities as bathing and drinking, there does not appear to be any strong positive correlation between freshwater flows and bird numbers;
 - the water required to fill the Havant Thicket Winter Storage Reservoir will be taken from the Bedhampton springs discharge in the winter, when volumes of freshwater from the springs and in the Hermitage Stream are typically higher. The EA has confirmed that a variation to the abstraction licence will be required to include for the purpose of filling the reservoir and potentially to state the quantities permitted for that purpose. However, there will be no increased abstraction volume, as the reservoir can be filled within the current Environment Agency abstraction licence conditions. The minimum residual channel flows stipulated in the licence conditions will be maintained. Therefore, the proposal to construct and operate the new reservoir using excess yield from the Havant and Bedhampton Springs is not expected to have any adverse impact on qualifying bird species using the Langstone and Chichester Harbour SPA.
- 5.12 The ECOSA harbour study also referenced previous surveys undertaken in the winter of 2005/06 and 2006/07 by Entec UK Limited³⁵ which completed a study of 25 creeks to examine the relationship between wintering birds and freshwater input from creeks. There results of this study concluded (Entec 2007):
- *'Although birds were observed utilising freshwater flows, for activities such as bathing and drinking, there does not appear to be any positive correlations between freshwater flows and bird numbers and activity. Mudflat areas with no discernible*

³⁵ Entec UK Ltd (2006). Langstone and Chichester Harbour SPA wintering bird survey. Entec UK Ltd, Bristol; And, Entec (July 2007). Wintering Bird Surveys 2005/06 and 2006/07 Langstone and Chichester Harbour.

freshwater flow across them had similar numbers of birds to mudflats in close proximity to freshwater flows.

- The creek where the Hermitage Stream and Brockhampton Stream flow into Langstone Harbour, does have a consistently higher flow than any of the other creeks. This is because the creek has two headwaters (the Hermitage Stream and another tributary) that come together behind the seawall to form a single creek (inputting to the SPA). This creek is also dredged to allow access at high tide by boats (involved with sand and gravel processing). These high flows and the dredged nature of the channel are actually likely to make the creek less attractive to birds than other freshwater inputs to the Chichester and Langstone Harbours SPA³⁶.

5.13 In respect of the Scheme, the results of the above studies suggest that as long as there is a freshwater flow maintained from the Hermitage Stream to the harbour channel, qualifying bird species of the SPA will use it for drinking and bathing. A lower volume of flow in the Hermitage Stream channel would not affect the quality of the habitat for these uses for qualifying species. The flow monitoring protocol (refer to the EA licence in Appendix A.3 EA Abstraction Licence), already agreed between Portsmouth Water and the Environment Agency for the existing abstraction licence will ensure that freshwater flow is always maintained into the harbour.

Bird survey results for the Havant Thicket Reservoir

5.14 ECOSA completed wintering bird surveys in 2005/06, 2007/08 and 2017/18³⁶. On the final survey carried out on 12th March 2018 of the 2017/18 wintering bird surveys³⁸ black-headed gull and four Mediterranean gull were recorded roosting on the reservoir site. These individuals are likely to have originated from coastal areas to the south of the site, including Chichester and Langstone Harbour SPA / Ramsar site. Both species were also regularly recorded flying over the reservoir site, particularly during the spring and autumn.

5.15 Apart from black-headed gull and Mediterranean gull the only species recorded during the 2017/18 surveys, which is a qualifying species of the Chichester and Langstone Harbour SPA / Ramsar sites are teal and lapwing. Both species were recorded infrequently and in relatively low numbers.

5.16 Brent goose were not recorded at the site during wintering bird surveys undertaken in 2005/06, 2008/09 or 2017/18.

5.17 No other qualifying wintering or passage species of the Chichester and Langstone Harbours SPA / Ramsar Site³⁷ have been recorded within the reservoir site in either the desk study data, or 2005/06, 2007/08 or 2017/18 wintering bird surveys. The reservoir site is considered to be largely unsuitable since it lacks the short nutrient rich swards, (such as playing fields), often favoured by waders and wildfowl species (Brent geese in particular), when recorded away from coastal sites.

5.18 It is concluded that based on the irregular usage and low recorded numbers of teal and lapwing within the reservoir site, qualifying species of the Chichester and Langstone Harbour SPA / Ramsar Site are not reliant on the Reservoir site as land outside of the European Sites. Thus, there is no functional link to the Chichester and Langstone Harbour SPA / Ramsar Site and potential adverse effects on the integrity of these European Sites are unlikely.

5.19 The reservoir will create suitable habitat for a range of waterbirds both during winter, passage and breeding, many of which are part of the SPA and Ramsar site citation (e.g. Mediterranean gull, black-headed gull, redshank, little egret etc.). Therefore, the development of the reservoir has the potential to support the qualifying species of Chichester and Langstone Harbours SPA and Ramsar site³⁸.

³⁶Appendix A9.9 Bird Survey Report in ES Volume 4.

³⁷ bar-tailed godwit, little egret, black-tailed Godwit, dark-bellied Brent goose, dunlin grey plover, redshank and ringed plover

³⁸ECOSA (2019). Appendix A9.9 bird survey report.

- 5.20 It is possible that birds displaced from Chichester and Langstone Harbour SPA following disturbance will utilise the reservoir, providing a potential benefit to the European Site.

Salinity

- 5.21 The Langstone harbour is shallow with high tides twice-daily. These high tides reach the point of the Havant & Bedhampton Springs Site, where freshwater from the springs overflow into the Hermitage Stream.
- 5.22 The following habitats that are qualifying features of the Solent Maritime SAC: *Spartina* swards, Atlantic salt meadows, inundated sandbanks, mudflats, coastal lagoons; and, qualifying features of the Chichester and Langstone Harbour Ramsar Site; intertidal saltmarsh and mudflats are present in these European Sites, due to the saline influence of tides. These habitats are not reliant on freshwater discharge that enter the harbour via the Hermitage Stream.
- 5.23 The EA abstraction licence (located in Appendix A.3 EA Abstraction Licence) requires Portsmouth Water to maintain a flow (Minimum residual flows (MRF) in the streams that are hydrologically linked to the Scheme, thus the flow of water from the Hermitage Stream into Langstone harbour will be maintained. The licence puts in place monitoring requirements to ensure these flows are maintained.
- 5.24 There will be no significant change in fresh water flows to the Hermitage Stream that could influence change in salinity levels due to the restrictions imposed by the abstraction licence and the fact that the tides are constant and are not affected by the Scheme.

Water quality in the Hermitage Stream

- 5.25 A water quality study undertaken by Atkins in February 2020³⁹ and updated in July 2020⁴⁰ compared the predicted water quality for key parameters downstream of the proposed Havant Thicket Reservoir in the Riders Lane Stream, immediately below the confluence with the existing measured quality in the Riders Lane Stream and Hermitage Stream. Changes further downstream would be expected to be less because dilution of the reservoir water increases as other inputs of water occur to the stream. The study concluded the following downstream water impacts⁴¹:
- In general, the development of the reservoir will improve water quality downstream because the quality of the Havant and Bedhampton Spring water is better than the existing water quality in the Hermitage Stream.
 - The water from the Bedhampton springs is generally of very good quality and the majority of water stored in the reservoir will be derived from the spring source. The large body of water (approx. 8,700MI) will provide a buffering effect, helping to smooth out peaks for example in iron, manganese and magnesium, which currently arise from the three small streams. Water discharged from the reservoir into the Riders Lane Stream will therefore be of a more consistent quality.
 - Parameters associated with anions and hardness would increase downstream of the reservoir as a result of greater hardness concentrations within the spring water, compared to stream flow concentrations but these changes diminish downstream and would only be small in the Hermitage Stream. An increase in calcium concentrations downstream could have a positive benefit in relation to biodiversity.

³⁹ Atkins. February (2020). Havant Thicket Winter Storage Reservoir, Early Start Studies. Water Quality Study – Water Quality Modelling Report, Portsmouth Water. 5165942/DG/61/1024

⁴⁰ Atkins. July (2020). Havant Thicket Winter Storage Reservoir, Early Start Studies – Water Quality Study – Water Quality Modelling Report, Portsmouth Water, Rev 6.0 (14/07/2020). Doc ref: 5165942/DG/61/1024

⁴¹ The Atkins water quality modelling work has been peer reviewed by the Environment Agency national specialist and found to be a sound basis for assessing the impact on water quality.

- Downstream nitrate concentrations within the streams would increase, reflecting the greater concentrations of nitrate in the Bedhampton and Havant Springs compared to the surface waters but again these changes would diminish downstream and only be small in the Hermitage Stream.
- Some nitrate is lost in the reservoir after spring water has been transferred as a result of natural denitrification processes and transfer to supply. Consequently, the nitrogen loads to Langstone Harbour are predicted to decline on average by 6.7% as a result of construction of the new reservoir which will help protect the condition of the SAC, SPA and Ramsar site. This decline varies substantially from year to year depending on how much water is pumped to the reservoir (during and after drought periods the reduction in nitrate to the harbour could be as much as 40%).
- Phosphorus concentrations downstream of the reservoir would be reduced after the reservoir is built, due to low phosphorous concentrations within the reservoir compared to the existing stream flows.
- Ammonium, suspended solids and most metal concentrations will also be reduced in the Riders Lane Stream.
- Biological Oxygen Demand (BOD) should be reduced downstream once the reservoir is in place due to the greater opportunity for oxidation of organic matter whilst water is stored in the reservoir.
- None of the above changes are of concern with regards to water quality in the rivers and Water Framework Directive (WFD) classification.
- Changes in temperature downstream of the reservoir were also assessed; this indicates that the mixing of the compensation water with the Riders Lane stream is extremely unlikely to result in a change of temperature immediately below the confluence of the streams greater than 3° C; the WFD threshold. Changes further downstream will be less because of increased dilution.
- The output of the mass balance calculations is that water quality downstream of the reservoir will improve. Consequently, there is no risk of a deterioration in WFD Status. The only chemicals that show a substantive increase in concentrations are calcium, nitrate, nitrite, alkalinity, electrical conductivity and total dissolved solids. None of these determinands affect WFD classification or are specific pollutants or priority hazardous substance so have no implications for WFD status.

Nitrates

- 5.26 Surplus Havant & Bedhampton Spring water which currently overflows into Langstone Harbour will be pumped up the reservoir pipeline to initially fill and then top up the reservoir. The existing spring water is relatively high in nitrates (average 33.3mg/l) when compared to the concentration typically around 1 mg/l measured in the streams⁴².
- 5.27 The analysis undertaken as part of a water quality study (Atkins 2020⁴¹), shows that nitrate inputs to the harbour would decline as a result of nitrogen being lost in the new reservoir because of natural denitrification processes and transfer of reservoir water to supply for drinking water. Construction of the Havant Thicket Reservoir will therefore reduce nitrate loading to the Solent Maritime SAC and Chichester and Langstone Harbour SPA / Ramsar Site. Consequently, the nitrogen loads to the harbour are predicted to decline on average by 6.7% as a result of construction of the new reservoir, which will help protect the integrity of the European Sites. This decline varies substantially from year to year depending on how much water is pumped to the reservoir (during and after drought periods the reduction in nitrate to the harbour could be as much as 40%)⁴⁴.
- 5.28 Due to the discharge of compensation flow, nitrate concentrations within the streams would increase, reflecting the greater concentrations of nitrate in the Bedhampton and

⁴² Atkins. February (2020). Havant Thicket Winter Reservoir Storage, Early Start Studies. Water Quality Study – Water Quality Modelling Report, Portsmouth Water. 5165942/DG/61/1024

Havant Springs compared to the surface waters but again these changes would diminish downstream and only be small in the Hermitage Stream⁴⁴. This will have no adverse effect on the WFD classification.

- 5.29 Under normal operating conditions there will be no large releases from the reservoir to the stream in the warmer summer months. The only releases to the stream will be whatever compensation flow is agreed with the Environment Agency in association with the Impoundment Licence conditions. In the summer months this will be very low or zero.
- 5.30 In relation to the requirements of the Habitats and Birds Directives, the impact of the reservoir is positive; reducing nitrogen inputs which should help protect the sites and improve their condition.

The proposed wetland (part of the reservoir site), predicted bird numbers and phosphorus concentrations

- 5.31 Input of phosphorus from wildfowl is a recognised cause of eutrophication of lakes and reservoirs. In general, wildfowl populations that feed on lakes are a limited source of nutrients as a whole because much of their food and associated phosphorus comes from the lake. There are circumstances in which inputs of phosphorus from wildfowl become significant. This is the case where birds feed elsewhere and transfer the phosphorus from other locations to the lake. This occurs when birds roost beside lakes; for example, gull roosts typically on islands⁴³.
- 5.32 The risk of significant inputs of nutrient from wildfowl cannot be discounted based on the location of the proposed reservoir in relation to the sea (and, therefore, populations of gulls), the proposed development of a wetland at the reservoir site to create habitat for wildfowl and the existence of urban feeding areas for gulls⁴⁴.
- 5.33 The Atkins water quality study (2020) includes modelling for predicted bird numbers at the reservoir site. The numbers were distributed through the year based on a typical monthly distribution. Using these estimated monthly numbers, nutrient inputs to the reservoir from birds predicted to use the wetland were estimated based on export rates for the bird species taken from scientific literature. In addition, the following scenarios were considered in the sensitivity testing:
- A gull roost of 10,000 black headed gulls (November to February); and,
 - A winter starling roost of 10,000 birds (December and January).
- 5.34 Summaries of the contribution of types of bird and individual species to estimated phosphorus loading were made. Inputs were estimated to be dominated by cormorants, grebes, and gulls, followed by ducks and geese. Key species contributing to nutrient inputs were predicted to be cormorants and black headed gulls⁴⁴.
- 5.35 The modelled impact of a 10,000-population winter starling roost in the wetland beside the reservoir on total phosphorus concentrations concluded that the change in total phosphorus concentration is small, in relation to the uncertainty associated with the settling rate. A starling roost of this size would, therefore, represent only a small risk to water quality⁴⁵.
- 5.36 The modelled impact of a 10,000-population winter black headed gull roost in the reservoir on total phosphorus concentrations, concluded the change in total phosphorus concentration is substantial indicating that a large roost of gulls would be a significant risk to water quality, shifting the reservoir toward mesotrophic conditions⁴⁶.

⁴³Atkins. February (2020). Havant Thicket Winter Reservoir Storage, Early Start Studies. Water Quality Study – Water Quality Modelling Report, Portsmouth Water. 5165942/DG/61/1024 – section 2.3.2

⁴⁴Atkins. February (2020). Havant Thicket Winter Reservoir Storage, Early Start Studies. Water Quality Study – Water Quality Modelling Report, Portsmouth Water. 5165942/DG/61/1024 – section 3.5.1.2

⁴⁵Atkins. February (2020). Havant Thicket Winter Reservoir Storage, Early Start Studies. Water Quality Study – Water Quality Modelling Report, Portsmouth Water. 5165942/DG/61/1024 – section 3.2.

⁴⁶Atkins. February (2020). Havant Thicket Winter Reservoir Storage, Early Start Studies. Water Quality Study – Water Quality Modelling Report, Portsmouth Water. 5165942/DG/61/1024 – section 3.2.

- 5.37 To minimise this potential phosphorus increase, Portsmouth Water have proposed that the wetland design includes an area to the north-west of the proposed reservoir, where birds are likely to mainly congregate, will be separated from the main reservoir when summer water levels are low by a retaining structure.
- 5.38 Phosphorus will still accumulate in this wetland area along with elevated algal populations and be subject to later release into the reservoir. This occurrence is most likely in the winter when water levels are high, this phosphorus will be retained in the reservoir until the spring, unless there is a high degree of flushing during this period which is not planned. Another possibility is that summer storms might flush out the water in the wetland area, along with large populations of algae into the main reservoir, which could fuel increases in algae.
- 5.39 This flushing of phosphorus from the wetland into the reservoir has the potential to increase the trophic state of the reservoir, however this risk is predicted to be low to moderate. There is also potential for phosphorus exchange between water and sediment that could be influenced by thermal stratification. Under some circumstances, accumulation of phosphorus in the sediment and its subsequent release can increase the trophic state of a lake or reservoir. Thermal stratification can play an important role in influencing phosphorus exchange, particularly in deeper lakes where a stable thermocline develops, and oxygen concentrations decline on the hypolimnion. In shallow lakes other processes tend to be more important. Previous water quality analysis has indicated that the likelihood of stratification in Havant Thicket Reservoir is considered low (RM Walls, 2011⁴⁷).
- 5.40 Installation of a mixing system such as compressed air would reduce the risk of transient stratification in the proposed reservoir. The engineering of alternative draw-off points (depth and location) would allow use of the water with the best quality if this is heterogeneous within the reservoir. It is unlikely however that different positioning of draw-off points can fully mitigate the risks associated with stratification. The preventative measure of reservoir mixing is considered to be best practice⁴⁸.
- 5.41 The risk of thermal stratification within the reservoir would be reduced by the adoption of multiple draw off points (three levels) incorporated within the outline design and provision for aeration plant has been provided within the Control House.
- 5.42 Even in the event of phosphorus flushing into the reservoir from the wetland, it is predicted that nitrogen fixation rarely amounts to a significant input even if blue green algae are abundant. The study concludes that the predicted phosphorus concentration downstream of the reservoir would be reduced after the reservoir is built, due to low phosphorous concentrations within the reservoir compared to the existing stream flows.

Solent Waders and Brent Goose Strategy

- 5.43 The Solent coastline forming part of the Chichester and Langstone Harbour SPA and Ramsar Site provides an internationally important wintering area for Brent geese⁴⁹. The Solent Waders and Brent Goose Strategy (SWBGS) aims to protect the network of non-designated terrestrial wader and Brent goose sites that support the SPA⁵⁰. These sites frequently used by SPA species (including qualifying features and assemblage species), support the functionality and integrity of the European Sites for these features and contribute to the achievement of the SPAs' conservation objectives⁵¹. The sites have been classified according to a metric scoring system⁵². Two Brent geese sites that

⁴⁷ R.M.Walls. (2011). Havant Thicket Winter Storage Reservoir: Assessment of the Impact on Water Quality of the Proposed Reservoir

⁴⁸ Atkins. February (2020). Havant Thicket Winter Reservoir Storage, Early Start Studies. Water Quality Study – Water Quality Modelling Report, Portsmouth Water. 5165942/DG/61/1024 – section 2.3.4.

⁴⁹ <https://solentwbgs.files.wordpress.com/2017/02/solent-waders-and-brent-goose-strategy.pdf>

⁵⁰ Havant Borough Council Local Plan 2036 - Policy E17 Solent Wader and Brent Goose Feeding and Roosting Sites

⁵¹ <https://solentwbgs.files.wordpress.com/2019/05/swbgs-2019-interim-report-year-two-dw.pdf>

⁵² Refer to Section 7 and Appendix 1 of the following 2018 interim report:

<https://solentwbgs.files.wordpress.com/2018/11/swbgs-mitigation-guidance-oct-2018.pdf>. The classifications are: Core Areas Primary Support Areas, Secondary Support Areas, Low Use areas and Candidate Sites.

support the SPA are located within 300 m⁵³ of the Bedhampton and Havant Springs pumping site that is located at the southern end of the pipeline corridor:

- Secondary support area Site - H05A, located approximately 200 m west of the pipeline site, Easting 470013 / Northing 106059, Area: 9.62 ha. A site that scores 1-2 (GB Importance, SPA Importance and SPA Assemblage see Appendix 1 for details⁵⁴), and/or have max counts of 100 plus birds for any species; and,
- Low use Site – H11, located approximately 380 m east of the pipeline site, Easting 471187 Northing 106233, Area: 5.59 ha. A site that has records of birds but in low numbers (score 0)⁵⁵.

- 5.44 The Bedhampton and Havant Springs pipeline Site is surrounded by housing, commercial development and subjected to a significant amount of traffic noise from arterial roads and rail lines:
- Portsmouth direct rail line located immediately north of the pipeline site;
 - The A3 motorway is located approximately 700 m west of the pipeline site;
 - The A27, a major road across the south of England connecting to the M27 motorway above Portsmouth and terminating at Eastbourne on the south East coast is located approximately 250 m south of the Site.
- 5.45 The baseline noise levels are considered to be significantly high from the features described above. Potential noise at the pumping Site during construction would be generated by the following works:
- works to improve existing pumps to pump spring water up to the reservoir site;
 - connect a new pipeline to the Site including a pipe jacked section below the railway line.
- 5.46 The operational equipment of the pumping station is located underground and housed in buildings and is not considered to increase noise levels from baseline noise. There will be no change in operational noise levels and Brent geese will not be affected during operation.
- 5.47 The suggested threshold from the TIDE waterboard disturbance mitigation toolkit⁵⁶ at which Brent geese seem to be negatively affected at a minimum approach distance of 100 m is 110-115 dB at source. This increases to 120-125 dB at source a distance of 300 m. It is considered that the noise generated by the proposed construction works (discussed above), would be under the suggested threshold thresholds at which Brent geese seem to be negatively affected and would not be greater than noise generated from the surrounding area features.
- 5.48 The assessment of construction activity proposed for the construction of the pipeline⁵⁷, concluded that the highest noise level of construction activity at a distance of 10 m from the source will be 87dB. It is therefore concluded that proposed noise generated from construction activity even at 10 m from the source (southern extent of pipeline at Bedhampton and Havant Springs site), is far below the threshold of 110-115 dB at source that would disturb Brent geese at a distance of 100 m from the source. The Brent geese strategy sites H05A and H11 are located in excess of 100 m from the pipeline corridor and it is concluded that a construction activity would not disturb Brent geese occupying these sites.

⁵³ Refer to footnote '10' for search area justification.

⁵⁴ Refer to Section 7 and Appendix 1 of the following 2018 interim report:

<https://solentwbgs.files.wordpress.com/2018/11/swbgs-mitigation-guidance-oct-2018.pdf>

⁵⁵ Refer to Section 7 and Appendix 1 of the following 2018 interim report:

<https://solentwbgs.files.wordpress.com/2018/11/swbgs-mitigation-guidance-oct-2018.pdf>

⁵⁶ https://www.tide-toolbox.eu/tidetools/waterbird_disturbance_mitigation_toolkit/

"Importantly, this tool is not designed to replace traditional methods of environmental assessment and monitoring, but to provide an initial high-level guidance in the identification of possible construction; waterfowl disturbance issues and assist in the development of appropriate mitigation methods where practicable"

⁵⁷ Atkins (2020). Havant Thicket Reservoir. Environmental Statement. Appendix A12 Noise and Vibration. HTR-ATK-ZZ-ZZ-RP-Z-0137.

Site access and traffic; air quality

- 5.49 The air quality study area for assessing the potential effects of construction dust during the construction phase is defined as the area within 350 m of the Scheme boundary, as set out in the IAQM Dust Guidance⁵⁸ and discussed in Chapter 7 Air Quality in ES Volume 2⁵⁸. There are no statutory designated European sites included in this assessment that are located within the air quality study area of 350 m from the Scheme boundary.
- 5.50 The air quality study concluded that at two of the Sites of Importance for Nature Conservation (SINCs) located within 350 m of Scheme and within close proximity to the A3(M) (approx. 25m and 31 m respectively from the A3(M)), Nitrogen Oxide (NOx) concentrations are above 30 ug/m³ (the critical level). The change in NOx concentrations with the inclusion of construction traffic at the construction stage of the Scheme is considered to be small, at 0.1 ug/m³ increase and the increase / effect is temporary.
- 5.51 At both of the SINC sites, the changes in N dep rates as a percentage of the critical load (assumed to be 10 kgN/ha/yr for woodland) is 0.1%. As this is under 1% it is not likely to be significant.
- 5.52 Based on the nitrogen deposition rate results for SINCs within 350 m of the Scheme, it is considered that the effect would be the same or less at any other site along the A3(M) and immediately south of the A3(M) where European Sites Solent Maritime SAC and the Chichester and Langstone Harbour Ramsar Site are located. It is also considered that the NOx threshold for intertidal habitats (APIS, 2020)⁵⁹ within these European sites are higher⁶⁰ than the woodland thresholds used for the assessment.
- 5.53 As there is no requirement for an air quality assessment of operational phase traffic, only the construction phase traffic has been assessed⁶⁵. Thus, it is assumed that operational phase traffic would not exceed construction phase critical loads, discussed above.

Identification of positive impacts as a result of the proposed scheme

- 5.54 The Scheme supports reduced abstraction from a European Site that includes chalk streams as a qualifying feature (River Itchen SAC). The reduced abstraction is a significant contribution to these chalk streams achieving favourable conservation status⁶¹.
- 5.55 Nitrate inputs to Langstone Harbour would decline as a result of nitrogen being lost in the new reservoir because of natural denitrification processes and transfer of reservoir water to supply for drinking water. Construction of Havant Thicket reservoir will therefore reduce nitrate loading to the Solent Maritime SAC, Chichester and Langstone Harbour SPA and Ramsar Site.
- 5.56 The output of the mass balance calculations within the water quality strategy undertaken by Atkins (2020)⁶² concludes that water quality downstream of the reservoir will improve. Consequently, there is no risk of a deterioration in Water Framework Directive Status.
- 5.57 There is potential for fresh water screened within the construction area to be released downstream during periods when ephemeral watercourses within the reservoir site would normally be dry. This is concluded to be a positive action that would increase fresh water flow into Langstone Harbour in months when water flows are reduced due to climate conditions.
- 5.58 A retained wetland area with variable water depths will be created on the northern edge of the reservoir site and will include a number of islands and wetland areas which will be

⁵⁸ Atkins (2020). Environmental Statement, Chapter 7 Air Quality in ES Volume 2. Doc No: HTR-ATK-ZZ-ZZ-RP-Z-0107

⁵⁹ <http://www.apis.ac.uk/search-pollutant-impacts>

⁶⁰ Intertidal habitats have a greater tolerance to Nox than woodland habitat

⁶¹ River Itchen Conservation objectives: <http://publications.naturalengland.org.uk/publication/5130124110331904>

⁶² Atkins. February (2020). Havant Thicket Winter Reservoir Storage, Early Start Studies. Water Quality Study – Water Quality Modelling Report, Portsmouth Water. 5165942/DG/61/1024 – section 2.3.4.

suitable for breeding lapwing and a variety of wetland species. The reservoir, especially the northern retained wetland, will provide excellent habitat for waterfowl and gulls⁶³.

- 5.59 There is potential to encourage a number of species of conservation concern to breed and winter at the site. Experience from other wetland projects, such as Blashford Lakes has shown that the benefits to wetland species as a result of the reservoir could be significant. In the long-term it is possible that the new Havant Thicket reservoir will become important for wintering, passage and breeding birds, potentially including birds displaced from Langstone and Chichester Harbours SPA, for example following disturbance or high tide events.

⁶³ECOSA (2019) Appendix A9.9 in ES Volume 4.

6 Stage 1 - Screening assessment of likely significant effects – alone

6.1 The following assessments of likely significant effects are based on the conservation objectives of the International Site. The assessment determines whether the proposed works will lead to likely significant effects on the International sites, alone.

Table 6-1 - Chichester and Langstone Harbours SPA and Solent Dorset Coast Marine SPA

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
Breeding birds: - Sandwich tern; - Common tern; and, - Little tern Wintering Birds: - Dark-bellied Brent goose; - Common shelduck; - Eurasian wigeon; - Eurasian teal; - Northern pintail; - Northern shoveler - Red-breasted merganser; - Ringed plover; - Grey plover; - Dunlin; - Sanderling; - Bar-tailed godwit; - Eurasian curlew; - Common redshank; and, - Ruddy turnstone Supplementary advice for overwintering bird species for which WeBS alerts have been given⁶⁴: shelduck, Shoveler, Teal, Red-breasted merganser, grey plover, ringed plover, Curlew, Bar-tailed godwit, Sanderling, Dunlin:	- Ensure that the integrity of the site - The extent and distribution of the habitats of qualifying species; - The structure and function of the habitats of qualifying species; - The supporting processes on which the habitats of qualifying species rely; - The populations of qualifying species; breeding and wintering - The distribution of qualifying species within the site.	Construction	Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs.	The outflows of the springs into Hermitage Stream will retain a Minimum Residual Flow (MRF) under abstraction licensing agreements. The monitoring protocol to ensure the MRF is maintained is already agreed with the EA and in place. Thus, there will be no change to flows into Hermitage Stream in accordance with the abstraction licence. Water entering the reservoir site via three tributaries immediately north will be piped across the construction area into Riders Stream immediately south of the construction area to maintain existing flows into the Hermitage Stream and Langstone Harbour. There are several fresh water channels entering the Langstone Harbour for breeding birds to drink and bathe. SPA qualifying features breeding and over wintering are not reliant on the Hermitage Stream fresh water flow regimes. There is potential for fresh water screened within the construction area to be released downstream during periods when ephemeral watercourses within the site would normally be dry. This is concluded to be a positive action that would create increase of fresh water into Langstone harbour in months when water flows are reduced due to climate conditions.	No
		Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	Ground water that collects in excavations on site will be stored in borrow pits. Sediments will need to be removed from this water before it is discharged downstream. Although the distance involved is significant (3.85 km) there is a potential likely significant effect on the SPA, as a result of potential water quality degradation events during construction. Therefore, the requirement for Stage 2 Appropriate Assessment statement to inform an appropriate assessment has been triggered by this potential impact. Therefore, likely significant effects cannot be ruled out and this effect pathway has been considered at Stage 2 Appropriate Assessment.	Yes
		Construction	Water quality degradation through pollution, via hydrological connectivity	Ground water that collects in excavations on site will be stored in borrow pits. Pollution entering the site through surface water and pollution potentially generated from site construction machinery and disturbance to existing soils will need to be removed from this water before it is discharged downstream. There is a potential likely significant effect on the SPA, as a result of potential water quality degradation events during construction. Therefore, the requirement for Stage 2 Appropriate Assessment statement to inform and appropriate assessment has been triggered by this potential impact.	Yes

⁶⁴ https://app.bto.org/webs-reporting/?tab=alerts&dm_i=IG4,6KRPf,39H0XM,Q5QA9,1

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
				Therefore, likely significant effects cannot be ruled out and this effect pathway has been considered at Stage 2 Appropriate Assessment.	
	- The extent and distribution of the habitats of qualifying species; - The structure and function of the habitats of qualifying species; - The supporting processes on which the habitats of qualifying species rely; - The populations of qualifying species; breeding and wintering	Construction	Noise and vibration	The Scheme will not directly affect the SPA and is located approximately 1 km north at the nearest location (Havant and Bedhampton Springs), where pipeline construction will take place. Qualifying bird species do not utilise the reservoir site, Pumping Site or land within 400 m of the pipeline route for breeding / feeding, therefore there are no functional links between the Scheme and the SPA.	No
				Two non-designated strategic feeding and roosting Brent geese sites, H05A and H11, that are used by birds from SPA are located within 300 m of the Bedhampton and Havant Springs pipeline Site. Noise and vibration from construction activity will not exceed 87dB at 10 m from the construction activity source. Brent geese are disturbed when noise is within 110-115 dB at a distance of 100 m from the source. The nearest strategic Brent geese sites H05A and H11 are located in excess of 100 m from the pipeline corridor and it is concluded that a construction activity would not disturb Brent geese or any other SPA birds, occupying these sites or effect breeding birds or over wintering within the SPA located 1 km south of the pipeline.	No
<u>Breeding birds:</u> - Sandwich tern; - Common tern; and, - Little tern <u>Wintering Birds:</u> - Dark-bellied Brent goose; - Common shelduck; - Eurasian wigeon; - Eurasian teal; - Northern pintail; - Northern shoveler - Red-breasted merganser; - Ringed plover; - Grey plover; - Dunlin; - Sanderling; - Bar-tailed godwit; - Eurasian curlew; - Common redshank; and, - Ruddy turnstone Supplementary advice for overwintering bird species for which	- Ensure that the integrity of the site - The extent and distribution of the habitats of qualifying species; - The structure and function of the habitats of qualifying species; - The supporting processes on which the habitats of qualifying species rely; - The populations of qualifying species; and - The distribution of qualifying species within the site. - Supporting habitat: water quality – contaminants. - Supporting habitat air quality: - Supporting habitat: extent and distribution of supporting habitat for the non-breeding season: - Supporting habitat: food availability. - Supporting habitat: landform: Maintain a high density of	Operation	Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs	A control house located on the southern boundary of the reservoir site will bring together raw water outlet/inlet and overflows pipes. The majority of this pipework is carried under the new reservoir embankment in a culvert. The overflow pipe passes around the toe of the dam to discharge, via a submerged discharge chamber into the existing stream. Compensation flow would be measured and reduced in energy at the outlet from a submerged discharge chamber located next to the control building and released downstream in accordance with the EA impoundment licence that mandates water flows to remain the same as current flows from Riders Stream / Hermitage Stream into Langstone Harbour (or other alternative flow arrangement agreed with the EA). Excess water from the all of the springs at the Bedhampton and Havant Pumping Station Site, which are connected to the Portsmouth Water raw water collection pipe work is captured and discharged into the Hermitage Stream via two overflows, or in to the Brockhampton Stream via a third overflow. Thus, there is always an excess of water passing in to the overflow system to maintain existing water flows.	No
		Operation	Water quality degradation through mobilisation of sediment, nutrients and pollution via hydrological connectivity	Turbidity in the Havant & Bedhampton Springs is much lower than in the existing streams which enter the reservoir site from the north. The reservoir will act as a stilling basin for sediment washed in from the upper catchment, allowing sediments to settle out and by buffering transient events. The outline reservoir design acknowledges the high suspended solid load in the feeder streams at times and has ensured the water flows through a retained wetland before entering the main water body. It is anticipated this will trap the silt. Thus, even during a summer storm event the risk of reduced water quality due to mobilisation of silt will be less⁶⁶.	No

⁶⁶ Atkins February (2020). Havant Thicket Winter Storage Reservoir Early Start Studies Water Quality Study - Water Quality Modelling Report Portsmouth Water 11 February 2020. Author PD.

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
WeBS alerts have been given ⁶⁵ : shelduck, Shoveler, Teal, Red-breasted Merganser, grey Plover, Ringed Plover, Curlew, Bar-tailed Godwit, Sanderling, Dunlin:	- channel networks within intertidal feeding areas. - Supporting habitat: water quality – Contaminants, nutrients, turbidity				
		Operation	Water quality degradation through mobilisation of nitrates, via hydrological connectivity	Construction of Havant Thicket reservoir will reduce nitrate loading to the Chichester and Langstone Harbour SPA. Consequently, the nitrogen loads to the harbour are predicted to decline on average by 6.7% as a result of construction of the new reservoir which will help protect the condition of the SAC and SPA site. This decline varies substantially from year to year depending on how much water is pumped to the reservoir (during and after drought periods the reduction in nitrate to the harbour could be as much as 40%). In relation to the requirements of the Habitats Directive (2017 as amended)⁶⁷ and Birds Directives (2009 as amended)⁶⁸, the impact of the reservoir is positive; reducing nitrogen inputs which should help protect the sites and improve their condition.	No
		Operation	Water quality degradation through mobilisation of phosphates, via hydrological connectivity	Phosphorus concentrations downstream of the reservoir would be reduced after the reservoir is built, due to low phosphorous concentrations within the reservoir compared to the existing stream flows.	No
		Operation	Inputs of phosphorus and trophic state through the creation of a wetland, via hydrological connectivity (the Hermitage Stream);	The risk of significant inputs of nutrient from wildfowl cannot be discounted due to the proximity of the proposed reservoir to the sea (and, therefore, populations of gulls) and the proposed development of a wetland at the reservoir to create habitat for wildfowl and the existence of urban feeding areas for gulls. A potential accumulation of phosphorus in the reservoir sediment and its subsequent release could increase the trophic state of the reservoir. Thermal stratification can play an important role in influencing phosphorus exchange. To minimise a potential increase in phosphorus concentration from the wetland into the reservoir the wetland design to the north-west of the proposed reservoir, where birds are likely to mainly congregate, will be separated from the main reservoir when summer water levels are low by a retaining structure. Installation of a mixing system within the control house, of compressed air will reduce the risk of transient stratification in the proposed reservoir. The engineering of alternative draw-off points (depth and location) will allow use of use of the water with the best quality if this is heterogeneous within the reservoir. It is unlikely however that different positioning of draw-off points can fully mitigate the risks associated with stratification. The preventative measure of reservoir mixing is considered to be best practice for reservoir water quality. Ortho-phosphate concentrations are predicted to change less than 1% downstream of the reservoir and no change in WFD status results. In the Riders Lane Stream the status is High (below 45µg/l – the High to Good boundary at this location) and in the Hermitage Stream at New Road the status is Moderate (below 200 µg/l – the Moderate to Poor boundary at this location). The classifications would not change as a result of outflows from the reservoir.	No

⁶⁵ https://app.bto.org/webs-reporting/?tab=alerts&dm_i=IG4,6KRPF,39H0XM,Q5QA9,1

⁶⁷ The Conservation of Habitats and Species Regulations (2017). European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

⁶⁸ The Birds Directive (2009). Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
				A 500% increase in alkalinity has been predicted by model outputs. Because phosphate standards are derived from alkalinity and altitude, the increase in alkalinity will make orthophosphate standards less stringent, therefore a change in status may be observed at some points on the river. This change in alkalinity status would not have a negative effect on the saline environment of the Langstone harbour as sea water is already neutral to alkaline, thus the impact will be negligible.	
		Operation	The impact of increased flow to the Harbour which might occur during the emergency draw-down of the reservoir, (should this ever be required.)	In an emergency drawdown situation water would be discharged to the Riders Lane Stream and the Hermitage Stream. There is a very low risk that emergency draw down will be needed as the risk of the reservoir embankment failure will be low as; The reservoir will be designed to the highest safety standards and meeting the requirements of the reservoir Act. The ED volumes will be less than the volume of water created by a 1 in 100-year storm event at the drawdown discharge point. The stream has already been engineered to accommodate that volume of flow. The lower channel of Hermitage Stream where it enters Langstone Harbour is armoured and dredged. The volume of water required for ED is not anticipated to cause damage to the channel that could affect qualifying bird species. A large volume of water entering the Langstone harbour in an emergency draw-down situation would not have a significant effect on the harbour as the water is entering a large open space (the harbour) and the flow would be less than a 100-year storm event Annual (or more) testing will be carried out to demonstrate that the ED valves and structures are functional. Valves can be tested individually to avoid the need to test the full ED flow. The timing can be planned to minimise impacts.	No
		Operation	Noise and Vibration	Two non-designated Brent geese sites that support the SPA / Ramsar site are located within 400 m of the Bedhampton and Havant Springs Pumping Site. It is anticipated that operational noise will not exceed the highest level during the construction phase of 87dB at a distance of 10 m from the source. Thus, the levels of noise at the operational phase will be well below levels at which Brent geese could be affected; at a minimum approach distance of 100 m is 110-115 dB at source, increasing to 120-125 dB at source approach distance of 300 m will not be	No

Table 6-2 - Chichester and Langstone Harbours Ramsar Site

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
Criterion 1 - Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes. Criterion 5 – Assemblages of international importance: 76,480 waterfowl, count in winter (5-year peak mean 1998/99 – 2002/2003) Criterion 6 – species/populations occurring at levels of international importance. Qualifying species/ populations (as identified at designation) Species with peak counts in spring/autumn: • Ringed plover; • Black-tailed godwit; and • Common redshank. Species with peak counts in winter: • Dark-bellied Brent goose; • Common shelduck <i>Tadorna</i>; • Grey plover; • Dunlin.	• The extent and distribution of qualifying natural habitats and habitats of qualifying species. • The structure and function (including typical species) of qualifying natural habitats. • The structure and function of the habitats of qualifying species. • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. • The populations of qualifying species, and, • The distribution of qualifying species within the site.	Construction	Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs.	The outflows of the springs into Hermitage Stream will retain a Minimum Residual Flow (MRF) under abstraction licensing agreements. The monitoring protocol to ensure the MRF is maintained is already agreed with the EA and in place. Thus, there will be no change to flows into Hermitage Stream in accordance with the abstraction licence. Water entering the reservoir site via three tributaries immediately north will be piped across the construction area into Riders Stream immediately south of the construction area to maintain existing flows into the Hermitage Stream and Langstone Harbour. There are several fresh water channels entering the Langstone Harbour for breeding birds to drink and bathe. Ramsar Site qualifying features breeding and over wintering are not reliant on the Hermitage Stream fresh water flow regimes. There is potential for fresh water screened within the construction area to be released downstream during periods when ephemeral watercourses within the site would normally be dry. This is concluded to be a positive action that would create increase of fresh water into Langstone harbour in months when water flows are reduced due to climate conditions.	No
		Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	Ground water that collects in excavations on site will be stored in borrow pits. Sediments will need to be removed from this water before it is discharged downstream. Although the distance involved is significant (3.85 km) there is a potential likely significant effect on the Ramsar Site, as a result of potential water quality degradation events during construction. Therefore, the requirement for Stage 2 Appropriate Assessment statement to inform an appropriate assessment has been triggered by this potential impact. Therefore, likely significant effects cannot be ruled out and this effect pathway has been considered at Stage 2 Appropriate Assessment.	Yes
		Construction	Water quality degradation through pollution, via hydrological connectivity	Ground water that collects in excavations on site will be stored in borrow pits. Pollution entering the site through surface water and pollution potentially generated from site construction machinery and disturbance to existing soils will need to be removed from this water before it is discharged downstream. There is a potential likely significant effect on the Ramsar Site, as a result of potential water quality degradation events during construction. Therefore, the requirement for Stage 2 Appropriate Assessment statement to inform and appropriate assessment has been triggered by this potential impact. Therefore, likely significant effects cannot be ruled out and this effect pathway has been considered at Stage 2 Appropriate Assessment.	Yes
		Construction	Alteration in salinity levels	The following habitats of the Chichester and Langstone Harbour Ramsar Site; intertidal saltmarsh and mudflats are present due to the saline influence of tides. These habitats are not reliant on freshwater discharge that enter the harbour via the Hermitage Stream. The EA abstraction licenced volumes will not change (located in Appendix 3) this requires Portsmouth Water to maintain a Minimum Residual Flow to the Hermitage Stream that hydrologically links the Scheme with Langstone Harbour, thus flows of freshwater from the Hermitage Stream into Langstone Harbour will be maintained. The Ramsar site habitats are reliant on saline tides; these are constant and are not affected by the Scheme	No

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
		Construction	Noise and vibration	The Scheme will not directly affect the Ramsar site and is located approximately 1 km north at the nearest location (Havant and Bedhampton Springs), where pipeline construction will take place. It is not anticipated that noise and vibration will travel such a distance to effect breeding birds or over wintering within the Ramsar site. Noise and vibration from construction activity will not exceed 87dB at 10 m from the construction activity source. Brent geese are disturbed when noise is within 110-115 dB at a distance of 100 m from the source. The nearest strategic Brent geese sites H05A and H11 are located in excess of 100 m from the pipeline corridor and it is concluded that a construction activity would not disturb Brent geese occupying these sites or effect breeding birds or over wintering within the Ramsar Site located 1 km south of the pipeline. Qualifying breeding bird species do not utilise the reservoir site, Pumping Site or land within 400 m of the pipeline route for breeding / feeding, therefore there are no functional links between the Scheme and the Ramsar Site.	No
				Two non-designated strategic feeding and roosting Brent geese sites, H05A and H11, that are used by birds from SPA / Ramsar Site are located within 300 m of the Bedhampton and Havant Springs pipeline Site. Noise and vibration from construction activity will not exceed 87dB at 10 m from the construction activity source. Brent geese are disturbed when noise is within 110-115 dB at a distance of 100 m from the source. The nearest strategic Brent geese sites H05A and H11 are located in excess of 100 m from the pipeline corridor and it is concluded that a construction activity would not disturb Brent geese or any other Ramsar Site birds, occupying these sites or effect breeding birds or over wintering within the Ramsar Site located 1 km south of the pipeline.	No
				Based on the nitrogen deposition rates results for SINCS within 350 m of the Scheme, it is considered that the effect during construction would be the same or less at any other site along the A3(M) and immediately south of the A3(M) where the Chichester and Langstone Harbour Ramsar Site is located. It is also considered that the NOx threshold for intertidal habitats (APIS, 2020)⁶⁹ within these European Sites are higher⁷⁰ than the woodland thresholds used for the assessment. It is therefore not anticipated that the flow of traffic during construction will have any adverse air quality impact on any European site.	No
		Operation	Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs	A control house located on the southern boundary of the reservoir site will bring together raw water outlet/inlet and overflows pipes. The majority of this pipework is carried under the new reservoir embankment in a culvert. The overflow pipe passes around the toe of the dam to discharge, via a submerged discharge chamber into the existing stream. Compensation flow would be measured and reduced in energy at the outlet from a submerged discharge chamber located next to the control building and released downstream in accordance with the EA impoundment licence that mandates water flows to remain the same as current flows from Riders Stream / Hermitage Stream into Langstone Harbour (or other alternative flow arrangement agreed with the EA). Excess water from the all of the springs at the Bedhampton and Havant Pumping Station Site, which are connected to the Portsmouth Water raw water collection pipe work is captured and discharged into the Hermitage Stream via two overflows, or in to	No

⁶⁹ <http://www.apis.ac.uk/search-pollutant-impacts>

⁷⁰ Intertidal habitats have a greater tolerance to Nox than woodland habitat

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
				the Brockhampton Stream via a third overflow. Thus, there is always an excess of water passing into the overflow system to maintain existing water flows.	
		Operation	Water quality degradation through mobilisation of sediment, nutrients and pollution via hydrological connectivity	Turbidity in the Havant & Bedhampton Springs is much lower than in the existing streams which enter the reservoir site from the north. The reservoir will act as a stilling basin for sediment washed in from the upper catchment, allowing sediments to settle out and by buffering transient events. The outline reservoir design acknowledges the high suspended solid load in the feeder streams at times and has ensured the water flows through a retained wetland before entering the main water body. It is anticipated this will trap the silt. Thus, even during a summer storm event the risk of reduced water quality due to mobilisation of silt will be less ⁷¹ .	No
		Operation	Water quality degradation through mobilisation of nitrates hydrological connectivity	Construction of Havant Thicket reservoir will reduce nitrate loading to the Chichester and Langstone Harbours Ramsar site. Consequently, the nitrogen loads to the harbour are predicted to decline on average by 6.7% as a result of construction of the new reservoir which will help protect the condition of the Ramsar site. This decline varies substantially from year to year depending on how much water is pumped to the reservoir (during and after drought periods the reduction in nitrate to the harbour could be as much as 40%). In relation to the requirements of the Habitats Directive (2017 as amended) ⁷² and Birds Directives (2009 as amended) ⁷³ , the impact of the reservoir is positive; reducing nitrogen inputs which should help protect the sites and improve their condition.	No
		Operation	Water quality degradation through mobilisation of phosphates, via hydrological connectivity	Phosphorus concentrations downstream of the reservoir would be reduced after the reservoir is built, due to low phosphorous concentrations within the reservoir compared to the existing stream flows.	No
		Operation	Inputs of phosphorus and trophic state through the creation of a wetland, via hydrological connectivity (the Hermitage Stream);	The risk of significant inputs of nutrient from wildfowl cannot be discounted due to the proximity of the proposed reservoir to the sea (and, therefore, populations of gulls) and the proposed development of a wetland at the reservoir to create habitat for wildfowl and the existence of urban feeding areas for gulls. A potential accumulation of phosphorus in the reservoir sediment and its subsequent release could increase the trophic state of the reservoir. Thermal stratification can play an important role in influencing phosphorus exchange. To minimise a potential increase in phosphorus concentration from the wetland into the reservoir the wetland design to the north-west of the proposed reservoir, where birds are likely to mainly congregate, will be separated from the main reservoir when summer water levels are low by a retaining structure. Installation of a mixing system within the control house, of compressed air will reduce the risk of transient stratification in the proposed reservoir. The engineering of alternative draw-off points (depth and location) will allow use of use of the water with the best quality if this is heterogeneous within the reservoir. It is unlikely however that different positioning of draw-off points can fully mitigate the risks associated with stratification. The preventative measure of reservoir mixing is considered to be best practice for reservoir water quality. Ortho-phosphate concentrations are predicted to change less than 1% downstream of the reservoir and no change in WFD status results. In the Riders Lane Stream the	No

⁷¹ Atkins February (2020). Havant Thicket Winter Storage Reservoir Early Start Studies Water Quality Study - Water Quality Modelling Report Portsmouth Water 11 February 2020. Author PD.

⁷² The Conservation of Habitats and Species Regulations (2017). European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

⁷³ The Birds Directive (2009). Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
				status is High (below 45µg/l – the High to Good boundary at this location) and in the Hermitage Stream at New Road the status is Moderate (below 200 µg/l – the Moderate to Poor boundary at this location). The classifications would not change as a result of outflows from the reservoir. A 500% increase in alkalinity has been predicted by model outputs. Because phosphate standards are derived from alkalinity and altitude, the increase in alkalinity will make orthophosphate standards less stringent, therefore a change in status may be observed at some points on the river. This change in alkalinity status would not have a negative effect on the saline environment of the Langstone harbour as sea water is already neutral to alkaline, thus the impact will be negligible.	
		Operation	The impact of increased flow to the Harbour which might occur during the emergency draw-down of the reservoir, (should this ever be required.)	In an emergency drawdown situation water would be discharged to the Riders Lane Stream and the Hermitage Stream. There is a very low risk that emergency draw down will be needed as the risk of the reservoir embankment failure will be low as; The reservoir will be designed to the highest safety standards and meeting the requirements of the Reservoir Act. The ED volumes will be less than the volume of water created by a 1 in 100-year storm event at the drawdown discharge point. The stream has already been engineered to accommodate that volume of flow. The lower channel of Hermitage Stream where it enters Langstone Harbour is armoured and dredged. The volume of water required for ED is not anticipated to cause damage to the channel that could affect qualifying bird species. A large volume of water entering the Langstone harbour in an emergency draw-down situation would not have a significant effect on the harbour as the water is entering a large open space (the harbour) and the flow would be less than a 100-year storm event Annual (or more) testing will be carried out to demonstrate that the ED valves and structures are functional. Valves can be tested individually to avoid the need to test the full ED flow. The timing can be planned to minimise impacts.	No
		Operation	Alteration in salinity levels	The following habitats of the Chichester and Langstone Harbour Ramsar Site; intertidal saltmarsh and mudflats are present due to the saline influence of tides. These habitats are not reliant on freshwater discharge that enter the harbour via the Hermitage Stream. The EA abstraction licenced volumes will not change (located in Appendix 3) this requires Portsmouth Water to maintain a Minimum Residual Flow to the Hermitage Stream that hydrologically links the Scheme with Langstone Harbour, thus flows of freshwater from the Hermitage Stream into Langstone Harbour will be maintained. The Ramsar site habitats are reliant on saline tides; these are constant and are not affected by the Scheme.	No
		Operation	Noise and Vibration	Two non-designated Brent geese sites that support the SPA / Ramsar site are located within 400 m of the Bedhampton and Havant Springs Pumping Site. It is anticipated that operational noise will not exceed the highest level during the construction phase of 87dB at a distance of 10 m from the source. Thus, the levels of noise at the operational phase will be well below levels at which Brent geese could be	No

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
				affected; at a minimum approach distance of 100 m is 110-115 dB at source, increasing to 120-125 dB at source approach distance of 300 m will not be	
		Operation	Air Quality	1.1 As there is no requirement for an air quality assessment of operational phase traffic, only the construction phase traffic has been assessed ⁶⁵ . Thus, it is anticipated that operational phase traffic would not exceed construction phase critical loads, discussed above.	No

Table 6-3 - Solent Maritime SAC

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
Annex I habitats that are a primary reason for selection of this site <i>Spartina</i> swards Atlantic salt meadows Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Coastal lagoons * Priority feature Annual vegetation of drift lines Perennial vegetation of stony banks Salicornia and other annuals colonizing mud and sand Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) Annex II species present as a qualifying feature, but not a primary reason for site selection: Desmoulin's whorl snail	- The extent and distribution of qualifying natural habitats and habitats of qualifying species. - The structure and function (including typical species) of qualifying natural habitats. - The structure and function of the habitats of qualifying species. - The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. - The populations of qualifying species, and, - The distribution of qualifying species within the site.	Construction	Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs.	The outflows of the springs into Hermitage Stream will retain a Minimum Residual Flow (MRF) under abstraction licensing agreements. The monitoring protocol to ensure the MRF is maintained is already agreed with the EA and in place. Thus, there will be no change to flows into Hermitage Stream in accordance with the abstraction licence. Water entering the reservoir site via three tributaries immediately north will be piped across the construction area into Riders Stream immediately south of the construction area to maintain existing flows into the Hermitage Stream and Langstone Harbour. There are several fresh water channels entering the Langstone Harbour for breeding birds to drink and bathe. Ramsar Site qualifying features breeding and over wintering are not reliant on the Hermitage Stream fresh water flow regimes. There is potential for fresh water screened within the construction area to be released downstream during periods when ephemeral watercourses within the site would normally be dry. This is concluded to be a positive action that would create increase of fresh water into Langstone harbour in months when water flows are reduced due to climate conditions.	No
		Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	Ground water that collects in excavations on site will be stored in borrow pits. Sediments will need to be removed from this water before it is discharged downstream. Although the distance involved is significant (3.85 km) there is a potential likely significant effect on the Ramsar Site, as a result of potential water quality degradation events during construction. Therefore, the requirement for Stage 2 Appropriate Assessment statement to inform an appropriate assessment has been triggered by this potential impact. Therefore, likely significant effects cannot be ruled out and this effect pathway has been considered at Stage 2 Appropriate Assessment.	Yes
		Construction	Water quality degradation through pollution, via hydrological connectivity	Ground water that collects in excavations on site will be stored in borrow pits. Pollution entering the site through surface water and pollution potentially generated from site construction machinery and disturbance to existing soils will need to be removed from this water before it is discharged downstream. There is a potential likely significant effect on the Ramsar Site, as a result of potential water quality degradation events during construction. Therefore, the requirement for Stage 2 Appropriate Assessment statement to inform and appropriate assessment has been triggered by this potential impact. Therefore, likely significant effects cannot be ruled out and this effect pathway has been considered at Stage 2 Appropriate Assessment.	Yes
		Construction	Alteration in salinity levels	The following habitats of the Solent Maritime SAC: <i>Spartina</i> swards, Atlantic salt meadows, inundated sandbanks, mudflats, coastal lagoons are present due to the saline influence of tides. These habitats are not reliant on freshwater discharge that enter the harbour via the Hermitage Stream. The EA abstraction licenced volumes will not change (located in Appendix 3) this requires Portsmouth Water to maintain a Minimum Residual Flow to the Hermitage Stream that hydrologically links the Scheme with Langstone Harbour, thus flows of freshwater from the Hermitage Stream into Langstone Harbour will be maintained.	No

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
				The Ramsar site habitats are reliant on saline tides; these are constant and are not affected by the Scheme.	
	- The structure and function (including typical species) of qualifying natural habitats. - The structure and function of the habitats of qualifying species. - The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. - The populations of qualifying species, and, - The distribution of qualifying species within the site.	Construction	Air Quality	Based on the nitrogen deposition rates results for SINC's within 350 m of the Scheme, it is considered that the effect during construction would be the same or less at any other site along the A3(M) and immediately south of the A3(M) where the Solent and Maritime SAC is located. It is also considered that the NO_x threshold for intertidal habitats (APIS, 2020)⁷⁴ within these European sites are higher⁷⁵ than the woodland thresholds used for the assessment. It is therefore not anticipated that the flow of traffic during construction will have any adverse air quality impact on any European site.	No
	- The extent and distribution of qualifying natural habitats and habitats of qualifying species. - The structure and function (including typical species) of qualifying natural habitats. - The structure and function of the habitats of qualifying species. - The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. - The populations of qualifying species, and, - The distribution of qualifying species within the site.	Operation	Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs	A control house located on the southern boundary of the reservoir site will bring together raw water outlet/inlet and overflows pipes. The majority of this pipework is carried under the new reservoir embankment in a culvert. The overflow pipe passes around the toe of the dam to discharge, via a submerged discharge chamber into the existing stream. Compensation flow would be measured and reduced in energy at the outlet from a submerged discharge chamber located next to the control building and released downstream in accordance with the EA impoundment licence that mandates water flows to remain the same as current flows from Riders Stream / Hermitage Stream into Langstone Harbour (or other alternative flow arrangement agreed with the EA). Excess water from the all of the springs at the Bedhampton and Havant Pumping Station Site, which are connected to the Portsmouth Water raw water collection pipe work is captured and discharged into the Hermitage Stream via two overflows, or in to the Brockhampton Stream via a third overflow. Thus, there is always an excess of water passing in to the overflow system to maintain existing water flows.	No
		Operation	Water quality degradation through mobilisation of sediment, nutrients and pollution via hydrological connectivity	Turbidity in the Havant & Bedhampton Springs is much lower than in the existing streams which enter the reservoir site from the north. The reservoir will act as a stilling basin for sediment washed in from the upper catchment, allowing sediments to settle out and by buffering transient events. The outline reservoir design acknowledges the high suspended solid load in the feeder streams at times and has ensured the water flows through a retained wetland before entering the main water body. It is anticipated this will trap the silt. Thus, even during a summer storm event the risk of reduced water quality due to mobilisation of silt will be less ⁷⁶ .	No
		Operation	Water quality degradation through mobilisation of nitrates, via hydrological connectivity	Construction of Havant Thicket reservoir will reduce nitrate loading to the Chichester and Langstone Harbour SPA. Consequently, the nitrogen loads to the harbour are predicted to decline on average by 6.7% as a result of construction of the new reservoir which will help protect the condition of the SAC. This decline varies substantially from year to year depending on how much water is pumped to the	No

⁷⁴ <http://www.apis.ac.uk/search-pollutant-impacts>

⁷⁵ Intertidal habitats have a greater tolerance to Nox than woodland habitat

⁷⁶ Atkins February (2020). Havant Thicket Winter Storage Reservoir Early Start Studies Water Quality Study - Water Quality Modelling Report Portsmouth Water 11 February 2020. Author PD.

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
				reservoir (during and after drought periods the reduction in nitrate to the harbour could be as much as 40%). In relation to the requirements of the Habitats Directive (2017 as amended) ⁷⁷ and Birds Directives (2009 as amended) ⁷⁸ , the impact of the reservoir is positive; reducing nitrogen inputs which should help protect the sites and improve their condition.	
		Operation	Water quality degradation through mobilisation of phosphates, via hydrological connectivity	Phosphorus concentrations downstream of the reservoir would be reduced after the reservoir is built, due to low phosphorous concentrations within the reservoir compared to the existing stream flows.	No
		Operation	Inputs of phosphorus and trophic state through the creation of a wetland, via hydrological connectivity (the Hermitage Stream);	The risk of significant inputs of nutrient from wildfowl cannot be discounted due to the proximity of the proposed reservoir to the sea (and, therefore, populations of gulls) and the proposed development of a wetland at the reservoir to create habitat for wildfowl and the existence of urban feeding areas for gulls. A potential accumulation of phosphorus in the reservoir sediment and its subsequent release could increase the trophic state of the reservoir. Thermal stratification can play an important role in influencing phosphorus exchange. To minimise a potential increase in phosphorus concentration from the wetland into the reservoir the wetland design to the north-west of the proposed reservoir, where birds are likely to mainly congregate, will be separated from the main reservoir when summer water levels are low by a retaining structure. Installation of a mixing system within the control house, of compressed air will reduce the risk of transient stratification in the proposed reservoir. The engineering of alternative draw-off points (depth and location) will allow use of use of the water with the best quality if this is heterogeneous within the reservoir. It is unlikely however that different positioning of draw-off points can fully mitigate the risks associated with stratification. The preventative measure of reservoir mixing is considered to be best practice. Ortho-phosphate concentrations are predicted to change less than 1% downstream of the reservoir and no change in WFD status results. In the Riders Lane Stream the status is High (below 45µg/l – the High to Good boundary at this location) and in the Hermitage Stream at New Road the status is Moderate (below 200 µg/l – the Moderate to Poor boundary at this location). The classifications would not change as a result of outflows from the reservoir. A 500% increase in alkalinity has been predicted by model outputs. Because phosphate standards are derived from alkalinity and altitude, the increase in alkalinity will make orthophosphate standards less stringent, therefore a change in status may be observed at some points on the river. This change in alkalinity status would not have a negative effect on the saline environment of the Langstone harbour as sea water is already neutral to alkaline, thus the impact will be negligible.	No
		Operation	The impact of increased flow to the Harbour which might occur during the	In an emergency drawdown situation water would be discharged to the Riders Lane Stream and the Hermitage Stream. There is a very low risk that emergency draw down will be needed as the risk of the reservoir embankment failure will be low as;	No

⁷⁷ The Conservation of Habitats and Species Regulations (2017). European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

⁷⁸ The Birds Directive (2009). Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
			emergency draw-down of the reservoir, (should this ever be required).	The reservoir will be designed to the highest safety standards and meeting the requirements of the Reservoir Act. The ED volumes will be less than the volume of water created by a 1 in 100-year storm event at the drawdown discharge point. The stream has already been engineered to accommodate that volume of flow. The lower channel of Hermitage Stream where it enters Langstone Harbour is armoured and dredged. The volume of water required for ED is not anticipated to cause damage to the channel that could affect qualifying bird species. A large volume of water entering the Langstone harbour in an emergency draw-down situation would not have a significant effect on the harbour as the water is entering a large open space (the harbour) and the flow would be less than a 100-year storm event Annual (or more) testing will be carried out to demonstrate that the ED valves and structures are functional. Valves can be tested individually to avoid the need to test the full ED flow. The timing can be planned to minimise impacts.	
		Operation	Water quality degradation through mobilisation of phosphates, via hydrological connectivity	Phosphorus concentrations downstream of the reservoir would be reduced after the reservoir is built, due to low phosphorous concentrations within the reservoir compared to the existing stream flows.	No
		Operation	Water quality degradation / increase of phosphorus from wildfowl through the creation of a wetland.	The risk of significant inputs of nutrient from wildfowl cannot be discounted due to the proximity of the proposed reservoir to the sea (and, therefore, populations of gulls) and the proposed development of a wetland at the reservoir to create habitat for wildfowl and the existence of urban feeding areas for gulls. A potential accumulation of phosphorus in the reservoir sediment and its subsequent release could increase the trophic state of the reservoir. Thermal stratification can play an important role in influencing phosphorus exchange. To minimise a potential increase in phosphorus concentration from the wetland into the reservoir the wetland design to the north-west of the proposed reservoir, where birds are likely to mainly congregate, will be separated from the main reservoir when summer water levels are low by a retaining structure. Installation of a mixing system within the control house, of compressed air will reduce the risk of transient stratification in the proposed reservoir. The engineering of alternative draw-off points (depth and location) will allow use of use of the water with the best quality if this is heterogeneous within the reservoir. It is unlikely however that different positioning of draw-off points can fully mitigate the risks associated with stratification. The preventative measure of reservoir mixing is considered to be best practice for reservoir water quality. Ortho-phosphate concentrations are predicted to change less than 1% downstream of the reservoir and no change in WFD status results. In the Riders Lane Stream the status is High (below 45µg/l – the High to Good boundary at this location) and in the Hermitage Stream at New Road the status is Moderate (below 200 µg/l – the Moderate to Poor boundary at this location). The classifications would not change as a result of outflows from the reservoir. A 500% increase in alkalinity has been predicted by model outputs. Because phosphate standards are derived from alkalinity and altitude, the increase in alkalinity will make orthophosphate standards less stringent, therefore a change in status may be observed at some points on the river.	No

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
				This change in alkalinity status would not have a negative effect on the saline environment of the Langstone harbour as sea water is already neutral to alkaline, thus the impact will be negligible.	
			Air Quality	1.2 As there is no requirement for an air quality assessment of operational phase traffic, only the construction phase traffic has been assessed ⁶⁵ . Thus, it is anticipated that operational phase traffic would not exceed construction phase critical loads, discussed above.	No

Table 6-4 - Singleton and Cocking Tunnels SAC and Ebernoe Common SAC; Bechstein's Bat are Qualifying Species

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Reasoning	Potential for likely significant effect
Singleton and Cocking Tunnel SAC Annex II species present as a qualifying feature, but not a primary reason for site selection: Bechstein's bat	Maintain the presence of hibernating Bechstein's bats at the European site; Restore any core areas of feeding habitat outside of the SAC boundary that are critical to Bechstein's bat during their hibernation period; Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats	Construction	Loss of Bechstein's bat non-maternity roost sites within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC	There will be a loss of four known single individual Bechstein's bat day roosts and a single night roost in The Avenue woodland and Round Wood supporting a maximum of three individual bats. A small number (1-10) of other day / night Bechstein's bat roosts are estimated to be lost within these woodlands. If unmitigated, tree felling could potentially injure or kill Bechstein's bat present when the woodland is cleared. The result of extensive radio-tracking work indicates that no Bechstein's bat maternity roosts will be lost. Loss of broadleaved woodland (Middle Clearing (2.17 ha), Round Wood (1.66 ha) and the Avenue (6.68 ha)) particularly The Avenue, will result in a reduction in suitable roosting features for Bechstein's bat. Suitable roost features for Bechstein's bat will still be present in the extensive broadleaved woodland associated with SCP, located immediately south of the Site. There will be no disturbance or loss of Bechstein's bat roost sites within the Singleton and Cocking Tunnels SAC from the construction works at the Bedhampton and Havant Pumping Site. At this point in the design it is concluded that there will be no disturbance or loss of Bechstein's bat roost sites that are qualifying features of the Singleton and Cocking Tunnels SAC from the construction works along the pipeline route. This assessment can be reviewed once more detail is known on the fixed pipeline route and method of construction and once further ecological assessment has been carried out. The nearest of the Sussex bat SAC's to the reservoir site is Singleton and Cocking Tunnels SAC, located 15 km east of the reservoir site. The SAC comprises two tunnels that are hibernation roosts for an assemblage of bats including Bechstein's bat (a qualifying species). It is unknown if Bechstein's bat recorded within the reservoir site use the SAC tunnels as hibernation roosts. In the absence of survey work to clarify this (which will not be carried out as part of the Scheme), the potential that Bechstein's bat may be indirectly functionally linked to Singleton and Cocking Tunnels SAC via Southleigh Forest cannot be ruled out. Likely significant effects on Singleton and Cocking Tunnel SAC cannot be ruled out. The effect pathway on Singleton and Cocking Tunnel SAC has been considered at Stage 2 Appropriate Assessment.	Yes
Ebernoe Common SAC Annex II species present as a qualifying feature, but not a primary reason for site selection: Bechstein's bat	Maintain the presence of hibernating Bechstein's bats at the European site; Restore any core areas of feeding habitat outside of the SAC boundary that are critical to Bechstein's bat during their hibernation period; Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure,	Construction	Loss of Bechstein's bat non-maternity roost sites within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that roost in Ebernoe Common SAC	There will be a loss of four known single individual Bechstein's bat day roosts and a single night roost in The Avenue woodland and Round Wood supporting a maximum of three individual bats. A small number (1-10) of other day / night Bechstein's bat roosts are estimated to be lost within these woodlands. If unmitigated, tree felling could potentially injure or kill Bechstein's bat present when the woodland is cleared. The result of extensive radio-tracking work indicates no Bechstein's bat maternity roosts will be lost. Loss of broadleaved woodland (Middle Clearing (2.17 ha), Round Wood (1.66 ha) and the Avenue (6.68 ha)) particularly The Avenue, will result in a reduction in suitable roosting features for Bechstein's bat Suitable roost features for Bechstein's bat will still be present in the extensive broadleaved woodland associated with SCP, located immediately south of the Site.	No

	functions and supporting processes associated with the feature and/or its supporting habitats			There will be no disturbance or loss of Bechstein's bat roost sites within the Ebernoe Common SAC, from the construction works at the Bedhampton and Havant Pumping Site. The Ebernoe Common SAC is located 29 km east of the reservoir site and comprises ancient woodland and a maternity colony of Bechstein's bat. Bechstein's bat are reported to feed exclusively in the woodland⁷⁹, the loss of Bechstein's bat day roost sites in the reservoir site is not considered to effect the qualifying Bechstein's bats of Ebernoe Common SAC due to the distance of the reservoir site from Ebernoe, the remaining large areas of foraging land located between the reservoir site and Ebernoe Common SAC that will not be affected by the Scheme, and the likelihood that the colonies of Bechstein's bat at the reservoir site and Ebernoe Common are separate. Therefore, likely significant effects on Ebernoe Common SAC are screened out.	
Singleton and Cocking Tunnel SAC Annex II species present as a qualifying feature, but not a primary reason for site selection: Bechstein's bat	Maintain the presence of hibernating Bechstein's bats at the European site; Restore any core areas of feeding habitat outside of the SAC boundary that are critical to Bechstein's bat during their hibernation period; Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats	Construction	Loss of Bechstein's bat foraging habitat within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC	In the absence of mitigation there will be a loss of the following woodland areas and tree lines where Bechstein's bat have been recorded either foraging or commuting or both: - The Avenue – 6.87 ha of high-quality foraging habitat and a commuting corridor between Havant Thicket woodland and SCP; albeit infrequently used for foraging by Bechstein's bat; - Round Wood – 1.66 ha of moderate quality foraging habitat; - The Corsican Pine Plantation - 2.19 ha of poor-quality foraging habitat; - Tree lines (predominantly willow along streams) used as commuting routes linking Middle Clearing and The Avenue, The Avenue and Havant Thicket woodland. Surveys have indicated that a maternity roost was present close to the site in one year (2008) out of four years where surveys have been undertaken on-site or in Staunton Country Park (SCP), (2009, 2016, 2019). The proposed Scheme will result in reduced foraging opportunities for any future maternity roosts within SCP and potentially affect breeding success. However, it should be noted that based on the available survey data these impacts would be only likely to occur on an intermittent basis, when a maternity roost is present locally. The proposals will result in the disruption of the ability of Bechstein's bat to move around the landscape through loss of the commuting routes across the site provided by The Avenue and foraging areas within these woodland blocks. One of the Bechstein's bat in 2018 was recorded commuting across the site using features outside of the reservoir footprint; these habitats will still be available during construction to Bechstein's bat. The nearest of the Sussex bat SAC's to the reservoir site is Singleton and Cocking Tunnels SAC, located 15 km east of the reservoir site. The SAC comprises two tunnels that are hibernation roosts for an assemblage of bats including Bechstein's bat (a qualifying species). It is unknown if Bechstein's bat recorded within the reservoir use the SAC tunnels as hibernation roosts. In the absence of survey work to clarify this (which will not be carried out as part of the Scheme), the potential that Bechstein's bat may be indirectly functionally linked to Singleton and Cocking Tunnels SAC via Southleigh Forest cannot be ruled out. Therefore, likely significant effects on Singleton and Cocking Tunnel SAC cannot be ruled out. The effect pathway on Singleton and Cocking Tunnel SAC has been considered at Stage 2 Appropriate Assessment.	Yes
Ebernoe Common SAC Annex II species present as a qualifying feature, but not a primary reason for site selection:	Maintain the presence of hibernating Bechstein's bats at the European site;	Construction	Loss of Bechstein's bat foraging habitat within the reservoir site and potential effects on the favourable conservation status of	In the absence of mitigation there will be a loss of the following woodland areas and tree lines where Bechstein's bat have been recorded either foraging or commuting or both:	No

Restore any core areas of feeding habitat outside of the SAC boundary that are critical to Bechstein's bat during their hibernation period;

Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats

Bechstein's bat that roost in Ebernoe Common SAC

- The Avenue – 6.87 ha of high-quality foraging habitat and a commuting corridor between Havant Thicket woodland and SCP; albeit infrequently used for foraging by Bechstein's bat;
- Round Wood – 1.66 ha of moderate quality foraging habitat;
- The Corsican Pine Plantation - 2.19 ha of poor-quality foraging habitat;
- Tree lines (predominantly willow along streams) used as commuting routes linking Middle Clearing and The Avenue, The Avenue and Havant Thicket woodland.

Surveys have indicated that a maternity roost was present close to the site in one year (2008) out of four years where surveys have been undertaken on-site or in Staunton Country Park (SCP), (2009, 2016, 2019). The proposed Scheme will result in reduced foraging opportunities for any future maternity roosts within SCP and potentially affect breeding success. However, it should be noted that based on the available survey data these impacts would be only likely to occur on an intermittent basis, when a maternity roost is present locally.

The proposals will result in the disruption of the ability of Bechstein's bat to move around the landscape through loss of the commuting routes across the site provided by The Avenue and foraging areas within these woodland blocks. One of the Bechstein's bat in 2018 was recorded commuting across the site using habitat features outside of the reservoir footprint; these habitat features will still be available during construction to Bechstein's bat.

The loss of broadleaved woodland at the reservoir site is not considered to effect the qualifying Bechstein's bats of Ebernoe Common SAC due to the distance of the reservoir site from Ebernoe Common SAC, the remaining large areas of foraging land located between the reservoir site, Ebernoe Common SAC will not be effected by the Scheme and the likelihood that the colonies of Bechstein's bat at the reservoir site and Ebernoe Common are separate.

Therefore, likely significant effects on Ebernoe Common SAC are screened out.

7 Projects considered for in-combination effects

- 7.1 The assessment has been undertaken using professional judgement and is based on information which is currently available and identified through accessing with Havant Borough Council and East Hampshire District Council, Local Planning Authorities (LPA) planning portals. It is possible that there will be future planning applications for developments which could result in in-combination effects with the Scheme but, in line with best practice guidance, only those developments which are 'reasonably foreseeable' and 'committed' have been included in the assessment.
- 7.2 In the absence of mitigation and compensation, potential in combination impacts include the impacts on bats associated with local plans and development. However, relevant planning applications in the local landscape are supported by ecological reports which conclude that residual effects on bats will either be negligible or beneficial, or planning permission was granted for developments indicating that the LPA was content that residual impacts would not occur or would be acceptable. Therefore, no in-combination adverse effects on local bat populations are anticipated.
- 7.3 In order to identify potential projects which could have an in-combination effect, a review was undertaken of planning applications within 2 km⁸⁰ of the Application Site that may have potential to contribute to in-combination effects, such that there is a LSE (Refer to the in-combination plan provided in Appendix D). The review was extended to 3 km⁸¹ for in combination effects/residual impacts on qualifying bat species of Singleton and Cocking Tunnels SAC.
- 7.4 This review identified the projects considered for in-combination effects on qualifying bird species of the Chichester and Langstone Harbours SPA and Ramsar Site, qualifying habitats of the Chichester and Langstone Harbours Ramsar Site the Solent Maritime SAC and qualifying species of the SAC and the Solent and Dorset Marine SPA. These are listed in **Error! Reference source not found.** (below).
- 7.5 None of the plans or projects or projects assessed in **Error! Reference source not found.** are considered likely to result in in-combination effects on Chichester and Langstone Harbour SPA and Ramsar Site, Solent and Dorset Marine SPA. and the Solent Maritime SAC with the Havant Thicket Reservoir and associated pipeline Scheme.
- 7.6 This review identified the projects considered for in combination effects/residual impacts on qualifying bat species of Singleton and Cocking Tunnels SAC, from planning applications within 3 km of the reservoir site. These are listed in Table 7-2 (below).
- 7.7 The review identified the following plan and four applications as having potential in-combination effect with the Scheme and could affect the conservation status of Bechstein's bat that are a qualifying feature of the Singleton and Cocking Tunnels SAC:
- West Sussex County Council and the South Downs National Park Authority Joint Minerals Local Plan:
 - There is a potential impact pathway on the Singleton and Cocking Tunnels SAC, identified due to the potential of loss of supporting habitat for Bechstein's bat roosting, foraging and commuting;
 - Planning Permission - 55562/001: Land East of Horndean:
 - Located approximately 300 m north of the reservoir site and 2.5 km north of the pipeline corridor. The proposed enhancement; to provide additional roosting

⁸⁰ These are plans and application assessed as part of the Environmental Statement – Chapter 19 Cumulative and In-Combination in ES Volume 2

opportunity is proposed to be located in Havant Thicket FE land. Havant Thicket is within the Havant Thicket reservoir Scheme Boundary. Compensation for the reservoir scheme in respect of Bechsteins' bat includes the installation of bat roosting boxes in Havant Thicket Woodland. Thus, in the absence of a joined-up compensation / enhancement approach, there is a potential in-combination effect on the conservation status of the Bechstein's bat population.

- Planning Application - 55562/005: Land East of Horndean:
- Located approximately 300 m north of the reservoir site and 2.5 km north of the pipeline corridor.
- The proposed enhancement described in the Committee report (June 2020); to provide additional roosting opportunity is proposed to be located in Havant Thicket FE land. Havant Thicket is within the Havant Thicket Reservoir Scheme Boundary. Compensation for the reservoir scheme in respect of Bechsteins' bat includes the installation of bat roosting boxes in Havant Thicket Woodland. Thus, in the absence of a joined-up compensation / enhancement approach, there is a potential in-combination effect on the conservation status of the Bechstein's bat population.
- Planning Application - 55562/006: Land East of Horndean:
- Located approximately 1.1 km north of the reservoir site and 3.6 km north of the pipeline corridor.
- The application site sits between two areas with confirmed Bechstein's records and therefore it is not unreasonable to infer that foraging/commuting bats may occur. Hampshire County Council Ecologist (June 2019) response to the application stated that HCC are aware of detailed bat survey works conducted on the adjacent residential development site over the last couple of years and that it would be productive to use these investigations to inform the assessment of impacts for this proposal.
- Adjacent developments include applications listed above where proposed Bechstein's bat mitigation within Havant Thicket woodland could have an in-combination effect, without a joined-up strategy between the Land East of Horn Dean developments and the Havant Thicket Reservoir Scheme. This application that had not determined habitat loss mitigation in respect of Bechstein's bat at the time of this assessment, also has the potential to have in combination effects on the conservation status of Bechstein's bat.
- Planning Application GEN/18/01143 Land North of Long Copse Lane, Emsworth
- Located approximately 3.4 km south east of the reservoir site and 2.9 km south east of the pipeline corridor.
Natural England consultation feedback provided to PW in response to a DAS review of this assessment (July 2020) stated in respect of this application:
- *'There are outstanding concerns in relation to the loss of Bechstein's bat foraging areas and impacts to roost sites. Land North of Long Copse Lane has significant residual effects on bats are likely at a site level and we aware that this project is still live'*

7.8 Atkins carried out a search in July 2020 for further planning documentation on the Havant Borough Council planning portal to inform NE's statement. Although the submitted documents could be seen listed, documents could not be viewed and upon trying to open an error message stating 'documents unavailable' appeared.

Table 7-1 - Projects considered for in combination effects/residual impacts on the Chichester and Langstone Harbour SPA / Ramsar Site, Solent Maritime SAC within 3 km of the Reservoir Site and 1.85 km of the Pipeline Corridor

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
Plans							
East Hampshire District Council -Core Strategy						East Hampshire District Local Plan: Joint Core Strategy Revised Housing Numbers Habitats Regulations Assessment – Appropriate Assessment report July 2013⁸² <u>Chichester and Langstone Harbours SPA /Ramsar</u> 9.5.1 It has been possible to determine that significant water quality, water resource and air quality effects are unlikely to occur as a result of Joint Core Strategy development and that the Council's ongoing commitment to the Solent Disturbance and Mitigation project will enable adequate strategic mitigation to be delivered for recreational pressure. <u>Solent Maritime SAC</u> Water supplies to the southern part of East Hampshire district are supplied by Portsmouth Water. This area lies within WRZ1 which is largely dependent on groundwater supplies, with a single significant surface water supply from the River Itchen. 9.4.14 Havant Thicket Reservoir (off the B2149 between Horndean and Rowlands Castle) is a winter storage reservoir advocated within the policy on Water Resources/Quality (CP24). This will store surplus water from the springs at Havant & Bedhampton Springs, which during the winter and spring, would otherwise flow into Langstone Harbour. This reservoir could theoretically reduce flows into the internationally designated site. However, the planning application is currently on hold and the reservoir is not likely to commence until 2025 with completion expected by 2035. 9.4.15 In addition, the Council has a number of measures within its policies that will help to reduce demand on water resources: □□CP22 - Sustainable Construction: □□CP24 - Water Resources and Quality: 9.4.16 Adverse water supply/flow impacts as a result of Joint Core Strategy development are therefore unlikely.	No

⁸² <https://www.easthants.gov.uk/sites/default/files/documents/East%20Hampshire%20Core%20Strategy%20AA%20July%202013%20word.pdf>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
Chichester Local Plan			Habitat Regulations Assessment: Chichester Local Plan Review Chichester District Council Project number: 60549754	n/a	The following policies were identified as having potential for linking impact pathway and increased recreational pressure of the Chichester and Langstone Harbour SPA/ Ramsar Site and Solent Maritime SAC: - Policy AL1: Land West of Chichester; - Policy AL2: Land at Shopwyke (Oving Parish); - Policy AL3: East of Chichester (Oving Parish); - Policy AL5 Southern Gateway; - Policy AL6: Land south-west of Chichester (Apuldram and Donnington Parishes); - Policy AL7: Highgrove Farm, Bosham; - Policy AL9: Fishbourne Parish; - Policy AL10: Chidham and Hambrook Parish; - Policy AL11: Hunston Parish; - Policy AL12: Land North of Park Farm, Selsey; - Policy AL13: Southbourne Parish The Local Plan Review provides policy to provide protection to European sites as a result of recreational pressure through the implementation of policies DM29, S12, DM16, AL12 and AL11. Policies, 5, 6, 7, 9 and 13 have potential to effect water quality and hydrology of the European Sites. The Local Plan Review provides policy to provide protection to European sites as a result of adverse water quality through the implementation of policies S31, DM29, S12 and DM16. Policies, 9, 10, 11, 12 and 13 have potential to effect loss of functionally linked supporting habitat of the European Sites. The Local Plan Review provides policy to provide protection to European sites as a result loss of functionality through the implementation of policy DM29. Policies 6, 9, 10, 11, 12 and 13 have potential urbanisation effects to the European Sites. The Local Plan Review provides policy to provide protection to European sites as a result loss of Urbanisation through the implementation of policies DM29, DM30, S12, DM16, AL11, AL12 and DM35.	<u>Chichester Local Plan HRA November 2018.</u> It is concluded that, through the application of plan-led strategic and proposal-specific mitigation measures, the Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
Portsmouth Site Allocations Document Habitats Regulations Assessment for the Screening Statement February 2013 ⁸³			Portsmouth City Council	Site Allocations	Portsmouth City Council – local plan Site Allocations	Suitable avoidance and mitigation measures proposed by the council as part of the HRA and further measures will be applied by the council through HRA to determine the ways in which the sites may be adversely affected, and further consider suitable avoidance and mitigation measures. Mitigation of likely impacts has been recommended within the screening process and it is intended that a further screening iteration can be carried out once mitigating actions are built into the proposals. The Council will undertake a detailed Appropriate Assessment for any site for where LSE have been identified. <u>Chichester and Langstone Harbours SPA / Ramsar</u>	No

⁸³ <https://www.portsmouth.gov.uk/ext/documents-external/dev-site-allocations-ue-screening.pdf>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						Nine proposed development allocations could indirectly affect the SPA / Ramsar e.g. because it provides for, or steers, a quantity or type of development that may be ecologically, hydrologically or physically connected to it or increase disturbance. The Council is committed to full AA where LSE have been identified. <u>Solent Maritime SAC</u> Langstone Harbour Coastal Path proposal could directly affect the SAC because it provides for, or steers, a quantity or type of development onto a European site, or adjacent to it. The Council is committed to full AA where LSE have been identified.	
Chichester District Council ⁸⁴ - Westbourne Neighbourhood Plan (2017 – 2029) ⁸⁵			Westbourne Neighbourhood Plan		Total of 28 houses: Land to the West of Monk's Hill – 6 dwellings Land at Long Copse Lane – 16 dwellings (Permission granted in December 2015, under construction) Land adjacent to Chantry Hall, Foxbury Lane – 6 dwellings The proposed allocations are within 5.6km of the Chichester & Langstone Harbours SPA/Ramsar. In accordance with advice from Natural England and as detailed in Chichester District Local Plan Policy 50 and 51 and the Solent Recreation Mitigation Strategy, a net increase in housing development within this area is likely to result in impacts to the integrity of those sites as a result of increased recreational disturbance in combination with all other local plan and neighbourhood plans in the 5.6km zone of influence.	The Westbourne Neighbourhood Plan will have a likely significant effect in combination with other proposals in the zone of influence on the following Chichester and Langstone Harbours SPA/Ramsar / (5.6km radius of Chichester Harbour SPA). However, having considered the mitigation measures to be provided in-perpetuity through the secured contributions to the Solent Recreation Mitigation Strategy (SRMS), Chichester District Council concludes that the Westbourne Neighbourhood Plan will not lead to any significant or adverse effects on the integrity of the Chichester and Langstone Harbours SPA / Ramsar Site.	No
Havant Borough Council Local Plan -Air Quality Habitat Regulations Assessment for Havant Borough Local Plan 2036 Report for Havant Borough Council ED 11925100 Issue Number 3 Date 21/01/2019 Ricardo Energy & Environment ⁸⁶			Havant Borough Council	Air Quality		The assessment summarised, adverse effects (pre-mitigation) at Solent Maritime SAC have been identified for the following qualifying features: • 1220 Perennial vegetation of stony banks (nitrogen deposition) Adverse effects can be discounted for all other qualifying features of the SAC, as well as for acid deposition, NOx and NH3 as causal pollutants. However, with the application of the mitigation advocated above, adverse effects on the qualifying features (PVSB) of the Solent Maritime SAC can be prevented and as such there will be no threat to the ability of the European site to achieve its conservation objectives or maintain its integrity as a result of the Havant Borough Local Plan (either alone or in combination).	No

⁸⁴ <https://www.chichester.gov.uk/neighbourhoodplan>
⁸⁵ https://www.chichester.gov.uk/media/31473/Westbourne-NP-HRA-Statement-Final-March-2019/pdf/Westbourne_NP_HRA_Statement_Final_March_2019.pdf
⁸⁶ <https://www.havant.gov.uk/sites/default/files/documents/Air%20Quality%20Habitat%20Regulations%20Assessment.pdf>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
Hampshire Minerals and Waste Plan Cities of Portsmouth & Southampton And New Forest & South Downs National Parks Record of Determination Stage 2 Assessment as required by Regulation 102 September 2013 ⁸⁷			Hampshire Minerals and Waste Plan	Hampshire County Council	Hampshire Minerals and Waste Plan	It is considered that the Plan would not be likely to have a significant effect on the integrity of European designated sites within Hampshire, in view of their conservation objectives, and the mitigation embedded within the Plan.	No
Hampshire Local Transport Plan 2011-2031 Habitats Regulations Assessment for the Hampshire Local Transport Plan 3, Screening Statement for Part A: 20 Year Strategy, March 2011 ⁸⁸			Hampshire Local Transport Plan	Hampshire County Council	Hampshire Local Transport Plan 2011-2031	This document sets out Hampshire County Council's statement on Habitats Regulations Assessment for the proposed LTP3 Strategy. It shows that at the present time, it is considered unlikely that the Strategy will generate significant effects at any European site included in the assessment, either alone or in-combination with other plans and projects. As a result a stage 2 Appropriate Assessment will not be undertaken.	No
West Sussex County Council and South Downs National Park Authority Joint Minerals Local Plan Single Issue Soft Sand Review Regulation 19 Habitats Regulations Assessment Main Report Prepared by West Sussex County Council and the South Downs National Park Authority September 2019 ⁸⁹			West Sussex County Council and South Downs National Park Authority	West Sussex County Council	West Sussex County Council and South Downs National Park Authority Joint Minerals Local Plan	It is assumed based on the distance of the mineral sites to the SPA, Ramsar site and SAC, there will be no likely significant effects in-combination with the scheme.	No
Environment Agency Statement on the Role of the Southern Regional Habitat Creation Programme (SRHCP) in the compliance of the North Solent SMP with the Habitats Regulations (2010)			North Solent Shoreline Management Plan HRA	n/a	The North Solent Shoreline Management Plan (SMP) is the first revision to the Western Solent and Southampton Water SMP and the East Solent and Harbours SMP. The coastline covered by the Plan extends between Selsey Bill, in the east, and Hurst Spit, in the west, and includes Portsmouth, Langstone and Chichester Harbours. A Habitat Assessment to inform the North Solent Shoreline Management Plan policy appraisal process and Appropriate Assessment was undertaken in 2010 and concluded that a number of designated sites and associated habitats be subjected to significant impacts if sea defenses fail ⁹⁰ . In response to this, sites were selected to create these vulnerable habitats under the SRHCP. The SRHCP will be able to deliver the required habitat over a 100-year period in. The SRHCP must provide compensation habitat before any damage is likely to occur through implementation of the Solent Management Plan (SMP). The North Solent SMP AA identified a need to compensate for the loss of 124 ha of saltmarsh and 12 ha of mudflat in the first 20 years. The SRHCP is on course to secure and deliver compensation habitat through the Medmerry site works for the creation of 158 ha of	The SRHCP is reviewed annually and reports on the progress of the RHCP in delivering the habitat creation requirements of the SMP. This annual report will confirm: 1. how much compensation habitat was required, 2. how much we expected to create in that year, 3. how much was actually created, 4. whether there is a shortfall/exceedance 5. how we plan to deal with any shortfall (if required). Most up to date annual report required to update.	No

⁸⁷ <https://www.hants.gov.uk/landplanningandenvironment/strategic-planning/hampshire-minerals-waste-plan>

⁸⁸ <https://documents.hants.gov.uk/transport/HRAScreeningReportforLTPMarch2011.pdf>

⁸⁹ <https://www.westsussex.gov.uk/about-the-council/policies-and-reports/environment-planning-and-waste-policy-and-reports/minerals-and-waste-policy/joint-minerals-local-plan/>

⁹⁰ <http://northsolentsmp.co.uk/CHttpHandler.ashx?id=12907&p=0>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
					saltmarsh habitat and 25 ha of mudflat within the next 20 years (these totals have been provided from SRHCP following further Medmerry project design). The SRHCP is therefore likely to deliver the Compensation habitats in advance of their loss.		
Havant Borough Council Local Plan 2036 Pre-Submission Havant Borough Local Plan 2019- 2036 – HRA – January			Local Plan 2036	n/a	Outcome of HRA Stage 1 - Screening - A total of 62 policies and proposals within the Local Plan are considered to have the potential to result in likely significant effect on a European site either alone or in-combination. 1 Any effect that may reasonably be predicted as a consequence of the plan or project that may affect the conservation objectives of the features for which a site was designated Pre-Submission Havant Borough Local Plan 2036 Habitats Regulations Assessment. 2• Eleven policies and proposals are considered to have potential to result in either direct habitat loss impacts or functional habitat loss impacts to Solent Maritime SAC, Chichester & Langstone Harbours SPA/Ramsar, Portsmouth Harbour SPA/Ramsar or Solent & Dorset Coasts SPA. • 53 policies and proposals are considered to have potential for recreational disturbance impacts to Chichester & Langstone Harbours SPA/Ramsar or Portsmouth Harbour SPA/Ramsar. • 62 policies and proposals are considered to have the potential for in-combination impacts related to increases in atmospheric pollution on Solent Maritime SAC, Butser Hill SAC, Chichester & Langstone Harbours SPA/Ramsar, Portsmouth Harbour SPA/Ramsar or Solent & Dorset Coasts SPA. • One policy is considered to have potential for increasing the potential impacts of coastal squeeze on Solent Maritime SAC and Chichester & Langstone Harbours SPA/Ramsar. • 60 policies and proposals are considered to have potential to result in in-combination impacts relating to water quality on Solent Maritime SAC, Chichester & Langstone Harbours SPA/Ramsar, Portsmouth Harbour SPA/Ramsar or Solent & Dorset Coasts SPA ⁹¹.	It is concluded that, through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No

⁹¹ Havant Borough Council, Local Plan 2036. January 2019. Pre-submission Plan, Habitat Regulations Assessment. Page 79

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
1	Allocation - CS18.1 (Core strategy; strategic site)	Havant Borough Council (HBC) Policy KP1 – Havant Town Centre	Havant Public Service Village	The land allocation is located on land East of B2149, Elmleigh Road: - 1.9 km south of the reservoir site - 335 m east of the pipeline corridor	1,944 new dwellings, 76,121 sq meters of new employment floorspace and 9,000 sq meters new comparison goods retail floorspace all consisting of front-line functions of public service providers, office, leisure uses, housing, car parking and health related functions. The Civic Campus area is identified in the emerging town centre boundary for a mixture of civic, community, leisure, health and educational uses as well as high-density residential redevelopment under Policy KP1 of the Pre-Submission Plan.	Policy KP1 Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ⁹² : Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
2	Allocation - UE43	Havant Borough Council (HBC) Policy HB1 Havant & Bedhampton Housing Allocations ⁹³ The application site is located within the adopted Havant Borough Allocations Plan for 203 homes (policy HB1 ref UE3b) ⁹⁴ .	Havant Garden Centre, Bartons Road	The land allocation is located immediately east of the railway line, south of Bartons Road; - 1.7 km south east of the reservoir site; and, - 1.2 km south east of the pipeline corridor	Residential dwellings of 49 units	Insufficient information available to inform assessment. This allocation / policy is not included in the Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ⁹⁵ . - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
3	Allocation - H69	Havant Borough Council (HBC)		A brownfield site on the site of the former Oak Park School. - 1.8 km south of the reservoir site; - 650 m east of the pipeline corridor	Site also identified in the Havant Borough Draft Local Plan 2017-2036 (2019). To create a community health campus with a nursing home, extra care accommodation and a replacement health centre New homes including affordable and extra care housing.	Insufficient information available to inform assessment. This allocation / policy is not included in the Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ⁹⁶ . - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely	No

⁹² <https://www.havant.gov.uk/localplan/regulatory-requirements>
⁹³ <https://www.havant.gov.uk/sites/default/files/documents/Adopted%20Allocations%20Plan%20July%202014%20-%20Copy.pdf>
⁹⁴ <https://www.havant.gov.uk/sites/default/files/documents/Land%20South%20of%20Barton%20Road%20Havant%20briefing%20note.pdf>
⁹⁵ <https://www.havant.gov.uk/localplan/regulatory-requirements>
⁹⁶ <https://www.havant.gov.uk/localplan/regulatory-requirements>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	
4	Allocation - L119 / H37 Site also identified in the Havant Borough Draft Local Plan 2017-2036 (2019) H37	Havant Borough Council (HBC) Policy LP1 Leigh Park Housing Allocations (Sites)	Dunsbury Way 0.36 ha	The land allocation is located on Dunsbury Way and formerly part of the redevelopment of the Procter and Gamble factory site. - 865 m south west of the reservoir site - 170 m north west of the pipeline corridor	Residential dwellings of 72 units.	Proposal H37: Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ⁹⁷ : Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA - <u>Impact pathways</u> : - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
5	Allocation - L145 / H36	Havant Borough Council (HBC) Policy LP1 Leigh Park Housing Allocations (Sites)	SSE Offices Site, Bartons Road 1.72 ha	The land allocation is a brownfield site located in a prominent location on the corner of Petersfield Road and Bartons Road. - 1.2 km south of the reservoir site - 360 m east of the pipeline corridor	Residential dwellings of 90 units; Mixed use development of around 45 dwellings and a builder's yard	Proposal H36: Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ⁹⁸ : Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways</u> : - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely	No

⁹⁷ <https://www.havant.gov.uk/localplan/regulatory-requirements>
⁹⁸ <https://www.havant.gov.uk/localplan/regulatory-requirements>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	
6	Allocation - UE6a / H34	Havant Borough Council (HBC); Policy LP1 Leigh Park Housing Allocations (Sites)	Cabbagefield Row 3.86 ha	The land allocation is an open field to the north of the existing built up Warren Park area of Leigh Park. - immediately west of the reservoir site; - 850 m south east of the pipeline corridor;	Residential dwellings of 116 units. Site also identified in the Havant Borough Draft Local Plan 2017-2036 (2019). Pre app. discussions underway. Emerging allocation (H36) is for 80 units.	Proposal H34: Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes)⁸⁹: Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
7	Allocation - BD65 / H37	Havant Borough Council (HBC); Policy LP3 Leigh Park Mixed Use Allocations	Land South of Fulflood Road, 0.74 ha	The land allocation is located Brownfield site left over from the redevelopment of Procter and Gamble. - 830 m south of the reservoir site - 85 m north of the pipeline corridor	Shovel ready site available for redevelopment that could provide 1,300 square metres of new manufacturing and/or warehousing floorspace with between 18 and 36 jobs	Proposal H37: Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes)⁸⁰: Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-	No

⁸⁹ <https://www.havant.gov.uk/localplan/regulatory-requirements>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	
8	Allocation - L25 / H45	Havant Borough Council (HBC) Policy LP3 Leigh Park Mixed Use Allocations	Strouden Court, 1.88 ha	The land allocation is located to the east of the site lies the Warren Park Primary School. - 280 m west of the reservoir site; - 720 m west of the pipeline corridor	Site also identified in the Havant Borough Draft Local Plan 2017-2036 (2019). Regenerate this local hub of community facilities · New homes including affordable housing (40 dwellings)	Proposal H45: Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ⁸⁰ : Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
9	Allocation - L83 / H38	Havant Borough Council (HBC) Policy LP3 Leigh Park Mixed Use Allocations	Riders Lane Allotments	The land allocation is located North east of the Hermitage Stream. - 1.3 km south west of the reservoir site - Within the pipeline corridor	Site also identified in the Havant Borough Draft Local Plan 2017-2036 (2019). Provide more useable allotment plots elsewhere with better facilities, drainage etc. · New homes including affordable housing (65 dwellings)	Proposal H38: Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ¹⁰⁰ : Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-	No

¹⁰⁰ <https://www.havant.gov.uk/localplan/regulatory-requirements>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	
10	Allocation - L138 / Policy KP4	Havant Borough Council (HBC) Policy LP3 Leigh Park Mixed Use Allocations	Leigh Park Centre	The land allocation is Leigh Park District Centre. - 850 m south of the reservoir site; - 50 m east of the pipeline corridor	Opportunity to regenerate and improve district centre · New homes including affordable housing (62 dwellings)	Policy KP4: Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ⁸³ : Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
11	Allocation - W126 / APP APP/19/00224.	Havant Borough Council (HBC) Policy WA1 Waterlooville Housing Allocations	Padnell Grange, 2.55 ha	The land allocation is situated on the edge of Cowplain. To the immediate north is Hazleton Wood and Waterlooville Golf Club course is located to the east. - 720 m west of the reservoir site, across the A3(M); - 2.4 km north of the pipeline corridor	Residential dwellings of 84 units. Site also identified in the Havant Borough Draft Local Plan 2017-2036 (2019)	Natural England's Response to APP APP/19/00224, Date: 03 April 2019 ref: 276698 ¹⁰¹ <u>Solent Recreational Disturbance</u> A small portion of the site is within 5.6km of the Chichester and Langstone Harbours SPA. Increases in residential accommodation within 5.6km of the Solent SPA's has been shown to lead to disturbance of the protected birds which use these areas. Applications are therefore required to mitigate against adverse effects from recreational disturbance on the Solent SPA sites, as agreed by the Solent Recreation Mitigation Partnership (SRMP). Provided that the applicant is complying with the SPD or policy, Natural England are satisfied that the applicant has mitigated against the potential adverse effects of the development on the integrity of the European site, and has no objection to this aspect of the application. - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-	No

¹⁰¹ https://planningpublicaccess.havant.gov.uk/online-applications/files/8F7D371857E4EE37A6EA267909B95467/pdf/APP_19_00224-CONSULTEE_RESPONSE_-_NATURAL_ENGLAND-1167084.pdf

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	
12	Allocation - KS3 APP/19/00224.	Havant Borough Council (HBC) Policy LP3 Leigh Park Mixed Use Allocations	Leigh Park Centre	Land South of Bishopstoke road. - 850 m south of the reservoir site; - 50 m east of the pipeline corridor	Application consists development of Greywell Precinct, Park Parade area, Somborne Drive area, Dunsbury way area,	Havant Borough Council Planning Portal APP/19/00224, Ecological Appraisal (August 2017) ¹⁰² : 8.2.2 Although the proposed development is extremely unlikely to impact the habitats for which the SAC, SSSI and Ramsar are designated, in view of the scale of the proposed development, its distance from the designated sites and the nature of the coastal/ estuarine habitats, consideration should be given to the potential for additional recreational pressure arising from the proposed development to result in increased disturbance on the bird populations for which the Chichester and Langstone Harbour SPA, SSSI and Ramsar are designated. Although any such increase in recreational pressure is unlikely to result in risk of a significant effect in isolation, in view of the limited scale of the development in the context of that already present in the vicinity of the 5810ha SPA. 8.2.3 Even though additional recreational pressure arising from the proposed development would not be expected to result in risk of a significant effect on the SPA in isolation, in accordance with Havant Borough Council guidance (HBC, 2013) ⁴ in order to avoid risk of cumulative effect on the SPA any net gain in residential development at the site will need to be accompanied by financial contribution towards the Solent Recreation Disturbance Project. This project implements a range of avoidance and mitigation measures to prevent adverse effects of new development on the bird populations for which the SPA is designated. - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
13	Allocation - KS7 /emerging KP8	Havant Borough Council (HBC)		Land North-west of B2129 Petersfield road, Havant College. - 1.9 km south of the reservoir site;	Development which creates new floorspace at Havant and South Downs College. The development will provide or enable new teaching space and educational facilities	Policy KP8: Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ¹⁰³ : Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects:	No

¹⁰² https://planningpublicaccess.havant.gov.uk/online-applications/files/13D13E23A318E6B691467BCB14165E8B/pdf/APP_19_00224-ECOLOGICAL_APPRAISAL-1162272.pdf
¹⁰³ <https://www.havant.gov.uk/localplan/regulatory-requirements>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
				- 110 m east of the pipeline corridor		- Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	
14	Allocation - H21	Havant Borough Council (HBC)	Residential Development (Land west of Havant Crematorium)	Land to the West of Havant Crematorium Residential development of about 90 dwellings	The site lies to the north of Bartons Road, immediately west of Havant Crematorium. The site benefits from outline planning permission	Insufficient information available to inform assessment. This allocation / policy is not included in the Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes)⁶⁸. - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
15	Allocation - H27 (Emerging allocation (H25)).	Havant Borough Council (HBC)	Residential Development (Helmsley House)	located on the south side of Bartons Road. It is in close proximity to the Southleigh Strategic Site. - 2.1 km south east of the reservoir site; - 1.3 km south east of the pipeline corridor	Residential development of about 15 dwellings	Proposal H25 / H27- Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes)⁶⁹: Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely	No

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	
16	Allocation - H35	Havant Borough Council (HBC)	The Former Colt	The site lies in a prominent location on the corner of Bartons Road and New Lane at the gateway to the New Lane industrial area. It is located immediately north of Marsh Plant Hire - 750 m west of the reservoir site; - 1.2 km west of the pipeline corridor	Mixed use development of around 45 dwellings and a builders yard	Proposal H35- Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes)¹⁰⁴: Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
17	Allocation - H38	Havant Borough Council (HBC)	Land at Riders Lane	This site is located in a prominent location on the corner of Petersfield Road and Bartons Road. - 1.2 km south of the reservoir site - 360 m east of the pipeline corridor	Mixed-use development of about 560 dwellings, a convenience store, open space and community centre with sporting facilities	Proposal H38- Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes)¹⁰⁵: Proposal could have a potential effect on the following International sites, either alone or in combination with other plans or projects: - Solent Maritime SAC - Chichester & Langstone Harbours SPA / Ramsar - Solent and Dorset Coast SPA <u>Impact pathways:</u> - Recreational disturbance - Air Quality - Water Resources - Nutrient Neutrality - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely	No

¹⁰⁴ <https://www.havant.gov.uk/localplan/regulatory-requirements>
¹⁰⁵ <https://www.havant.gov.uk/localplan/regulatory-requirements>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	
18	Allocation - H41	Havant Borough Council (HBC)		Campdown is located on the northern slope of Portsdown Hill as it slopes down towards Crookhorn. It is also immediately south of the South Downs Campus of Havant and South Downs College (HSDC) and adjacent to the A3(M). - 2.5 km west of the reservoir site, opposite side of A3(M); - 4.4 km north west of the reservoir site.	Residential development of about 40 dwellings	Insufficient information available to inform assessment. This allocation / policy is not included in the Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ⁹² - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
19	Allocation - H48	Havant Borough Council (HBC)		The site has an area of 1.3 ha and is currently used as a golf club practice ground with the south of the site containing mature woodland. Anvil Close and Farriers Way serve the properties directly adjacent to the west of the site with Waterlooville Golf Course bounding the remainder of the site. - 300 m west of the reservoir site, opposite side of A3(M);	Mixed use development of around 45 dwellings and a builders yard	Insufficient information available to inform assessment. This allocation / policy is not included in the Havant Borough Local Plan Habitats Regulations Assessment, June 2020 (in respect of the Havant Borough Local Plan Pre-submission version with changes) ¹⁰⁶ . - Through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No

¹⁰⁶ <https://www.havant.gov.uk/localplan/regulatory-requirements>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
				- 2.1 km north west of the pipeline corridor			
Havant Borough Council Application							
20	Permission - APP/12/00338	Havant Borough Council (HBC)	Application for the Dunsbury Hill Farm Strategic Delivery Site (Policy CS18)	Dunsbury Hill Farm, Park Lane, Cowplain, Waterlooville - 230 m west of the reservoir site; - 1.2 km south north west of the pipeline corridor	Hybrid planning application comprising a part outline application relating to development for employment uses and a hotel with conference facilities and a part detailed application for a new access link road with bus gate to Woolston Road; together with landscaping, infrastructure and associated works	Atkins. 2011. Volume 3 – Appendix 17 , Dunsbury Hill Farm, Habitats Regulations Assessment: Stage 1 – Screening, September 2011 ¹⁰⁷ : There are no likely significant effects on the international sites considered in this Stage 1 - Screening alone or in combination due to construction and/or operation of the Dunsbury Hill Farm development, and that there is therefore no requirement for any further stages of the HRA process (i.e. Stage 2 - Appropriate Assessment) to be completed.	No
21	Permission - APP/17/00736	Havant Borough Council (HBC)		Sir George Staunton Country Park, Middle Park Way, Havant PO9 5HB - 55 m south of the reservoir site; - Within the pipeline corridor	Restoration of historic path landscape, including refurbishment of follies, conversion of coach house and stable block to create visitors and volunteer facilities and associated works	Based on the extent of the Scheme , distance from statutory sites and limited information available it is concluded that there are no in-combination LSE's Information found on HBC planning portal included: HCC Decision notice June (2018) ¹⁰⁸ ; The measures as detailed in 5.4 and 5.5 of the Ecology Survey Report (RPS, February 2018) shall be implemented in full. Thereafter, the compensation measures shall be permanently maintained and retained in accordance with the approved details, unless otherwise approved in writing by the Planning Authority or as amended by a European Protected Species Licence. Reason: To ensure the favourable conservation status of bats in accordance with Policy CS11 of the Havant Local Plan and the Conservation of Habitats and Species Regulations 2017.	No
22	Permission - APP/17/00735	Havant Borough Council (HBC)	Staunton Country Park	Sir George Staunton Country Park,	Conversion of coach house and stable block to create visitor and volunteer facilities and construction of new	Insufficient Information available on HBC planning portal (no ecological documents available) ¹⁰⁹	No

¹⁰⁷ https://planningpublicaccess.havant.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=DCAPR_227407&documentOrdering.orderBy=date&documentOrdering.orderDirection=ascending

¹⁰⁸ https://planningpublicaccess.havant.gov.uk/online-applications/files/A559EA9E21519477A2BF089F07E773B3/pdf/APP_17_00736-DECISION_NOTICE-1121801.pdf

¹⁰⁹ https://planningpublicaccess.havant.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=DCAPR_239838

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
				Middle Park Way, Havant PO9 5HB. - 55 m south of the reservoir site; - Within the pipeline corridor	visitor's car park on former Beacon Nursery site and associated works		
23	Permission - APP/17/00049	Havant Borough Council (HBC)	Trosnant Infant and Junior School,	Trosnant Infant and Junior School, Stockheath Lane, HAVANT PO9 3BD - 1.6 km south of the reservoir site; - 55 m east of the pipeline corridor	The project consists of a 1 classroom teaching block to the north east of existing schools, a 4 classroom teaching block to south west of the existing schools, some internal refurbishment, the adaptation and improvement of the existing external play areas, the creation of a new MUGA and the expansion of the existing car park	Insufficient Information available on HBC planning portal (no ecological documents available) ¹¹⁰	No
24	Permission - APP/16/00063	Havant Borough Council (HBC)	Staunton Country Park,	Storey Gardens, Sir George Staunton Country Park, Middle Park Way, Havant, Hampshire, PO9 5HB - 650 m south of the reservoir site. - 390 m east of the pipeline corridors	Proposal for a change of use from a paddock to a temporary overflow car park		
25	Application - no ref number (NSIP)	Portsmouth City Council (PCC) / Hampshire County Council	Land and sea between Normandy and Lovedean substation in Portsmouth.	Land and sea between Normandy and Lovedean substation in Portsmouth.	AQUIND Interconnector 2000MW subsea and underground High Voltage Direct Current power transmission link between Normandy and Lovedean substation in Portsmouth.	Aquind Limited Aquind Interconnector Habitats Regulations Assessment Report - Volume 3 - Appendix 4: HRA Marine Consultation Responses (Pins Ref.: En020022 Document: 6.8.1 Date: 14 November 2019) ¹¹¹ No significant adverse effect on site integrity can be concluded, either from the Proposed Development alone, or in combination with other plans or projects, for the Chichester and Langstone Harbours SPA/Ramsar site, Solent Maritime SAC and Solent and Dorset Coast Marine SPA.	No
East Hampshire District Council Allocations							
26	Allocation - SA33	East Havant District Council	Land East of Horndean, Rowlands Castle	Land south of B2149 Havant Road near Rowlands	The 62 ha site is allocated for a mixed-use development to include: • about 850 dwellings;	Awaiting update HRA as per comments in the East Hampshire District Council Planning Committee Report of The Director of Regeneration And Place Applications To Be Determined By	No

¹¹⁰ https://planningpublicaccess.havant.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=DCAPR_241315

¹¹¹ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020022/EN020022-000945-6.8.1%20HRA%20-%20Vol%201%20-%20Habitats%20Regulations%20Assessment%20Report%20Main%20Text.pdf>

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
					• a Care Village including independent living units (about 100 units) and extra care provision for older people (60-bed care home); • land for about 2 ha industrial (B2) and business use (B1); and • a new primary school and land for its future expansion.	The Council As The Local Planning Authority 11th June, 2020¹¹²; Please note that recent case law ("Sweetman II") outlines that mitigation measures should not be assessed through a Habitats Regulations Assessment (HRA) to 'screen out' impacts at the stage of considering Likely Significant Effects (LSE) rather avoidance/mitigation measures should be considered through an Appropriate Assessment. Therefore, where impacts are identified as having a LSE, the HRA will need to move on to the Appropriate Assessment stage where avoidance/mitigation measures can be fully assessed. Discounted from Habitats Regulations Assessment of East Hampshire's Regulation 18, Local Plan, East Hampshire District Council, Project number: 60572250, December 2018, Appendix B Screening Table (Test of Likely Significant Effects) of Allocations¹¹³.	(refer to site number refs 30 - 34)
27	Allocation - SA39	East Hampshire District Council	Land at Oaklands House, Rowlands Castle	Near Durrants	Residential (Land at Oaklands House). Approx. 50 dwellings.	The Appropriate Assessment found that site allocations SA39, SA40 could have significant effects on The Solent Maritime SAC, Chichester and Langstone Harbour SPA and Ramsar Site through recreational pressure. It was determined that the effects could be avoided by rewording and subsequent adherence to Policy S22 Solent Special Protection Areas; aims to protect the integrity of Solent European sites. It was concluded that if the suggested mitigation measures of Policy S22 are adhered to, Plan development will have not adversely affected the integrity of Solent European sites through increased recreational pressure¹¹⁴ It is concluded that, through the application of plan-led strategic and proposal-specific mitigation measures, the Pre-submission Local Plan would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan	No
28	Allocation -SA40	East Hampshire District Council	Land east of Bartons Road	Land east of Bartons Road	Between 50 and 60 dwellings		No
29	Allocation- SA41	East Hampshire District Council	Land South of Little Leigh Farm	Residential (Land South of Little Leigh Farm)	Between 100 and 115 dwellings.		No
East Hampshire District Council Applications							
30	Permission - 55562/001	East Hampshire District Council	Land East of Horndean	Land East of Horndean. 300 m north of the reservoir site. 2.5 km north of the pipeline corridor	700 dwellings, approximately 1.7 Ha of employment land, a Local Centre (including local retail, a primary school and community facilities), a Care Village, playing pitches, a cricket pavilion (including associated access and parking), allotments (including associated building and car parking), acoustic bunds and ecological buffers together with internal access network (including footpaths and	Approved in 2016. No HRA found on the East Hampshire District Council planning portal. None of the Statutory sites considered in this assessment are within the EcZOI of this Scheme. Buster Hill SAC IS .	No

¹¹² East Hampshire District Council Planning Committee Report Of The Director Of Regeneration And Place Applications To Be Determined By The Council As The Local Planning Authority 11 June 2020 Section 1 – Schedule Of Application Recommendations

¹¹³ <https://www.easthants.gov.uk/sites/default/files/documents/Habitats%20Regulations%20Assessment%20of%20East%20Hampshire%20Reg.%2018%20Local%20Plan.pdf>

¹¹⁴ <https://www.easthants.gov.uk/sites/default/files/documents/Habitats%20Regulations%20Assessment%20of%20East%20Hampshire%20Reg.%2018%20Local%20Plan.pdf> Section 7.5 Appropriate Assessment

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
					cycleways), drainage works, associated landscaping and open space (including play areas).		
31	Application - 55562/005	East Hampshire District Council	Land East of Horndean	Land East of Horndean. 300 m north of the reservoir site. 2.5 km north of the pipeline corridor	Residential-led (C3) mixed-use development of the site with up to 800 dwellings, up to 2ha of employment land (uses B1 and B2), a Local Centre (including: local retail (food and non-food A1); financial and professional services (A2); restaurants, cafés, and drinking establishments (A3 and A4), hot food takeaways (A5), together with a primary school (D1) and community facilities (D2)), informal and formal open space, allotments, and acoustic bunds, together with associated drainage, utilities and all other associated and necessary infrastructure.	Assumed none based on the nutrient budget calculation updates EHDC, Part 1, Planning Committee report, 11 th June, 2020 ¹¹⁵ : The application is supported by information for a habitat regulations assessment (EPR November 2018) includes a nutrient budget calculation which calculates the development will produce an annual nitrogen contribution of 50.6 kg. It concludes the development will be nitrogen neutral subject to adoption of the higher water efficiency standard of 110L and provision of surface water attenuation features including creation of at least 920m ² of wetland habitat. It is Natural England's advice that design information for the proposed wetland and Sustainable Urban Drainage System (SUDs) as well as detailed mitigation management evidence including a costed nutrient management plan with respect to the above proposed mitigation measures will need to be provided prior to any permission and its implementation and ongoing maintenance secured by an appropriately worded planning condition(s) attached to any permission. Please note that recent case law ('Sweetman II') outlines that mitigation measures should not be assessed through a Habitats Regulations Assessment (HRA) to 'screen out' impacts at the stage of considering Likely Significant Effects (LSE) rather avoidance/mitigation measures should be considered through an Appropriate Assessment. Therefore, where impacts are identified as having a LSE, the HRA will need to move on to the Appropriate Assessment stage where avoidance/mitigation measures can be fully assessed. You may also want to seek your own legal advice on any implications of this recent ruling for your decisions. Natural England advises that it is a matter for your Authority to decide whether an appropriate assessment of this proposal is necessary in light of this ruling. In accordance with the Conservation of Habitats & Species Regulations 2017, Natural England must be consulted on any appropriate assessment your Authority may decide to make.	No
32	Application - 55562/006	East Hampshire District Council	Land East of Horndean	Land East of Horndean. 1.1 km north of the reservoir site; and,	85 age restricted dwellings (aged 55 years and above) with associated infrastructure, formal and informal open space and access from Rowlands Castle Road following the demolition of all Buildings and removal of hardstanding (Access to be considered in detail)	Land north of Rowlands Castle Road, Horndean 55562/006 Technical Response to Ecology Consultees, November 2019 ¹¹⁶ : Based on the plans submitted, Natural England considers that the proposed development will not have significant adverse	No

¹¹⁵ East Hampshire District Council Planning Committee Report Of The Director Of Regeneration And Place Applications To Be Determined By The Council As The Local Planning Authority 11 June 2020 Section 1 – Schedule Of Application Recommendations

¹¹⁶ https://planningpublicaccess.easthants.gov.uk/online-applications/files/D48CE3D485E49C42D4ECCD005A20B4F/pdf/55562_006-ECOLGY_TECHNICAL_NOTE-1032590.pdf

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
				3.6 km north of the pipeline corridor		impacts on statutorily protected nature conservation sites (Natural England 2019)¹¹⁷ Natural England Response to Current Application 1.1 The application was supported by an Information for Habitats Regulations Assessment (IFHRA; EPR, 2019) report, within which water quality effects upon internationally designated nature conservation sites in the Solent were assessed with reference to Natural England's then extant working draft 'Methodology to calculate the nitrogen budget for development in the Solent' (August 2018). Application of this methodology indicated that the proposed development would generate a net annual contribution of 48.2kg of nitrogen. 1.2 Natural England's statutory consultation response of 25 April 2019 advised that further information was required in relation to the water quality impact pathway, specifying that details of measures required to mitigate or offset the projected nutrient nitrogen contribution should be submitted to a Hampshire County Council (HCC) ecologist. The application is supported by a Nitrogen Budget which sets out the proposals will result in a positive contribution of 52.3 Kg/TN/year. Natural England is aware that your authority has adopted an interim strategy using Grampian conditions to address nutrient impacts from developments currently in the planning system and we have been working with the Council to develop this approach. It is noted the applicant proposes mitigation to be secured through a Grampian condition, requiring the mitigation package to be agreed, provided to the Council and implemented prior to the occupation of the development. Please consult us on the appropriate assessment¹¹⁸.	
33	Application - 55562/007	East Hampshire District Council	Land East of Horndean	Land East of Horndean 1.1 km north of the reservoir site; and, 3.6 km north of the pipeline corridor	Development of a care village comprising a 60-bed care home, a village care centre (VCC) incorporating up to 60 no. care-assisted living apartments and up to 60 no. extra care units comprising bungalows and apartments, with associated parking, landscaping and sustainable drainage	<u>Land East of Horndean Report to Inform Habitats Regulations Assessment Stage 1 and Stage 2. WYG March, 2020¹¹⁹</u> The Stage 2: Appropriate Assessment found that with the application of mitigation for nutrient outputs, there is no potential for these pathways identified at Stage 1 to affect the integrity of any European site. As such, it is considered that the 'Competent Authority' can permit the proposed development and does not require Stage 3 or Stage 4 assessments to be undertaken, as described in Section 2.1 EHDC – Ecology Technical Note, January, 2020¹²⁰:	No

¹¹⁷ https://planningpublicaccess.easthants.gov.uk/online-applications/files/D48CEF3D485E49C42D4ECCD005A20B4F/pdf/55562_006-ECOLOGY_TECHNICAL_NOTE-1032590.pdf

¹¹⁸ https://planningpublicaccess.easthants.gov.uk/online-applications/files/5BD4521345B8D7EE51BD9F2B2B2AA7C8/pdf/55562_006-NATURAL_ENGLAND_S_COMMENTS-1042687.pdf

¹¹⁹ https://planningpublicaccess.easthants.gov.uk/online-applications/files/0C6AF1A2CF20F813C3037D0E19CD4CBA/pdf/55562_007-HRA_ISSUE_250320-1069389.pdf

¹²⁰ https://planningpublicaccess.easthants.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=EHANT_DCAPR_244917

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						Land north of Rowlands Castle Road, Horndean 55562/006 Technical Response to Ecology Consultees, November 2019¹²¹; <u>Natural England Response to Applications for Development of Adjacent Land</u> 2.1 The application site lies immediately adjacent to another proposed development site to the north of Rowlands Castle Road, both sites forming part of the Local Plan HN1 Allocation. This adjacent site has recently been the subject of two simultaneous and parallel planning applications (55562/007 and 55562/008) presenting alternate versions of a proposed 'care village' development. 2.3 The parallel applications do not appear to be supported by the submission of a nutrient budget calculation or other form of information for Habitats Regulations Assessment. Both applications were reviewed by Natural England in July 2019, separately and by two different advisors – each of whom was able to conclude that the respective application would not result in significant adverse effects on statutorily protected nature conservation sites.	
34	Application - 55562/008	East Hampshire District Council	Land East of Horndean	Land East of Horndean 1.1 km north of the reservoir site; and, 3.6 km north of the pipeline corridor	60-bed care home and up to 50 no. extra care bungalows and apartments with associated parking, landscaping and sustainable drainage	EHDC – Ecology Technical Note, January, 2020¹²²; Land north of Rowlands Castle Road, Horndean 55562/006: Technical Response to Ecology Consultees, November 2019¹²³; <u>Natural England Response to Applications for Development of Adjacent Land</u> 2.1 The application site lies immediately adjacent to another proposed development site to the north of Rowlands Castle Road, both sites forming part of the Local Plan HN1 Allocation. This adjacent site has recently been the subject of two simultaneous and parallel planning applications (55562/007 and 55562/008) presenting alternate versions of a proposed 'care village' development. 2.3 The parallel applications do not appear to be supported by the submission of a nutrient budget calculation or other form of information for Habitats Regulations Assessment. Both applications were reviewed by Natural England in July 2019, separately and by two different advisors – each of whom was able to conclude that the respective application would not result in significant adverse effects on statutorily protected nature conservation sites.	No

¹²¹ https://planningpublicaccess.easthants.gov.uk/online-applications/files/D48CEF3D485E49C42D4ECCD005A20B4F/pdf/55562_006-ECOLOGY_TECHNICAL_NOTE-1032590.pdf

¹²² https://planningpublicaccess.easthants.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=EHANT_DCAPR_244917

¹²³ https://planningpublicaccess.easthants.gov.uk/online-applications/files/D48CEF3D485E49C42D4ECCD005A20B4F/pdf/55562_006-ECOLOGY_TECHNICAL_NOTE-1032590.pdf

Site reference number (as shown on appended plans)	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
-	APP/16/01283	Havant Borough Council (HBC)	Leigh Park Nurseries,	Leigh Park Nurseries, Petersfield Road, Havant PO9 5HB)	Retention on site of a Temporary Double Classroom - Modular Building	Planning statement ¹²⁴ : Retaining the building for a further period raises no ecology issues. The building currently sits on an existing concrete slab where a previous building was removed, there is no vegetation or environmental risk. Retaining the building for a further period raises no environmental protection issues	No
-	APP/16/00492 APP/17/00980	Havant Borough Council (HBC)	Development Land Allocations, Havant Borough Adopted Local Plan 2014		Residential development of 25No. 2 to 2.5 storey 3 bed houses, 5No. 3 storey 4 bed houses and 8No. 2 bed apartments (Approved 17.02.17) APP/17/00980 is Application for non-material change to Planning Permission APP/16/00492 Ecology Report: ¹²⁵ Located within 5.6 km of the Solent European sites with a potential of impact from recreational pressure. In order to mitigate for the likely increases in residential pressure the Solent Disturbance Mitigation Project SDMP has been introduced ¹²⁶ It was concluded that, SDMP mitigation alone would provide sufficient assurance that no development could conceivably take place that would potentially affect the SPA without first ensuring that any impacts are understood, and an appropriate level of mitigation is secured through financial contribution towards the Solent Recreation Mitigation Partnership (SRMP).	It is concluded that, through the application of plan-led strategic SDMP / Solent Recreation Mitigation Partnership (SRMP). and proposal-specific mitigation measures, the Project would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No
APP/19/00612		Havant Borough Council (HBC)	70 High Lawn Way	70 High Lawn Way, Havant, PO9 5BT.	Erection of 1No. 2 bed dwelling attached to 70 High Lawn Way with associated parking. Location: 70 High Lawn Way, Havant, PO9 5BT. Located within 5.6 km of the Solent European sites with a potential of impact from recreational pressure. <u>Natural England Consultation on HRA</u> ¹²⁷ : The Appropriate Assessment has taken recreational disturbance and mitigation via the SDMP / SRMP into consideration, therefore, providing the appropriate mitigation is secured by any approval, Natural England are satisfied that the applicant has mitigated against the potential adverse effects of the development on the integrity of the European site, and has no objection to this aspect of the application.	It is concluded that, through the application of plan-led strategic SDMP / Solent Recreation Mitigation Partnership (SRMP). and proposal-specific mitigation measures, the Project would not result in likely significant effects on the European sites within the Plan's zone of influence and that European site integrity would not be impacted as a result of the Plan.	No

¹²⁴ https://planningpublicaccess.havant.gov.uk/online-applications/files/1FBAAA72891ECF0DAD273F29B13C4741/pdf/APP_16_01283-PLANNING_STATEMENT-1004381.pdf

¹²⁵ https://planningpublicaccess.havant.gov.uk/online-applications/files/E8D13E94CF8AA5971809EA1E9758E461/pdf/APP_16_00492-ECOLOGICAL_SURVEY-964930.pdf

¹²⁶ In line with Council approved Policy DM24 criterion a) of the Local Plan (Allocations): Submission Version, the delegated approval of a contribution of £172 per dwelling, plus legal, administrative and monitoring fees, in accordance with the findings of the Solent Disturbance Mitigation Project and the recommendations of the Solent Special Protection Area (SPA) Interim Planning Framework. The contribution will be applied to all planning applications for one or more new dwellings; <https://havant.moderngov.co.uk/ieDecisionDetails.aspx?id=218>

¹²⁷ https://planningpublicaccess.havant.gov.uk/online-applications/files/746F368244781516F92FA15CC672CEC8/pdf/APP_19_00612-CONSULTEE_RESPONSE_-_NATURAL_ENGLAND-1212490.pdf

Table 7-2 - Projects considered for in combination effects/residual impacts on qualifying bat species of the Sussex bat SACs: Singleton from planning applications within 3 km of the reservoir site

Site reference number	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
Havant Borough Council Allocations							
11	Allocation - W126 / APP APP/19/00224.	Havant Borough Council (HBC) Policy WA1 Waterloooville Housing Allocations	Padnell Grange, 2.55 ha	The land allocation is situated on the edge of Cowplain. To the immediate north is Hazleton Wood and Waterloooville Golf Club course is located to the east. - 720 m west of the reservoir site, across the A3(M); - 2.4 km north of the pipeline corridor	Residential dwellings of 84 units. Site also identified in the Havant Borough Draft Local Plan 2017-2036 (2019)	Bat Report October 2018 ¹²⁸ : Bechstein's bat not recorded. No LSE's to conservation objectives of Bechstein's bat population	No
Havant Borough Council Applications							
2	APP 55562/001	East Hampshire District Council (EHDC) Local Plan (HN1) Bat Assessment, ECOSA, 2018	Development Land East of Horndean, Rowlands Castle Road, Horndean, Waterloooville	900 m north-west	Up to 800 dwellings, a primary school, local centre, employment, open space, and associated infrastructure	After mitigation, no significant residual impact is anticipated (EPR, 2018 ¹²⁹)	No
21 & 22	APP/17/00736 APP/17/00735	Havant Borough Council (HBC)			APP/17/00736: Sir George Staunton Country Park, Middle Park Way, Havant, PO9 5HB Restoration of historic path landscape, including refurbishment of follies, conversion of coach house and stable block to create visitor and volunteer facilities and associated works at Sir George Staunton Country Park (Listed Building Consent). APP/17/00735: Change to the pedestrian crossing layout at Sir George Staunton Country Park, Middle Park Way, Havant PO9 5HB	No Ecology report available on HBC planning portal for determination of bat impacts Planning Support Statement ¹³⁰ Evidence of bats, badgers, and several species of reptiles has been identified by the survey team and there is a good understanding of the measures that are necessary to ensure the development is properly undertaken with due regard to the wildlife that inhabits this site. The Ecology Survey Report submitted with this application explains in detail the range of surveys that have been undertaken to assess the site and the mitigation that is proposed	No
East Hampshire District Council - Applications							

¹²⁸ https://planningpublicaccess.havant.gov.uk/online-applications/files/E2F52E2C0814F5A6E4C8067FAA2366D9/pdf/APP_19_00224-BAT_SURVEY_REPORT-1162234.pdf

¹²⁹ EPR, 2018. Land East of Horndean, Technical Appendix F.6 - Bats, s.l.: Ecological Planning and Research

¹³⁰ https://planningpublicaccess.havant.gov.uk/online-applications/files/4C5BA35C6B2F0C3F852C58182B2733A6/pdf/APP_17_00736-PLANNING_STATEMENT-1056099.pdf

Site reference number	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
30	Permission - 55562/001	East Hampshire District Council	Land East of Horndean	Land East of Horndean 300 m north of the reservoir site. 2.5 km north of the pipeline corridor	700 dwellings, approximately 1.7 Ha of employment land, a Local Centre (including local retail, a primary school and community facilities), a Care Village, playing pitches, a cricket pavilion (including associated access and parking), allotments (including associated building and car parking), acoustic bunds and ecological buffers together with internal access network (including footpaths and cycleways), drainage works, associated landscaping and open space (including play areas)	The proposed enhancement; to provide additional roosting opportunity is proposed to be located in Havant Thicket FE land. Havant Thicket is within the Havant Thicket reservoir Scheme Boundary. Compensation for the reservoir scheme in respect of Bechsteins' bat includes the installation of bat roosting boxes in Havant Thicket Woodland. Thus, in the absence of a joined-up compensation / enhancement approach, there is a potential in-combination effect to the conservation status of the Bechstein's bat population. Land East of Horndean - Environmental Statement, Volume 1 Chapter 6 – Ecology¹³¹: 6.6.70 Liaison with other stakeholders including the Forestry Commission will be undertaken to agree a bat box scheme offsite within The Holt (Stein Wood) / Havant Thicket to provide additional roosting opportunities for bats, including Bechstein's. It is considered that there is a lack of roosting opportunities within this habitat as Bechstein's bats are roosting within the Proposed Development Site but spend significant time foraging within the off-site woodland. Table 6.4 Assessment Summary and Residual Environmental Effects (Ecology) Enhancement Provision of 30 bat boxes within the proposed Site boundary. It is intended to work with other stakeholders in the surrounding area to install bat boxes within Stein Wood and Havant Thicket	Yes
31	Application - 55562/005	East Hampshire District Council	Land East of Horndean	Land East of Horndean 300 m north of the reservoir site. 2.5 km north of the pipeline corridor	Residential-led (C3) mixed-use development of the site with up to 800 dwellings, up to 2ha of employment land (uses B1 and B2), a Local Centre (including: local retail (food and non-food A1); financial and professional services (A2); restaurants, cafés, and drinking establishments (A3 and A4), hot food takeaways (A5), together with a primary school (D1) and community facilities (D2)), informal and formal open space, allotments, and acoustic bunds, together with associated drainage, utilities and all other associated and necessary infrastructure.	The proposed enhancement described in the Committee report (June 2020); to provide additional roosting opportunity is proposed to be located in Havant Thicket FE land. Havant Thicket is within the Havant Thicket Reservoir Scheme Boundary. Compensation for the reservoir scheme in respect of Bechsteins' bat includes the installation of bat roosting boxes in Havant Thicket Woodland. Thus, in the absence of a joined-up compensation / enhancement approach, there is a potential in-combination effect to the conservation status of the Bechstein's bat population. EHDC, Part 1, Planning Committee report, 11th June, 2020¹³²: (page 180) The proposals place a large urban development directly between known maternity roost and important foraging areas to the south at Havant Thicket. The scheme will also result in the loss of a significant part of the non-woodland foraging area for the local population with no proposed compensation. The principle bat corridor from the maternity to Havant Thicket is bisected by an access road. Further, the retained areas of woodlands and new habitat corridors will be subject to significant levels of new recreational access from the proposed development. The impacts of recreational pressure in relation to Bechstein's bat have been described in the 'Trowbridge Recreation Strategy and Visitor Surveys' (Footprint Ecology Nov 2018) (page 193): Given the proven presence of protected species including Bechstein's bats using the development site and the wider landscape it is essential that the mitigation strategy ensures that there are no significant	Yes

¹³¹ https://planningpublicaccess.easthants.gov.uk/online-applications/files/BEFD7BB188F26C14A574F1BB553AD06A/pdf/55562_001-CHAPTER_6_-_ECOLOGY-529764.pdf
¹³² East Hampshire District Council Planning Committee Report Of The Director Of Regeneration And Place Applications To Be Determined By The Council As The Local Planning Authority 11 June 2020 Section 1 - Schedule Of Application Recommendations

Site reference number	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						effects from the development in isolation, nor any in combination cumulative effects with other developments including HTWSR. (page 193): The developer proposes to deliver a biodiversity net gain through enhancement measures (Env.Statement Non-Tech Summary NTS64). This includes providing bird and bat boxes in The Holt and Havant Thicket woodland. This could potentially conflict with the strategy Portsmouth Water have already discussed with the Forestry Commission of placing bird and bat boxes in Havant Thicket in relation to the reservoir Scheme strategy. It is important that the developer's advisors take a collaborative approach and work with Portsmouth Water, Forestry Commission, Natural England and the LPA Ecologist to agree a robust strategy for such enhancements which does not conflict with the reservoir Scheme strategy.	
32	Application - 55562/006	East Hampshire District Council	Land East of Horndean	Land East of Horndean 1.1 km north of the reservoir site; and, 3.6 km north of the pipeline corridor	85 age restricted dwellings (aged 55 years and above) with associated infrastructure, formal and informal open space and access from Rowlands Castle Road following the demolition of all Buildings and removal of hardstanding (Access to be considered in detail)	Hampshire County Council – Senior Ecologist (Tristan Norton) response, August 2019¹³³: Each application is accompanied by an Ecological Appraisal (WYG, June 2019). Whichever option is finally chosen, the ecology report recommends that additional ecological surveys are required: these should be provided prior to determination. I would also suggest that some further analysis of the potential for foraging/commuting bats is provided. Whilst I would not expect e.g. radio-tracking or trapping surveys the surrounding land is known to support the very rare Bechstein's bat (as well as many other species). The application site sits between two areas with confirmed Bechstein's records and therefore it is not unreasonable to infer that foraging/commuting bats may occur. I am aware of detailed bat survey works conducted on the adjacent residential development site over the last couple of years: it would be productive to use these investigations to inform the assessment of impacts for this proposal. Detailed ecological mitigation, compensation and enhancement measures will be required. Given the adjacent development it will be essential to ensure that such measures are coherent with those on adjacent land and provide (e.g. through landscaping and lighting) areas of suitable habitat for identified ecological features.	Yes
33	Application - 55562/007	East Hampshire District Council	Land East of Horndean	Land East of Horndean 1.1 km north of the reservoir site; and, 3.6 km north of the pipeline corridor	Development of a care village comprising a 60-bed care home, a village care centre (VCC) incorporating up to 60 no. care-assisted living apartments and up to 60 no. extra care units comprising bungalows and apartments, with associated parking, landscaping and sustainable drainage	After mitigation, no significant residual impact is anticipated¹³⁴ <u>Bat Summary Report, April 2020</u>¹³⁵ It is considered likely that the site, in particular the central tree belt is used by foraging and commuting bats, and that this includes Bechstein's bat on occasion. Based on the proposed masterplans, significant impacts on foraging and commuting bats are not anticipated when taking into account proposed mitigation, and the development has the potential to result in an increase in suitable foraging habitat, and an improvement in connectivity for commuting. Due to the application being Outline only, with all matters reserved it is recommended that suitably worded conditions are used to require the submission and approval of detailed landscape (incorporating habitat creation for bats) and lighting proposals.	No

¹³³
¹³⁴ March 2020. Report summarising the ecological survey effort relating to bats: https://planningpublicaccess.easthants.gov.uk/online-applications/files/D021AA1841E2D5CFBCFD38D68C122545/pdf/55562_007-BAT_SUMMARY_REPORT-1065300.pdf
¹³⁵ https://planningpublicaccess.easthants.gov.uk/online-applications/files/D021AA1841E2D5CFBCFD38D68C122545/pdf/55562_007-BAT_SUMMARY_REPORT-1065300.pdf

Site reference number	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
34	APP/55562/008	East Hampshire District Council	Land East of Horndean	Land East of Horndean 1.1 km north of the reservoir site; and, 3.6 km north of the pipeline corridor	60-bed care home and up to 50 no. extra care bungalows and apartments with associated parking, landscaping and sustainable drainage	After mitigation, no significant residual impact is anticipated ¹³⁶ <u>Bat Summary Report, April 2020</u> ¹³⁷ It is considered likely that the site, in particular the central tree belt is used by foraging and commuting bats, and that this includes Bechstein's bat on occasion. Based on the proposed masterplans, significant impacts on foraging and commuting bats are not anticipated when taking into account proposed mitigation, and the development has the potential to result in an increase in suitable foraging habitat, and an improvement in connectivity for commuting. Due to the application being Outline only, with all matters reserved it is recommended that suitably worded conditions are used to require the submission and approval of detailed landscape (incorporating habitat creation for bats) and lighting proposals.	No
	APP/19/00007	Havant Thicket Bat Ecological Impact Bat Assessment, ECOSA, 2018 ¹³⁸	Camp Field (land to the west of Havant Crematorium), Bartons Road, Havant	1.6 kilometres, south-east	Development of approximately 72 properties with public open space and community orchard.	Residual impact was assessed as a significant positive impact for bats at a neighbourhood level (Ecology Co-op, 2018 ¹³⁹)	No
	APP 55023/001	Bat Assessment, ECOSA, 2018	Solar Farm Site – EIA screening opinion only, site not taken forward to formal planning application	Adjacent, northern boundary (north of Havant Thicket woodland)	Superseded by Land East of Horndean 55562/001	n/a	No
		Bat Assessment, ECOSA, 2018	APP 55406/002 Land Rear of, 191-211 Lovedean Lane, Horndean, Waterlooville	3 km north-west	Construction of 33 residential dwellings	No assessment of residual impacts is included within the Ecological Appraisal undertaken for the development (Lindsay Carrington Ecological Services, 2017 ¹⁴⁰). Mitigation measures for bats included within Ecological Appraisal. LPA comments on planning application recommend that ecological mitigation, compensation and enhancements measures are secured through condition, indicating the LPA is content that residual impacts will not occur.	No
	APP/17/00736	Bat Assessment, ECOSA, 2018	Staunton Country Park, Middle Park Way, Havant, PO9 5HB	135 m south-east	Conservation project, including woodland restoration	Woodland management works considered to result in a 'net enhancement of the quality of foraging habitat for bats' (RPS, 2017 ¹⁴¹). Limited impacts on roosting bats reported.	No
	GEN/18/01143	Bat Assessment, ECOSA, 2018	Land North of Long Copse Lane, Emsworth	2.8 km south-east	Construction of approximately 210 dwellings	Natural England consultation feedback provided to PW in response to a DAS review of this assessment (July 2020) stated in respect of this application: <i>'There are outstanding concerns in relation to the loss of Bechstein's bat foraging areas and impacts to roost sites. Land North of Long Copse Lane has significant residual effects on bats are likely at a site level and we aware that this project is still live'</i>	Yes

¹³⁶ March 2020. Report summarising the ecological survey effort relating to bats: https://planningpublicaccess.easthants.gov.uk/online-applications/files/C6AB61CC17D68F0E5585DB2E2B595FEC/pdf/55562_008-BAT_SUMMARY_REPORT-1065309.pdf

¹³⁷ https://planningpublicaccess.easthants.gov.uk/online-applications/files/D021AA1841E2D5CFBFCFD38D68C122545/pdf/55562_007-BAT_SUMMARY_REPORT-1065300.pdf

¹³⁸ Appendix A9.4 Bat Survey Report in ES Volume 4

¹³⁹ Ecology Co-op, 2018. Phase 2 Ecology Surveys - Camp Field, Bartons Road, Havant, Midhurst: The Ecology Co-op.

¹⁴⁰ Lindsay Carrington Ecological Services, 2017. *Welch Land, Lovedean Lane, Lovedean, Hampshire - Proof of Evidence for Appeal Appendix 7b*, Wareham: Lindsay Carrington Ecological Services

¹⁴¹ RPS, 2017. Staunton Country Park, Havant, Hampshire: Ecology Survey Report. Hampshire: RPS.

Site reference number	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
						Atkins carried out a search in July 2020 for further planning documentation on the Havant Borough Council planning portal to inform NE's statement. Although the submitted documents could be seen listed, documents could not be viewed and upon trying to open an error message stating 'documents unavailable' appeared. Significant residual impacts on bats likely at a site level (Prime Environment, 2018 ¹⁴²)	
	APP/17/00863	Bat Assessment, ECOSA, 2018	Southleigh Park House, Eastleigh Road, Havant, PO9 2PE	2 km south-east	Construction of 70 residential units and alterations to existing structures.	No assessment of residual effects undertaken in Ecological Appraisal (ECOSA, 2018 ¹⁴³). Mitigation measures for bats included within Ecological Appraisal conditioned by LPA in planning approval, therefore an assumption has been made that the local authority was content that no residual impacts would occur.	No
	APP/15/01156	Bat Assessment, ECOSA, 2018	Plot 2, Dunsbury Hill Farm, Park Lane, Cowplain, Waterlooville	795 m south-west	Construction of a warehouse	No residual effects on bats as a result of the proposals (Atkins, 2015 ¹⁴⁴)	No
	APP 52585/001	Bat Assessment, ECOSA, 2018	Land East of Church Centre, Blendworth Lane, Horndean, Waterlooville	1.7 km north-north-west	30 dwellings with associated open space and landscaping	No assessment of residual effects undertaken in Bat Survey and Assessment (Davidson-Watts Ecology, 2014 ¹⁴⁵). Planning refusal not on ecology grounds and therefore it is assumed that the LPA is content with the proposed mitigation for bats.	No
	APP30016/018	Bat Assessment, ECOSA, 2018	Oaklands House, Redhill Road, Rowlands Castle, PO9 6DJ	125 m east	Construction of 106 dwellings with associated access	No residual effects on bats as a result of the proposals (ACD Environmental, 2014 ¹⁴⁶)	No
	APP 23856/013	Bat Assessment, ECOSA, 2018	Former Keyline Builders Merchants, The Depot, Redhill Road, Rowlands Castle, Havant, PO9 6DW	900 m north-east	Regrading and landscaping of hill and infilling part of a redundant quarry.	Retrospective planning application, no ecology survey or assessment of residual impacts.	No
	APP 23856/009		Keyline Builders Merchants, The Depot, Redhill Road, Rowlands Castle, Havant, PO9 6DW	950 m north-east	Construction of forty-three dwellings open space and associated works	Nocturnal emergence and dawn re-entry bat surveys report (Middlemarch Environmental, 2017 ¹⁴⁷). No assessment of residual impacts on bats undertaken. Mitigation measures proposed are very broad. Development granted planning permission at appeal (Ref: APP/M1710/A/14/2213234). Therefore, it is assumed that the Planning Inspectorate is content with the proposed mitigation for bats and therefore residual impacts are not anticipated. Furthermore, the ecology related planning condition has been discharged by the LPA.	No
Plans							
Chichester District Council			Boxgrove Neighbourhood Plan (2017 - 2029)		Land at The Old Granary, Boxgrove – 3 to 6 homes;	The Boxgrove Neighbourhood Plan will not have a likely significant effect in combination with other proposals on the Singleton and Cocking Tunnels	No

¹⁴² Prime Environment, 2018. Long Copse Lane, Emsworth - Ecological Impact Assessment, Belper: Prime Environment.

¹⁴³ ECOSA, 2018. Southleigh Park House, Eastleigh Road, Havant, Hampshire - Ecological Assessment, North Baddesley: Ecological Survey and Assessment Limited

¹⁴⁴ No reference details

¹⁴⁵ Davidson-Watts Ecology, 2014. *Bat Survey and Assessment of Land at Blendworth Lane, Horndean*, Cheltenham: Davidson-Watts Ecology.

¹⁴⁶ ACD Environmental, 2014. Land South of Oaklands House, Rowlands Castle - Ecological Assessment, Malmesbury: ACD Environmental.

¹⁴⁷ No reference details

Site reference number	Planning status	Source of information / organisation	Planning reference and / or site name	Development location and approximate distance from the Scheme	Project description	Justification of potential for in-combination effects with Project	Potential for in-combination effect
Boxgrove Neighbourhood Plan (2017 - 2029) ¹⁴⁸					The Old Coal Yard, Hainaker – 1 home and 5 holiday lets (granted permission so only referred to in the plan for completeness); Brambles, Crockerhill – 1 home; In addition during the plan preparation, Land at Priors Acre was permitted on appeal for 22 homes. It is not included within the plan. However, having considered the mitigation Policies SD9 and SD11 of the South Downs National Park Authority Local Plan measures concludes that the Boxgrove Neighbourhood Plan will not lead to any significant or adverse effects on the integrity of the Singleton and Cocking Tunnels SAC	SAC.	
West Sussex County Council Joint Minerals Local Plan Single Issue Soft Sand Review Regulation 19 Habitats Regulations Assessment Main Report Prepared by West Sussex County Council and the South Downs National Park Authority September 2019 ¹⁴⁹			West Sussex County Council and South Downs National Park Authority		West Sussex County Council and South Downs National Park Authority	West Sussex County Council and the South Downs National Park Authority Joint Minerals Local Plan; <u>Singleton and Cocking Tunnels SAC</u> Potential impact pathway identified. Further site-specific screening is required. Screening zones of 6.5km and 12km are used in relation to the three SACs in Sussex designated for their bats, including Singleton & Cocking Tunnels SAC. There is a potential impact pathway of loss of supporting habitat for roosting, foraging and commuting.	Yes

¹⁴⁸ https://www.chichester.gov.uk/media/31674/Final-Boxgrove-Neighbourhood-Plan-HRA-Statement/pdf/Final_Boxgrove_Neighbourhood_Plan_HRA_Statement_1.pdf

¹⁴⁹ <https://www.westsussex.gov.uk/about-the-council/policies-and-reports/environment-planning-and-waste-policy-and-reports/minerals-and-waste-policy/joint-minerals-local-plan/>

8 Stage 1 - Screening Conclusion

- 8.1 Three European sites were identified with hydrological connectivity via the Hermitage Stream to the reservoir site and associated pipeline to the Bedhampton Pumping Station site and considered in the screening assessment:
- Chichester and Langstone Harbour SPA and Solent and Dorset Coast Marine SPA;
 - Chichester and Langstone Harbour Ramsar Site; and,
 - Solent Maritime SAC.
- 8.2 The Sussex Bat SACs were identified as they include two SACs in which Bechstein's bat, a qualifying feature use as roost sites; the Ebernoe Common SAC and Singleton and Cocking Tunnels SACs. The 12 km consultation zone for the Sussex SACs does not extend to the Scheme, but does extend to Southleigh Forest, where a single Bechstein's bat captured and fitted with a radio tag within the reservoir site boundary was recorded, thus there is a potential functional link between the reservoir site, Southleigh Forest and two of the Sussex Bat SACs, including:¹⁵⁰
- The Singleton and Cocking Tunnels SAC
 - The Ebernoe Common SAC

Table 8-1 - Summary of likely significant effects

- 8.3 below identifies the likely significant effects on qualifying features of the above sites:
- 8.4 Based on these findings, HRA Stage 2: Appropriate Assessment has been undertaken, and is described below in Section 9.

¹⁵⁰ Draft Document: Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol, - Southdowns National Park and Natural England. <https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-15-Draft-Sussex-Bat-SAC-Protocol.pdf>

Table 8-1 - Summary of likely significant effects

European Site / qualifying feature	Phase of project that may cause effect	Potential impact	Potential for likely significant effect	Affected conservation objectives
Chichester and Langstone Harbour SPA and Solent and Dorset Coast Marine SPA: Breeding birds: - Sandwich tern; - Common tern; and, - Little tern Wintering Birds: - Dark-bellied Brent goose; - Common shelduck; - Eurasian wigeon; - Eurasian teal; - Northern pintail; - Northern shoveler; - Red-breasted merganser; - Ringed plover; - Grey plover; - Dunlin; - Sanderling; - Bar-tailed godwit; - Eurasian curlew; - Common redshank; and, - Ruddy turnstone Supplementary advice for overwintering bird species for which WeBS alerts have been given¹⁵¹ : shelduck, Shoveler, Teal, Red-breasted Merganser, grey Plover, Ringed Plover, Curlew, Bar-tailed Godwit, Sanderling, Dunlin.	Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	Yes	- The extent of the site - The extent and distribution of the habitats of qualifying species; - The structure and function of the habitats of qualifying species; - The supporting processes on which the habitats of qualifying species rely; - The populations of qualifying species; and - The distribution of qualifying species within the site. Supplementary advice objectives: - Supporting habitat: water quality – contaminants. - Supporting habitat: extent and distribution of supporting habitat for the non-breeding season: - Supporting habitat: food availability. - Supporting habitat: landform: Maintain a high density of channel networks within intertidal feeding areas. - Supporting habitat: water quality – Contaminants, nutrients, turbidity
Chichester and Langstone Harbour Ramsar Site: Criterion 1 - Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes. Criterion 5 – Assemblages of international importance: 76,480 waterfowl, count in winter (5-year peak mean 1998/99 – 2002/2003) Criterion 6 – species/populations occurring at levels of international importance: Qualifying species/ populations (as identified at designation) Species with peak counts in spring/autumn: - Ringed plover; - Black-tailed godwit; and	Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	Yes	- The extent and distribution of qualifying natural habitats and habitats of qualifying species. - The structure and function (including typical species) of qualifying natural habitats. - The structure and function of the habitats of qualifying species. - The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. - The populations of qualifying species, and, - The distribution of qualifying species within the site.

¹⁵¹ https://app.bto.org/webs-reporting/?tab=alerts&dm_i=IG4,6KRPF,39H0XM,Q5QA9,1

European Site / qualifying feature	Phase of project that may cause effect	Potential impact	Potential for likely significant effect	Affected conservation objectives
- Common redshank. Species with peak counts in winter: - Dark-bellied Brent goose; - Common shelduck - Grey plover; - Dunlin.				
Solent Maritime SAC: Annex I habitats that are a primary reason for selection of this site Spartina swards Atlantic salt meadows Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: - Sandbanks which are slightly covered by sea water all the time - Mudflats and sandflats not covered by seawater at low tide - Coastal lagoons * Priority feature - Annual vegetation of drift lines - Perennial vegetation of stony banks - Salicornia and other annuals colonizing mud and sand - Shifting dunes along the shoreline with Ammophila arenaria (white dunes) Annex II species present as a qualifying feature, but not a primary reason for site selection: Desmoulin's whorl snail	Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	Yes	- The extent and distribution of qualifying natural habitats and habitats of qualifying species. - The structure and function (including typical species) of qualifying natural habitats. - The structure and function of the habitats of qualifying species. - The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. - The populations of qualifying species, and, - The distribution of qualifying species within the site.
Chichester and Langstone Harbour SPA and Solent and Dorset Marine SPA: Breeding birds: - Sandwich tern; - Common tern: and, - Little tern Wintering Birds: - Dark-bellied Brent goose; - Common shelduck; - Eurasian wigeon; - Eurasian teal; - Northern pintail; - Northern shoveler - Red-breasted merganser; - Ringed plover; - Grey plover; - Dunlin; - Sanderling; - Bar-tailed godwit; - Eurasian curlew; - Common redshank; and, - Ruddy turnstone	Construction	Water quality degradation through pollution, via hydrological connectivity	Yes	- The extent of the site - The extent and distribution of the habitats of qualifying species; - The structure and function of the habitats of qualifying species; - The supporting processes on which the habitats of qualifying species rely; - The populations of qualifying species; and - The distribution of qualifying species within the site. Supplementary advice objectives: - Supporting habitat: water quality – contaminants. - Supporting habitat air quality: - Supporting habitat: extent and distribution of supporting habitat for the non-breeding season: - Supporting habitat: food availability. - Supporting habitat: landform: Maintain a high density of channel networks within intertidal feeding areas. - Supporting habitat: water quality – Contaminants, nutrients, turbidity

European Site / qualifying feature	Phase of project that may cause effect	Potential impact	Potential for likely significant effect	Affected conservation objectives
Supplementary advice for overwintering bird species for which WeBS alerts have been given ¹⁵² : Shelduck, Shoveler, Teal, Red-breasted Merganser, grey Plover, Ringed Plover, Curlew, Bar-tailed Godwit, Sanderling, Dunlin;				
Chichester and Langstone Harbour Ramsar Site: Criterion 1 – Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes. Criterion 5 – Assemblages of international importance: 76,480 waterfowl, count in winter (5-year peak mean 1998/99 – 2002/2003) Criterion 6 – species/populations occurring at levels of international importance: Qualifying species/ populations (as identified at designation) Species with peak counts in spring/autumn: • Ringed plover; • Black-tailed godwit; and • Common redshank. Species with peak counts in winter: • Dark-bellied Brent goose; • Common shelduck • Grey plover; • Dunlin.	Construction	Water quality degradation through pollution, via hydrological connectivity	Yes	• The extent and distribution of qualifying natural habitats and habitats of qualifying species. • The structure and function (including typical species) of qualifying natural habitats. • The structure and function of the habitats of qualifying species. • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. • The populations of qualifying species, and, • The distribution of qualifying species within the site.
Solent Maritime SAC: Annex I habitats that are a primary reason for selection of this site: Spartina swards Atlantic salt meadows Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Sandbanks which are slightly covered by sea water all the time; • Mudflats and sandflats not covered by seawater at low tide ; • Coastal lagoons * Priority feature; • Annual vegetation of drift lines; • Perennial vegetation of stony banks; • Salicornia and other annuals colonizing mud and sand	Construction	Water quality degradation through pollution, via hydrological connectivity	Yes	• The extent and distribution of qualifying natural habitats and habitats of qualifying species. • The structure and function (including typical species) of qualifying natural habitats. • The structure and function of the habitats of qualifying species. • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. • The populations of qualifying species, and, • The distribution of qualifying species within the site.

¹⁵² https://app.bto.org/webs-reporting/?tab=alerts&dm_i=IG4,6KRPF,39H0XM,Q5QA9,1

European Site / qualifying feature	Phase of project that may cause effect	Potential impact	Potential for likely significant effect	Affected conservation objectives
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) Annex II species present as a qualifying feature, but not a primary reason for site selection: Desmoulin's whorl snail				
Singleton and Cocking Tunnels SAC; Annex II species present as a qualifying feature, but not a primary reason for site selection¹⁵³: Bechstein's bat	Construction	Loss of Bechstein's bat non-maternity roost sites within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC	Yes	- Maintain the presence of hibernating Bechstein's bats at the European site; - Restore any core areas of feeding habitat outside of the SAC boundary that are critical to Bechstein's bat during their hibernation period; - Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats.
Ebernoe Common SAC Annex II species present as a qualifying feature, but not a primary reason for site selection¹⁵⁴: Bechstein's bat	Construction	Loss of Bechstein's bat non-maternity roost sites within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that roost in Ebernoe Common SAC	No	- Maintain the presence of hibernating Bechstein's bats at the European site; - Restore any core areas of feeding habitat outside of the SAC boundary that are critical to Bechstein's bat during their hibernation period; - Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats.
Singleton and Cocking Tunnels SAC Annex II species present as a qualifying feature, but not a primary reason for site selection¹⁵⁵: Bechstein's bat	Construction	Loss of Bechstein's bat foraging habitat within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC	Yes	- Maintain the presence of hibernating Bechstein's bats at the European site; - Restore any core areas of feeding habitat outside of the SAC boundary that are critical to Bechstein's bat during their hibernation period; - Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats.

¹⁵³ Barbastelle is also a qualifying species of all three of the Sussex bat SACs but is not considered in this assessment due to the absence of a potential functional link for this species.

¹⁵⁴ Barbastelle is also a qualifying species of all three of the Sussex bat SACs but is not considered in this assessment due to the absence of a potential functional link for this species.

¹⁵⁵ Barbastelle is also a qualifying species of all three of the Sussex bat SACs but is not considered in this assessment due to the absence of a potential functional link for this species.

European Site / qualifying feature	Phase of project that may cause effect	Potential impact	Potential for likely significant effect	Affected conservation objectives
Ebernoe Common SAC Annex II species present as a qualifying feature, but not a primary reason for site selection¹⁵⁶; Bechstein's bat	Construction	Loss of Bechstein's bat foraging habitat within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that roost in Ebernoe Common SAC	No	• Maintain the presence of hibernating Bechstein's bats at the European site; • Restore any core areas of feeding habitat outside of the SAC boundary that are critical to Bechstein's bat during their hibernation period; • Restore the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature and/or its supporting habitats.

¹⁵⁶ Barbastelle is also a qualifying species of all three of the Sussex bat SACs but is not considered in this assessment due to the absence of a potential functional link for this species.

9 Stage 2 – Appropriate Assessment of potential adverse effects on the integrity of European Sites

Results of appropriate assessment

9.1 The results of the appropriate assessment/integrity test of potential adverse effects on the integrity of European Sites is provided in Table 9.1.

Table 9-1 - Appropriate Assessment of potential adverse effects on European Sites

European Site / qualifying feature	Conservation objectives	Phase of Project	Likely significant Effects (LSEs) identified at Stage 1: Screening	Avoidance and mitigation summary to avoid risks to conservation objectives	Conclusion
Chichester and Langstone Harbour SPA / Solent and Dorset Coast Marine SPA; <u>Breeding birds:</u> - Sandwich tern; - Common tern; and, - Little tern <u>Wintering Birds:</u> - Dark-bellied Brent goose; - Common shelduck; - Eurasian wigeon; - Eurasian teal; - Northern pintail; - Northern shoveler - Red-breasted merganser; - Ringed plover; - Grey plover; - Dunlin; - Sanderling; - Bar-tailed godwit; - Eurasian curlew; - Common redshank; and, - Ruddy turnstone Supplementary advice for overwintering bird species for which WeBS alerts have been given¹⁵⁷: shelduck, Shoveler, Teal, Red-breasted merganser, grey plover, ringed plover, Curlew, Bar-tailed godwit, Sanderling, Dunlin	- The extent and distribution of the habitats of qualifying species; - The structure and function of the habitats of qualifying species; - The supporting processes on which the habitats of qualifying species rely; - The populations of qualifying species; and - The distribution of qualifying species within the site. Supplementary advice objectives: - Supporting habitat: water quality – contaminants. - Supporting habitat air quality: - Supporting habitat: extent and distribution of supporting habitat for the non-breeding season: - Supporting habitat: food availability. - Supporting habitat: landform: Maintain a high density of channel networks within intertidal feeding areas. - Supporting habitat: water quality – Contaminants, nutrients, turbidity	Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	The reservoir site is 3.85 km to the north of the Chichester and Langstone Harbour SPA and 8.05 km north of the Solent and Dorset Coast Marine SPA. The closest point of the pipeline is 1 km north of the Chichester and Langstone Harbour SPA and 4.2 km north east of the Solent and Dorset Coast Marine SPA, at the nearest point of the SPA within Portcreek Junction. The proposed works will be confined to within the Scheme boundaries. Temporary Environment Agency discharge consents will be obtained during the construction process to control the discharge of surface or accumulated ground water to the Riders and Hermitage streams, to ensure silt is controlled and removed, this Mitigation measure along with the pollution prevent described below will prevent silt from the construction site entering Chichester and Langstone Harbour SPA. The risk of pollution during construction will be mitigated by the adoption of good working practices, such as Guidance for Pollution Prevention (GPPs). Incorporation of pollution prevention measures to protect ground and surface water: https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg In general terms, by following these guidelines, significant impacts to the water environment will be avoided. The guidelines are adopted as industry standard for pollution prevention. The standard pollution prevention measures to be implemented are proven to be effective in minimising the risk of pollution. Other proposed avoidance measures are also plainly established and uncontroversial and follow relevant best practice guidelines. Appropriate measures will be taken to prevent pollution. Construction practices will be managed through the implementation of a Construction Environmental Management Plan (CEMP) to mitigate construction risks, (refer to Chapter 15 Water in ES Volume 2 for DMP inclusions and the REAC as part of the OEMP in Appendix A2.1 in ES Volume 4). A Drainage Management Plan (DMP) will be produced and managed to minimise surface and groundwater pollution (refer to Chapter 15 Water in ES Volume 2 for DMP inclusions and the REAC as part of the OEMP in Appendix A2.1 in ES Volume 4). An Outline Biodiversity Mitigation and Compensation Strategy, covering both terrestrial and aquatic environment, with relevance to the water environment, will be developed to identify opportunities for betterment in the catchment to mitigate and/or compensate for effects identified. A site waste management plan will be produced and managed to minimise the waste generation/ disposal. Using pre-fabricated items and modular arrangement, the onsite generated waste will be minimised	No adverse effect on European Site integrity.

¹⁵⁷ https://app.bto.org/webs-reporting/?tab=alerts&dm_i=IG4,6KRPF,39H0XM,Q5QA9,1

European Site / qualifying feature	Conservation objectives	Phase of Project	Likely significant Effects (LSEs) identified at Stage 1: Screening	Avoidance and mitigation summary to avoid risks to conservation objectives	Conclusion
				Measures which have been included within the design to avoid or reduce impacts and effects on important ecological features. - particular care will need to be taken with pipeline excavations at the southern end of the pipeline corridor where shallow groundwater in the South Hants Lambeth Group groundwater body and artesian chalk groundwater from the East Hants chalk groundwater body may be encountered. Trench excavations and any shafts will need to be designed in accordance with industry standards¹⁵⁸. - Required fencing will be provided to keep works well away from the river embankment. - A clear communication plan will be set up between all sub-contractors on site. - Appropriate control measures will be taken to prevent pollution. - Appropriate silt control measures will be put in place. - Construction practices will be managed through the implementation of a CEMP to mitigate construction risks. The construction works will adhere to the following Construction Industry Research and Information Association (CIRIA) guidance documents as well as standard mitigation techniques for pollution prevention as per pollution prevention guidance from the Department for Environment, Food and Rural Affairs: - C648 - Control of water pollution from linear construction projects. Technical guidance (2006); - C532 - Control of water pollution from construction sites. Guidance for consultants and contractors (2001); and - R134 - Sediment management in urban drainage catchments (1995). All the machineries and equipment will be checked thoroughly for any leakage of fuel, lubricant before starting the work every day. All the machineries and equipment will be used and maintained according to the manufacturer's or supplier's recommendations. Plant nappies will be used for all stable machineries and emergency spillage kit will be kept at work location if there is any emergency. Specialist spill kits will be in use over water that exclude water and trap oil. Refuelling of small plant will take place using funnels to avoid spillages and be carried out whilst placed in a plant nappy. All the machinery and equipment will be parked outside of the works area when they are not operating. To protect the whole area in the river side, the working area will be covered by an all-encompassing boom to contain any spillage that may occur when working on the screen structure. Hazardous materials will not be allowed to discharge into natural watercourses or drainage systems. All work will be carried out with requisite equipment and materials to ensure that all drains, rivers, streams or other surface water features are safeguarded against pollution. Any specific environmental issues known by the client will be notified by the Environmental Manager prior to the construction team attending site. There is a direct pathway (Hermitage Stream) to the SPA, but the contribution of water entering the SPA balanced on mass against other tributaries entering the SPA and tidal influence is considered to be a small contribution. The measures proposed mean that risks or downstream pollution events are very low.	

¹⁵⁸ Atkin, July (2020) Havant Thicket Reservoir Environmental Statement, Volume 2 Main Report, HTR-ATK-ZZ-ZZ-RP-Z-0115, Section 15 – Ground water

European Site / qualifying feature	Conservation objectives	Phase of Project	Likely significant Effects (LSEs) identified at Stage 1: Screening	Avoidance and mitigation summary to avoid risks to conservation objectives	Conclusion
		Construction	Water quality degradation through pollution, via hydrological connectivity	There is a direct pathway (Hermitage Stream) to the SPA, but the contribution of water entering the SPA balanced on mass against other tributaries entering the SPA and tidal influence is considered to be a small contribution. The measures proposed mean that risks or downstream pollution events are very low. See mitigation details and conclusions for SPA above.	No adverse effect on European Site integrity.
Chichester and Langstone Harbour Ramsar Site: Criterion 1 – Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes. Criterion 5 – Assemblages of international importance: 76,480 waterfowl, count in winter (5-year peak mean 1998/99 – 2002/2003) Criterion 6 – species/populations occurring at levels of international importance: Qualifying species/populations (as identified at designation) Species with peak counts in spring/autumn: • Ringed plover; • Black-tailed godwit; and • Common redshank. Species with peak counts in winter: • Dark-bellied Brent goose; • Common shelduck • Grey plover; • Dunlin.	• The extent and distribution of qualifying natural habitats and habitats of qualifying species. • The structure and function (including typical species) of qualifying natural habitats. • The structure and function of the habitats of qualifying species. • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. • The populations of qualifying species, and, • The distribution of qualifying species within the site.	Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	The reservoir site is 3.85 km to the north and the closest point of the pipeline corridor is 1 km away from the closest part of the Ramsar site. There is a direct pathway (Hermitage Stream) to the Ramsar Site, but the contribution of water entering the Ramsar Site balanced on mass against other tributaries entering the Ramsar Site and tidal influence is considered to be a small contribution. The measures proposed mean that risks or downstream pollution events are very low. Temporary Environment Agency discharge consents will be obtained during the construction process to control the discharge of surface or accumulated ground water to the Riders and Hermitage streams, to ensure silt is controlled and removed. this Mitigation measure along with the pollution prevent described below will prevent silt from the construction site entering Chichester and Langstone Harbour Ramsar Site. See mitigation details and conclusions for SPA above.	No adverse effect on European Site integrity.
		Construction	Water quality degradation through pollution, via hydrological connectivity	There is a direct pathway (Hermitage Stream) to the Ramsar Site, but the contribution of water entering the Ramsar Site balanced on mass against other tributaries entering the SPA and tidal influence is considered to be a small contribution. The measures proposed mean that risks or downstream pollution events are very low. See mitigation details and conclusions for SPA above.	No adverse effect on European Site integrity.
Solent and Maritime SAC: Annex I habitats that are a primary reason for selection of this site: Spartina swards Atlantic salt meadows Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Sandbanks which are slightly covered by sea water all the time • Mudflats and sandflats not covered by seawater at low tide • Coastal lagoons * Priority feature • Annual vegetation of drift lines	• The extent and distribution of qualifying natural habitats and habitats of qualifying species. • The structure and function (including typical species) of qualifying natural habitats. • The structure and function of the habitats of qualifying species. • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. • The populations of qualifying species, and, • The distribution of qualifying species within the site.	Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	The reservoir site is 3.85 km to the north and the closest point of the pipeline corridor is 1 km away from the closest part of the SAC. There is a direct pathway (Hermitage Stream) to the SAC, but the contribution of water entering the SAC balanced on mass against other tributaries entering the SPA and tidal influence is considered to be a small contribution. The measures proposed mean that risks or downstream pollution events are very low. Temporary Environment Agency discharge consents will be obtained during the construction process to control the discharge of surface or accumulated ground water to the Riders and Hermitage streams, to ensure silt is controlled and removed. this Mitigation measure along with the pollution prevent described below will prevent silt from the construction site entering the Solent Maritime SAC. See mitigation details and conclusions for SPA above.	No adverse effect on European Site integrity..
		Construction	Water quality degradation through	There is a direct pathway (Hermitage Stream) to the SAC, but the contribution of water entering the SAC balanced on mass against other tributaries entering the SPA and tidal influence is considered to be a	No adverse effect on European

European Site / qualifying feature	Conservation objectives	Phase of Project	Likely significant Effects (LSEs) identified at Stage 1: Screening	Avoidance and mitigation summary to avoid risks to conservation objectives	Conclusion
- Perennial vegetation of stony banks - Salicornia and other annuals colonizing mud and sand - Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) Annex II species present as a qualifying feature, but not a primary reason for site selection: Desmoulin's whorl snail			pollution, via hydrological connectivity	small contribution. The measures proposed mean that risks or downstream pollution events are very low. See mitigation details and conclusions for SPA above.	Site integrity.
Singleton and Cocking Tunnels SAC; Annex II species present as a qualifying feature, but not a primary reason for site selection¹⁵⁹ Bechstein's bat		Construction	Loss of Bechstein's bat non-maternity roost sites within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC	The reservoir has been designed to avoid Staunton Country Park woodland, located immediately south of the reservoir site, retain woodland habitat and minimise indirect impacts. Works will be undertaken in accordance with European Protected Species Licence (EPSM). Measures will include pre-felling inspections and avoid times of years when bats are most sensitive (breeding or hibernating). Given the presence of roosting bats within the site and a diverse assemblage of bats on-site and in the local landscape, it will be necessary to obtain European Protected Species Mitigation (EPSM) licences in order to ensure that bats are protected during the tree removal in advance of construction. Ideally an EPSM licence will be granted by Natural England to cover the four small woodland blocks as a whole. Based on existing data, it is proposed that the bat licence will cover the destruction of roost sites, including maternity, small hibernation and day and night roosts. The licence would cover disturbance and capture of a maximum of 10 Bechstein's bat. <u>Timing of works</u> Woodland clearance works of trees with bat roost suitability, will be timed to occur when bats are least susceptible to disturbance, and will also consider the mitigation requirements of other protected species, especially dormouse and breeding birds. The clearance works for trees suitable for roosting bats will be timed to occur mainly in September and October, with some clearance works of trees not identified as suitable for bats extending over winter. <u>Proposals for site clearance</u> Known roosting features will be inspected by a bat licensed ecologist and then the tree will be sectionally felled. Where feasible, a number of the roost features will then be moved to an off-site tree and strapped to a limb to retain the potential roost in situ. If bats are present within the feature when felling occurs (or their presence is still uncertain), these limbs will be carefully removed and lowered to the ground and left overnight leaving the roost feature facing upwards, to allow any bats present to leave of their own accord, before the limb is strapped to an off-site tree. <u>Management of impacts during construction</u> During the construction phases of the development, the retained woody vegetation on-site and along the boundaries of the site will be protected by Heras fencing (or similar). There will be no access to these areas by machinery or site contractors and these areas will not be used for storage. There will be no construction access to these areas for the duration of the development works. Where possible, suitable	No adverse effect on European Site integrity.

¹⁵⁹ Barbastelle is also a qualifying species of all three of the Sussex bat SACs, but is not considered in this assessment due to the absence of a potential functional link for this species.

European Site / qualifying feature	Conservation objectives	Phase of Project	Likely significant Effects (LSEs) identified at Stage 1: Screening	Avoidance and mitigation summary to avoid risks to conservation objectives	Conclusion
				bat roost features within the Site will be identified within retained trees located close to construction works, where these are identified a larger buffer to construction will be considered. It is unlikely that Bechstein's bats from the SAC make significant roosting use of the reservoir site due to the distance (approximately 16.7 km), but there is potential that the colony of Bechstein's bat commuting between the reservoir site and Southleigh Forest are a halo population, which supports the SAC core population. However, the measures detailed above will minimise the immediate impact on those bats and ensure that they have habitat in the future. Therefore, Bechstein's bat that are potentially functionally linked to the SAC can continue to contribute to the SAC.	
Singleton and Cocking Tunnels SAC; Annex II species present as a qualifying feature, but not a primary reason for site selection¹⁶⁰: Bechstein's bat		Construction	Loss of Bechstein's bat foraging habitat within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC	The reservoir has been designed to avoid Staunton Country Park woodland, located immediately south of the reservoir site, retain woodland habitat and minimise indirect impacts. Advanced woodland planting in Gipsies Plain (south east corner of Site) and Deerslaughter Plain (South west corner of Site) was undertaken in 2019 to ensure habitat connectivity is maintained between Havant Thicket woodland immediately north of the Site and Staunton Country Park, immediately south of the Site. Works will be undertaken in accordance with European Protected Species Licence (EPSM). Measures will include pre-felling inspections and avoid times of years when bats are most sensitive (breeding or hibernating). Given the presence of roosting bats within the site and a diverse assemblage of bats on-site and in the local landscape, it will be necessary to obtain European Protected Species Mitigation (EPSM) licences in order to ensure that bats are protected during the tree removal in advance of construction. Ideally an EPSM licence will be granted by Natural England to cover the four small woodland blocks as a whole. Based on existing data, it is proposed that the bat licence will cover the destruction of roost sites, including maternity, small hibernation and day and night roosts. The licence would cover disturbance and capture of a maximum of 10 Bechstein's bat. A mixture of tree climbing and emergence / back-tracking surveys will be undertaken in Summer 2021 and in advance of tree clearance works to provide an up-to-date and accurate picture of the roosting locations of bats at the site. This information will be used to inform the licence application and subsequent mitigation work. A ground level tree assessment has been completed identifying all medium and high-risk trees. A condition of the licence would be that, prior to woodland clearance, a climbing and/or emergence survey will take place of all trees previously identified as having medium or high potential for bat roost features. Those where bats can be confirmed as absent will be blocked to prevent re-occupation before felling. Those where bats may be present will have an exclusion device fitted to ensure the bats have left before felling takes place. <u>Timing of works</u> Woodland clearance works of trees with bat roost suitability, will be timed to occur when bats are least susceptible to disturbance, and will also consider the mitigation requirements of other protected species, especially dormouse and breeding birds. The clearance works for trees suitable for roosting bats will be timed to occur mainly in September and	No adverse effect on European Site integrity.

¹⁶⁰ Barbastelle is also a qualifying species of all three of the Sussex bat SACs, but is not considered in this assessment due to the absence of a potential functional link for this species.

European Site / qualifying feature	Conservation objectives	Phase of Project	Likely significant Effects (LSEs) identified at Stage 1: Screening	Avoidance and mitigation summary to avoid risks to conservation objectives	Conclusion
				October, with some clearance works of trees not identified as suitable for bats extending over winter. <u>Proposals for site clearance</u> Known roosting features will be inspected by a bat licensed ecologist and then the tree will be sectionally felled. Where feasible, a number of the roost features will then be moved to an off-site tree and strapped to a limb to retain the potential roost in situ. If bats are present within the feature when felling occurs (or their presence is still uncertain), these limbs will be carefully removed and lowered to the ground and left overnight leaving the roost feature facing upwards, to allow any bats present to leave of their own accord, before the limb is strapped to an off-site tree. <u>Management of impacts during construction</u> During the construction phases of the development, the retained woody vegetation on-site and along the boundaries of the site will be protected by Heras fencing (or similar). There will be no access to these areas by machinery or site contractors and these areas will not be used for storage. There will be no construction access to these areas for the duration of the development works. Where possible, suitable bat roost features within the Site will be identified within retained trees located close to construction works, where these are identified a larger buffer to construction will be considered. It is unlikely that Bechstein's bats from the SAC make significant foraging use of the reservoir site due to the distance (approximately 16.7 km), but there is potential that the colony of Bechstein's bat commuting between the reservoir site and Southleigh Forest are a halo population, which supports the SAC core population. However, the measures detailed above will minimise the immediate impact on those bats and ensure that they have habitat in the future. Therefore, Bechstein's bat that are potentially functionally linked to the SAC can continue to contribute to the SAC. <u>In-combination effects</u> 2.1 This assessment identified the projects considered for in combination effects/residual impacts on Bechstein's bat, a qualifying bat species of Singleton and Cocking Tunnels SAC, from planning applications within 3 km of the reservoir site. These are listed in Table 7-2. 2.2 It is concluded that at the time of this assessment, one plan and four applications have potential for in-combination effects with the Scheme and could in combination with the Scheme, affect the conservation status of Bechstein's bat that are a qualifying feature of the Singleton and Cocking Tunnels SAC. 2.3 Two of the applications (5562/001, 5562/005 for Land East of Horndean) are located approximately 300 m north of the reservoir site. The proposed mitigation and habitat enhancements proposed as part of these two applications in respect of Bechstein's bat (and other recorded bat species) is to provide additional bat box roosting opportunities in Havant Thicket and The Holt FE land. Havant Thicket is located within the Havant Thicket Reservoir Scheme Boundary. Compensation for the reservoir scheme in respect of Bechsteins' bat includes the installation of bat roosting boxes in Havant Thicket Woodland. Thus, both the Land East of Horndean applications and the Havant Thicket Reservoir Scheme plan to provide roosting habitat in the form of bat roost boxes, within Havant Thicket woodland. Both of these developments are proposing appropriate mitigation, however in the absence of a joined-up	

European Site / qualifying feature	Conservation objectives	Phase of Project	Likely significant Effects (LSEs) identified at Stage 1: Screening	Avoidance and mitigation summary to avoid risks to conservation objectives	Conclusion
				compensation / enhancement approach, there is a potential in-combination effect to the conservation status of the Bechstein's bat population. The West Sussex County Council and the South Downs National Park Authority Joint Minerals Local Plan and Planning Application GEN/18/01143 Land North of Long Copse Lane, Emsworth, do not have sufficient information to conclude in-combination effects. However, both plan and application have the potential to result in loss of Bechstein's bat foraging and roosting habitat. It is recognised that incremental losses from in-combination plans and applications may have been occurred to date. These losses have occurred prior to the detailed, more strategic survey work that has been undertaken at Havant Thicket, which significantly adds to the evidence base. The emerging work identifies the importance of the wider landscape for Bechstein's bats and draws links to the Sussex SACs. Given the landscape change that will result from the new reservoir and set in the context of the significant development growth that is coming forward in both East Hampshire and Havant's local plans, there is potential for greater impact of in-combination land use change and in-combination effects to the conservation status of Bechstein's bat, in the future. Future incremental losses from development could continue to add to the pressure on the Bechstein's bat SACs in Sussex. A strategic approach to the future in-combination impacts from development in the area would be beneficial going forward to ensure that the continued ecological function of the wider landscape is retained and can be enhanced to fully support the local Bechstein's bat population. To avoid and mitigate these in-combination effects Portsmouth Water will engage with FE (owner of Havant Thicket) and wider development applicants including the land East of Horndean applicants to develop a strategic mitigation approach to meet mitigation proposals of the Land East of Horndean Scheme and Havant Thicket reservoir that maintains the conservation status of the Bechstein's bat population. Based on this joined up approach it is considered that there will be no adverse effects on the integrity of the Singleton and Cocking Tunnels SAC.	

Appropriate assessment conclusion

- 9.2 There is a direct pathway (Hermitage Stream) to the Chichester and Langstone Harbours SPA, Ramsar Site and Solent Maritime SAC, but the contribution of water entering these European Sites balanced on mass against other tributaries entering the European Sites and tidal influence is considered to be a small contribution. The measures proposed mean that risks of downstream pollution events are very low. Overland pollution can be discounted because there is no identified pathway.
- 9.3 The works will be confined to the Scheme boundary and the immediate surrounds and shall be undertaken with environmental best practice measures. Based on the proposed mitigation it is considered that there will be no adverse effects on the integrity of the Chichester and Langstone Harbours SPA / Ramsar Site, Solent and Dorset Coast marine SPA or Solent Maritime SAC.
- 9.4 It is unlikely that Bechstein's bats from the SAC make significant roosting and foraging use of the reservoir site due to the distance (approximately 16.7 km), but there is potential that the colony of Bechstein's bat commuting between the reservoir site and Southleigh Forest are a halo population, which supports the SAC core population. However, the measures detailed above will minimise the immediate impact on those bats. Therefore, Bechstein's bat that are potentially functionally linked to the SAC can continue to contribute to the SAC. This HRA has taken account of in combination effects. In order to identify potential projects which could have an in-combination effects, a review was undertaken of planning applications within the Zone of Influence of the Application Site that may have potential to contribute to cumulative effects. It was concluded that no in-combination adverse effects on the Chichester and Langstone Harbours SPA, Ramsar Site and Solent Maritime SAC.
- 9.5 It was concluded at the time of this assessment, one plan and four applications have a potential in combination effect with the Scheme and could in combination with the Scheme, affect the conservation status of Bechstein's bat that are a qualifying feature of the Singleton and Cocking Tunnels SAC (refer to **Error! Reference source not found.**) Two of the applications are EHDC applications, 5562/001, 5562/005 for land east of Horndean, are located approximately 300 m north of the reservoir site. The mitigation, habitat enhancement proposed as part of these two applications in respect of Bechstein's bat (and other recorded bat species) is to provide additional bat box roosting opportunity in Havant Thicket and The Holt FE land. Havant Thicket is located within the Havant Thicket Reservoir Scheme Boundary. Compensation for the reservoir scheme in respect of Bechsteins' bat includes the installation of bat roosting boxes in Havant Thicket Woodland. Thus, both the Land East of Horndean applications and the Havant Thicket Reservoir Scheme plan to locate mitigation / enhancement roosting habitat in the form of bat roost boxes, within Havant Thicket woodland. Both of these developments are proposing appropriate mitigation and there are no residual in-combination effects after the proposed mitigation, providing that a joined-up mitigation / enhancement approach is taken to maintain the conservation status of the Bechstein's bat population.
- 9.6 To avoid and mitigate in-combination effects Portsmouth Water will engage with FE (owner of Havant Thicket) and wider development applicants including the Land East of Horndean applicants to develop a strategic mitigation approach to meet mitigation proposals of the Land East of Horndean Scheme and Havant thicket reservoir that maintains the conservation status of the Bechstein's bat population. Based on this joined up approach it is considered that there will be no adverse effects on the integrity of the Singleton and Cocking Tunnels SAC.
- 9.7 The Appropriate Assessment considers a suite of avoidance and mitigation measures to be included within the Scheme design and construction plan. These mitigation measures will ensure that there are no adverse effects on European site integrity.

10 Conclusions

Initial scoping conclusion

10.1 The initial Scoping identified the following European Sites (See identification of European Sites in Section 4):

- Chichester and Langstone Harbour SPA;
- Chichester and Langstone Harbour Ramsar Site;
- The Solent Maritime SAC;
- The Solent and Isle of Wight Lagoon SAC
- Solent and Dorset Coast Marine SPA;
- River Itchen SAC;
- The Singleton and Cocking Tunnels SAC;
- The Ebernoe Common SAC;
- The Mens SAC; and,
- Bridlesford Copses SAC.

Coarse screening conclusion

10.2 The following European Sites have been discounted from further assessment for the reasons given in Sections 4.14 - 4.26:

- The Solent and Isle of Wight Lagoon SAC
- River Itchen SAC;
- The Mens SAC; and,
- Bridlesford Copses SAC.

10.3 For the following sites the potential for effect pathways cannot be readily discounted and are fully screened in and taken through to detailed screening (Section 1):

- Chichester and Langstone Harbour SPA combining the Solent and Dorset Coast Marine SPA;
- Chichester and Langstone Harbour Ramsar Site;
- The Solent Maritime SAC;
- The Ebernoe Common SAC; and,
- Singleton and Cocking Tunnels SAC.

Likely significant effects identified

10.4 There are direct hydrological links between the Scheme and the European Sites.

10.5 The following potential impacts have been identified as potentially relevant to the proposed works and show whether they would have an impact during either the construction or the operational phase, or both:

Construction phase

- Potential effects on qualifying features of the of the Chichester and Langstone Harbour SPA and Ramsar site, Solent and Dorset Coast Marine SPA and Solent Maritime SAC, during construction may result from:

- Water quality degradation through mobilisation of sediment, via hydrological connectivity (the Hermitage Stream);
- Water quality degradation through mobilisation of pollution via hydrological connectivity (the Hermitage Stream);
- Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs;
- Alteration in salinity levels from fresh water entering the Langstone Harbour via the Hermitage Stream;
- Noise and vibration;
- Air quality;
- Loss of Bechstein's bat non-maternity roost sites within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC and roost in Ebernoe Common SAC;
- Loss of Bechstein's bat foraging habitat within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that forage in Ebernoe Common SAC.

Operational phase

10.6 Potential effects on qualifying features of the Chichester and Langstone Harbour SPA and Ramsar Site, Solent and Dorset Coast Marine SPA and Solent Maritime SAC, during operation may result from:

- Water quality degradation through mobilisation of sediment, via hydrological connectivity (the Hermitage Stream);
- Water quality degradation through mobilisation of Nitrates via hydrological connectivity (the Hermitage Stream);
- Water quality degradation through mobilisation of phosphorus via hydrological connectivity (the Hermitage Stream);
- Inputs of phosphorus and trophic state through the creation of a wetland, via hydrological connectivity (the Hermitage Stream);
- Alteration in flow regime to fresh water entering Langstone Harbour via the Hermitage Stream due to abstraction from Bedhampton and Havant Springs
- The impact of increased flow to the Langstone Harbour via Hermitage Stream, which might occur during the emergency draw-down of the reservoir, (should this ever be required);
- Alteration in salinity levels from fresh water entering the Langstone Harbour via the Hermitage Stream;
- Noise and vibration;
- Air quality.

Stage 1 Screening conclusion

The following likely significant effects were identified and are presented in Table 10-1 - Stage 1 Screening: likely significant effects

10.7 .

Table 10-1 - Stage 1 Screening: likely significant effects

European Site / qualifying feature	Phase of project that may cause effect	Potential impact	Potential for likely significant effect
Chichester and Langstone Harbours SPA and Solent and Dorset Coast Marine SPA:	Construction	Water quality degradation through mobilisation of sediment, via hydrological connectivity	Yes
Chichester and Langstone Harbours Ramsar Site			
Solent Maritime SAC			
Chichester and Langstone Harbours SPA and Solent and Dorset Coast Marine SPA:	Construction	Water quality degradation through pollution, via hydrological connectivity	Yes
Chichester and Langstone Harbours Ramsar Site			
Solent Maritime SAC			
Singleton and Cocking Tunnels SAC	Construction	Loss of Bechstein's bat non-maternity roost sites within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC	Yes
		Loss of Bechstein's bat foraging habitat within the reservoir site and potential effects on the favourable conservation status of Bechstein's bat that hibernate in Singleton and Cocking Tunnels SAC	Yes

Stage 2 Appropriate assessment conclusion

- 10.8 The Appropriate Assessment has identified a suite of avoidance and mitigation measures to be included within the Scheme design and construction plan. These mitigation measures will ensure that there are no adverse effects on European site integrity.
- 10.9 This HRA has taken account of in combination effects. In order to identify potential projects which could have an in-combination effects, a review was undertaken of planning applications within the Zone of Influence of the Application Site that may have potential to contribute to cumulative effects. It was concluded that no in-combination adverse effects on the Chichester and Langstone Harbours SPA, Ramsar Site, Solent and Dorset Marine SPA and Solent Maritime SAC.

- 10.10 It was concluded at the time of this assessment, one plan and four applications have a potential in combination effect with the Scheme and could in combination with the Scheme, affect the conservation status of Bechstein's bat that are a qualifying feature of the Singleton and Cockjng Tunnels SAC (refer to **Error! Reference source not found.**) Two of the applications are EHDC applications, 5562/001, 5562/005 for land east of Horndean, and are located approximately 300 m north of the reservoir site. The mitigation and habitat enhancement proposed as part of these two applications in respect of Bechstein's bat (and other recorded bat species) is to provide additional bat box roosting opportunity in Havant Thicket woodland and The Holt FE land. Havant Thicket woodland is located within the Havant Thicket Reservoir Scheme Boundary. Compensation for the reservoir scheme in respect of Bechsteins' bat includes the installation of bat roosting boxes in Havant Thicket woodland. Thus, both the Land East of Horndean applications and the Havant Thicket Reservoir Scheme plan to locate mitigation / enhancement roosting habitat in the form of bat roost boxes, within Havant Thicket woodland. Portsmouth Water will engage with FE (owner of Havant Thicket woodland) and share information on bat mitigation measures with the LPA and wider development applicants including the Land East of Horndean applicants to assist the LPA in developing a strategic mitigation approach that maintains the conservation status of the Bechstein's bat population. This will ensure there is a joined-up mitigation / enhancement approach is taken to maintain the conservation status of the Bechstein's bat population.

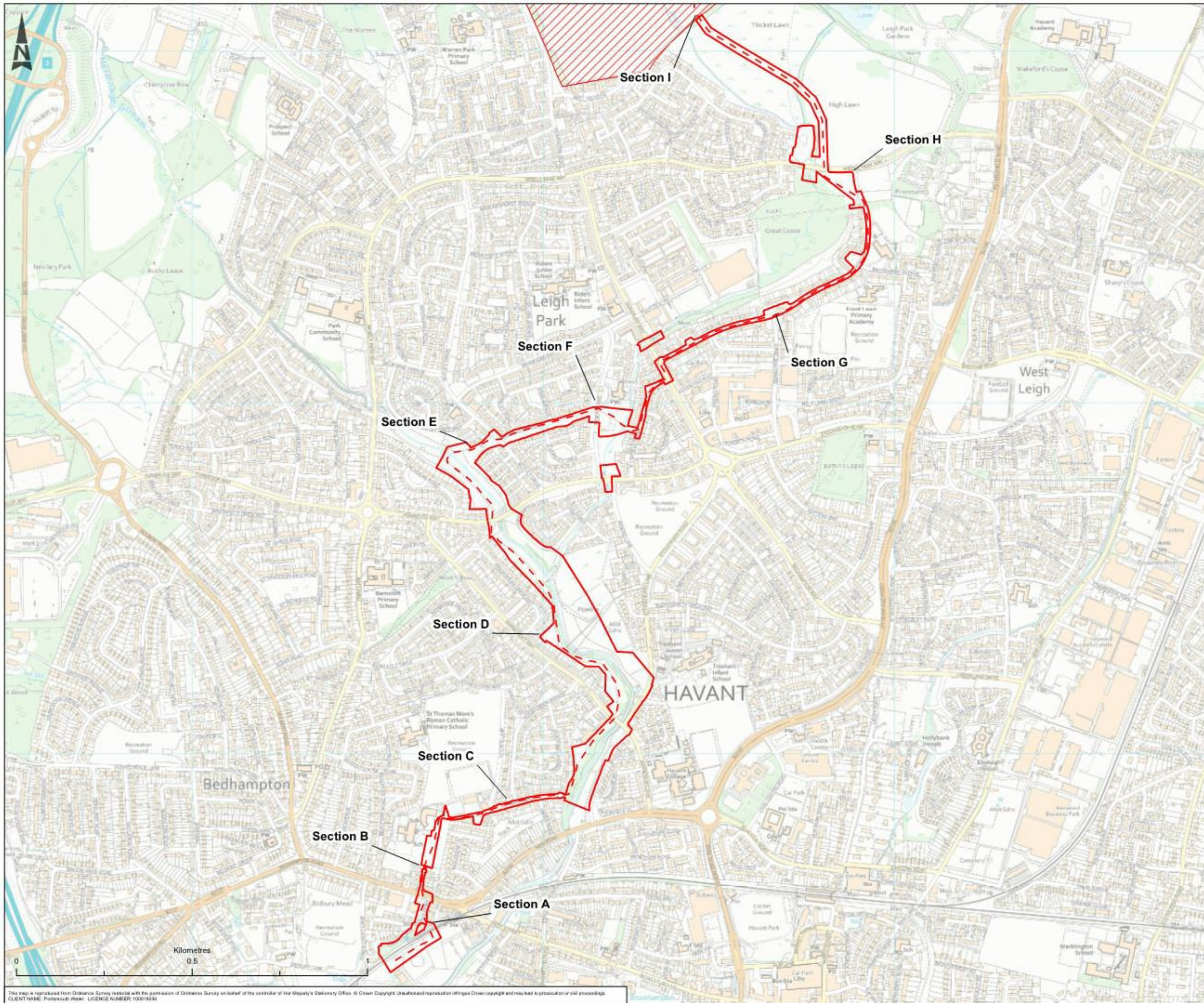
Appendices



Appendix A Site Location and Pipeline Route Location Plan

A.1 Site Location Plan

A.2 Pipeline Route Sections Plan



- Red Line Boundary
- Pipeline Corridor
- Pipeline Route

PO1	FD	KT	OW	LS	FOR INFORMATION	29/07/2009
Rev	On	Cl	Rev	Auth	Description	Date

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Drawing Status	Status
FOR INFORMATION	S2

Corrections Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0014

Project | Originator | Volume | Location | Type | Rev | Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

Portsmouth Water

Project Ref. No.	Sheet	Scale	Sheet Size
5169117	1 of 1	1:10,000	A3

Project Title
HAVANT THICKET RESERVOIR

Drawing Title
**PIPELINE ROUTE
SECTIONS PLAN**

Portsmouth Water Drawing Number	Rev
	P01

A.3 EA Abstraction Licence

Application No:	NPS/WR/003341	Licence Serial No:	11/42/36.2/1
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Please quote the serial number in all correspondence about this licence



**Environment
Agency**

FULL LICENCE TO ABSTRACT WATER

The Environment Agency ("the Agency") grants this licence to:-

PORTSMOUTH WATER LTD ("the licence holder")

PO Box 8
West Street
Havant
Hampshire
PO9 1LG

Company registration number: 02536455

This licence authorises the licence holder to abstract water from the source of supply described in the Schedule of Conditions to this licence and subject to the provisions of that Schedule. The licence becomes effective on the relevant date shown below and shall remain in force until revoked.

Signed *Catherine Leach*
Catherine Leach
Team Leader
Permit Support Centre
(Water Resources)

Environment Agency
WR Permit Support Centre
PO Box 4209
Sheffield
S9 9BS

Date of Issue 18 February 2010

Date effective 9 June 2009

Date of original issue 23 December 1965
(if this document is a reissue or revision of the
licence originally granted for this abstraction)

The licence should be kept safe and its existence disclosed on any sale of the property to which it relates. Please read the 'important notes' on the cover to this licence.

Note: References to "the map" are to the map, which is attached to this licence.
References to "the Agency" are to the Environment Agency or any successor body.

Environment Act 1995
Water Resources Act 1991 as amended by the Water Act 2003
Water Resources (Abstraction and Impounding) Regulations 2006

SCHEDULE OF CONDITIONS

1. SOURCE OF SUPPLY

Underground strata, known as White Chalk, in Bedhampton, Havant, Hampshire.

2. POINTS OF ABSTRACTION

28 artesian springs within the area shown on the map shaded red.

3. MEANS OF ABSTRACTION

Three intakes and pumps at National Grid References SU 70480 06270, SU 70580 06370 and SU 71020 06370 marked "A", "B" and "C", respectively, on the map.

4. PURPOSE OF ABSTRACTION

Public water supply.

5. PERIOD OF ABSTRACTION

All year.

6. MAXIMUM QUANTITY OF WATER TO BE ABSTRACTED DURING THE SPECIFIED PERIOD

6,910	cubic metres per hour
137,000	cubic metres per day
35,770,000	cubic metres per year

Note: an hour means any period of 60 consecutive minutes, a day means a period of 24 hours beginning at midnight and ending at the same time the following day and a year means the 12 month period beginning on 1 April and ending on 31 March.

SCHEDULE OF CONDITIONS continued

7. MEANS OF MEASUREMENT OF WATER ABSTRACTED

The licence holder shall use meters to measure quantities of water abstracted. The licence holder shall provide and install the meters before any abstraction takes place. The licence holder shall position and install the meters in accordance with any written directions given by the Agency. The licence holder shall maintain the meters in such a condition, and if necessary replace them, so as to measure quantities of water abstracted accurately and efficiently. The Licence Holder shall calibrate them regularly, in accordance with the recommendations of the manufacturer or at any time required by the Agency, and shall replace them as necessary. The Licence Holder shall retain evidence of current certification for inspection by the Agency.

The Agency may have regard to its *Abstraction Metering Good Practice Manual* (or equivalent guidance) in directing any of the following: where the meters should be located or how they should be installed; whether the meters measure accurately, and efficiently and are properly maintained; whether it is necessary to require repair or replacement of the meters.

8. RECORDS

The Licence Holder shall take and record readings of the meters specified in condition 7 at the same time each day during the whole of the period during which abstraction is authorised or as otherwise approved in writing by the Agency.

A copy of the record or summary data from it shall be sent to the Agency within 28 days after 31 March each year or within 28 days of being so directed in writing by the Agency.

Each record shall be kept and be made available during all reasonable hours for inspection by the Agency for at least 7 years.

9. FURTHER PROVISIONS

9.1 The total measured flow into the Brockhampton Mill Lake shall be assessed to be the sum of the flows as measured at the following two points:

- a) Between SU 70327 05772 and SU 70386 05666, marked "W" and "X" respectively on the map.
- b) At SU 70595 05609, marked "Y" on the map.

SCHEDULE OF CONDITIONS continued

- 9.2 The abstraction of water shall only take place when the rate of flow in the Brockhampton Mill Lake, as specified above, is equal to or greater than 70 litres per second and the abstraction shall not cause the flow to fall below that rate.
- 9.3 The abstraction of water shall only take from Havant Town springs, in the blue stippled area of the licence map, when the rate of flow in Langstone Mill Stream at SU 71391 04940, marked Z on the licence map is equal to or greater than 15 litres per second and the abstraction shall not cause the flow in the stream to fall below that rate.
- 9.4 The flow conditions in sections 9.1 to 9.3 inclusive only apply three hours either side of low tide as recorded at the tide gauge located on Victory Jetty, Portsmouth (SU 6273 0067).
- 9.5 In complying with sections 9.1 to 9.4 inclusive, the licence holder shall have regard to and act in accordance with the provisions of the procedural arrangement dated 2 February 2010 attached to this licence or any modification or replacement thereof agreed between the Licence Holder and the Agency and endorsed to that effect.

REASONS FOR CONDITIONS

Note: the following information is provided for information only. It does not form part of the licence.

The abstraction is required to be metered to accurately assess water resources demands in the region.

IMPORTANT INFORMATION

The licence holder shall use water abstracted under the terms of this licence in an efficient manner. The Agency will have regard to its Guidance on Water Efficiency (or equivalent guidance) in determining whether water is being used efficiently and any measures required to meet this condition. This is in accordance with the Agency's responsibilities under the Water Resources Act 1991 to secure the proper use of water (Section 19(1)(b)).

Agreed procedure for monitoring and enforcing the flow conditions for licence number 11/42/36.2/1

Dated: 2 February 2010

The variation for licence number 11/42/36.2/1, issued on 18 February 2010 includes flow conditions which are reproduced below:

- 9.1 The total measured flow into the Brockhampton Mill Lake shall be assessed to be the sum of the flows as measured at the following two points:
 - a) Between SU 70327 05772 and SU 70386 05666, marked "W" and "X" respectively on the map.
 - b) At SU 70595 05609, marked "Y" on the map.
- 9.2 The abstraction of water shall only take place when the rate of flow in the Brockhampton Mill Lake, as specified above, is equal to or greater than 70 litres per second and the abstraction shall not cause the flow to fall below that rate.
- 9.3 The abstraction of water shall only take from Havant Town springs, in the blue stippled area of the licence map, when the rate of flow in Langstone Mill Stream at SU 71391 04940, marked Z on the licence map is equal to or greater than 15 litres per second and the abstraction shall not cause the flow in the stream to fall below that rate.
- 9.4 The flow conditions in sections 9.1 to 9.3 inclusive only apply three hours either side of low tide as recorded at the tide gauge located on Victory Jetty, Portsmouth (SU 6273 0067).

The licence also contains a condition (9.5) specifying that in complying with sections 9.1 to 9.4 inclusive, the licence holder shall have regard to and act in accordance with the provisions of the procedural arrangement dated 2 February 2010 attached to this licence or any modification or replacement thereof agreed between the Licence Holder and the Agency and endorsed to that effect.

This is the procedural arrangement referred to in the licence and will ensure that there is clarity about the monitoring and enforcement of these flow conditions.

The map attached to this procedural arrangement identifies the locations of measurement points described below.

Procedure for Brockhampton Mill Lake

- 1 The Licence Holder to monitor telemetered outflows from the springs at Havant, Blue Hole and Mill Pond on a daily basis. Once output from those springs is less than 70 litres per second at any point during the day, the Licence Holder to....
- 2 manually measure flows from Spring Plot and Boiling Meadow springs.
- 3 If the combined output from Havant, Blue Hole, Mill Pond, Spring Plot and Boiling Meadow is less than 70 litres per second, the Licence Holder to inform the Agency within 2 working days of the day when this Condition was identified.
- 4 The Licence Holder is to measure flow in the Brockhampton Mill Lake as measured at Harts Farm Way (indicated as between points W and X on the licence) and Brockhampton Slipway (indicated as point Y on the licence) within 2 working days of notifying the Agency of item 3 above.
- 5 If total flow in the Brockhampton Mill Lake (measured as the sum of flow at point Y and measured flow between points W and X) is less than 140 litres per second, the Licence Holder is to adjust abstraction as necessary to meet the flow condition and to carry out routine weekly measurements to demonstrate compliance with the licence condition. (NB The threshold of 140 l/s has been set to allow monitoring to start before the flow condition of 70 l/s is potentially breached)
- 6 If total flow in the Brockhampton Mill Lake (measured as the sum of flow at point Y and measured flow between points W and X) is not less than 140 litres per second then an agreement must be made between the Licence Holder and the Agency as to an appropriate date for the next manual flow measurement.
- 7 The Agency to carry out gaugings at low flow times to check measurements made by the Licence Holder

Procedure for Langstone Mill Stream

- A The Licence Holder to monitor groundwater levels at Idsworth Well (Grid Reference SU 72936 11403) on a daily basis. Within 1 week of groundwater levels falling below 15m AOD the licence holder shall carry out a flow gauging at Mill Lane on the Langstone Mill Stream at point Z
- B If flow at Mill Lane is less than 30 litres per second then the Licence Holder will adjust abstraction at Town Springs as necessary to meet the flow condition and continue weekly measurements to demonstrate compliance. (NB The threshold of 30 l/s has been set to allow monitoring to start before the flow condition of 15 l/s is potentially breached)

- C If flow at Mill Lane is not less than 30 litres per second then the Licence Holder shall carry out flow gaugings on a monthly basis until groundwater levels at Idsworth rise above 15mAOD for a consecutive period of more than 4 weeks.
- D The Agency to carry out gaugings at low flow times to check measurements made by the Licence Holder

Gauging Standards

All gaugings should be carried out to the relevant British Standard (BS ENO ISO 748:2007). The Agency's Operational Instruction for current meter gauging dated 19 June 2009 is also attached for information. Updated versions of this instruction can be provided by the Agency on request. As the gauging sites are not ideal, we agree to aim to achieve the best gauging result possible.

Risk Assessment

All flow condition sites are tidally affected and each organisation must carry out suitable risk assessment of any work to measure flows.

Collection of Further Data

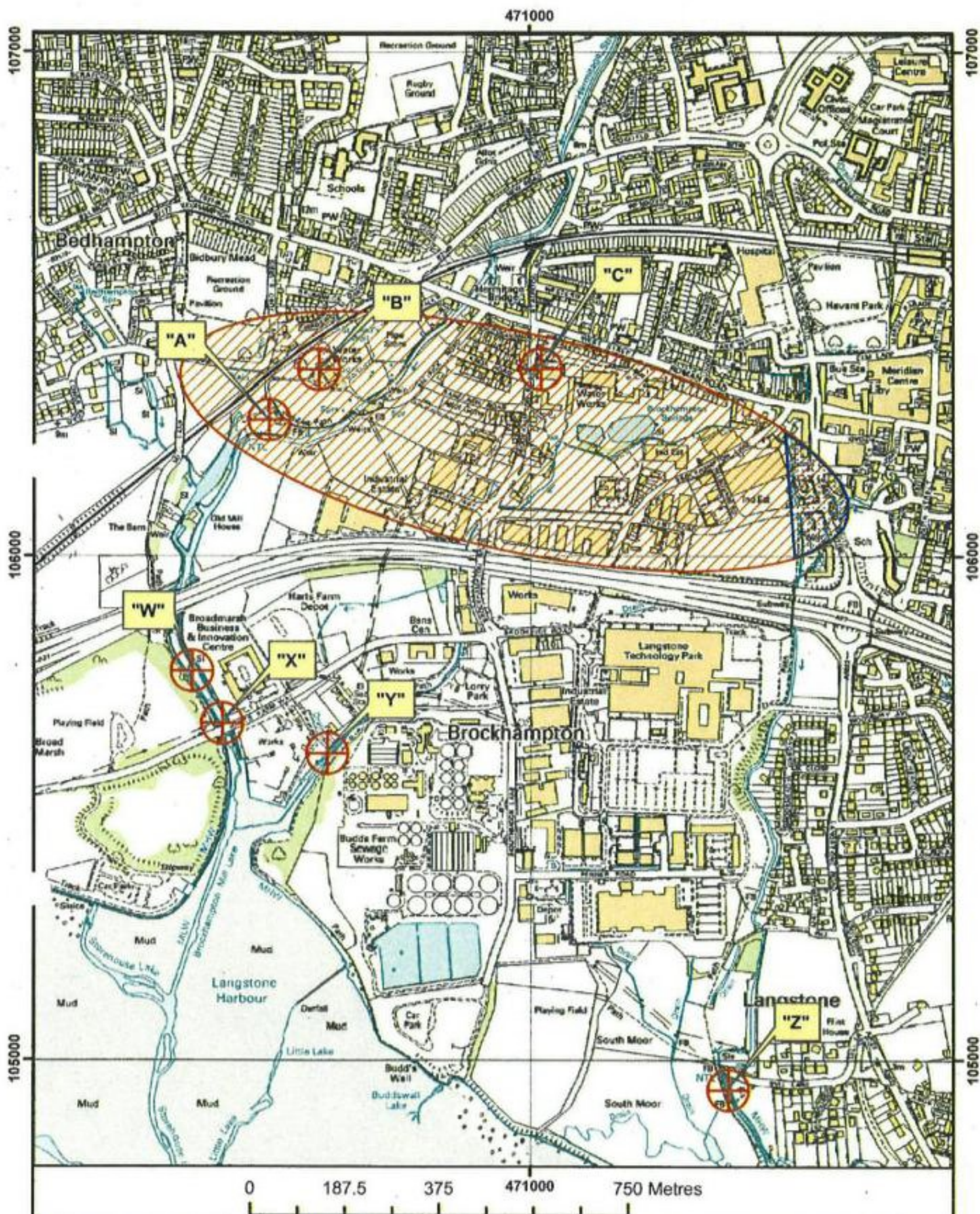
The Agency plans to carry out measurements of flow at Harts Farm Way, Brockhampton Slipway and Mill Lane until the East Hampshire Chichester Chalk model is reviewed which is planned in 2011/12. This data should be used to review the suitability of the Idsworth trigger level for monitoring at Mill Lane by 31 December 2011.

Page 5 of 6	Licence Serial No:	11/42/36.2/1
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IMPORTANT INFORMATION continued

This licence has been issued as a result of the application to vary licence number 11/42/36.2/1.

Licence serial number	Effective date	Expiry date	Summary of changes
11/42/36.2/1	23 December 1965	N/A	Original licence
11/42/36.2/1	26 September 1977	N/A	Amendment 1 – variation of Authorised Abstraction Volumes
11/42/36.2/1	1 April 2002	N/A	Amendment 2 - Change of company name
11/42/36.2/1	18 February 2010	N/A	Reduction in quantities and addition of conditions



MAP ACCOMPANYING LICENCE NUMBER
11/42/36.2/1

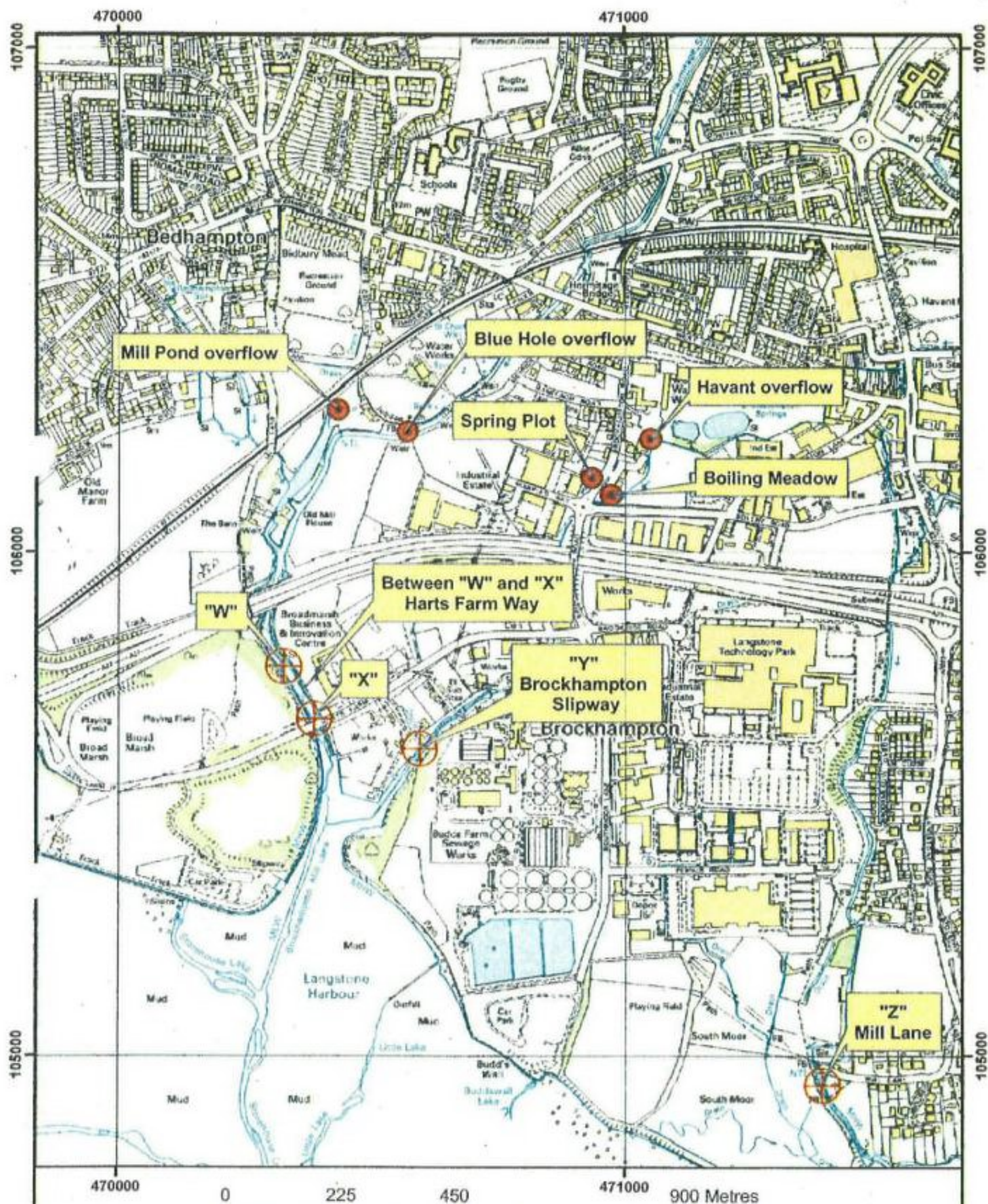
Scale: 1:10,000

Key

-  Area containing springs
-  Area containing Town Springs



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MAP SHOWING MEASUREMENT POINTS FOR
LICENCE NUMBER 11/42/36.2/1

Scale: 1:10,000



Flow measurement points not included in licence



Flow measurement points included in licence



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Appendix B Statutory Designated Sites within 2 km of the Scheme

B.1 Hydrologically Connected Statutory Designated Sites

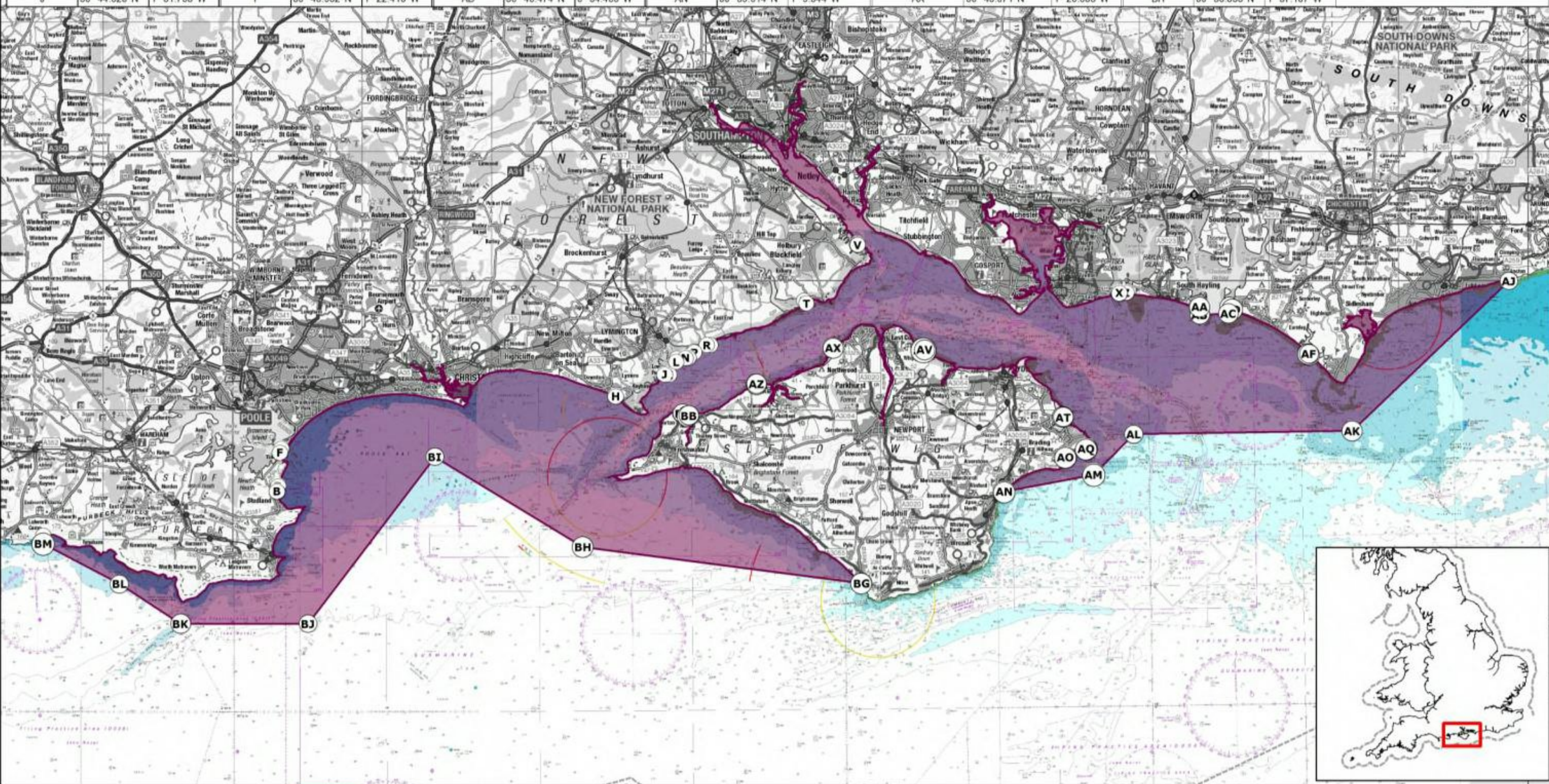
B.2 Functionally Connected Statutory Designated Sites

B.3 The Solent and Dorset Marine Special Protected Area (SPA) Natural England Boundary Map¹⁶¹

¹⁶¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/560627/solent-dorset-boundary-map.pdf

2°15'0"W 2°12'0"W 2°9'0"W 2°6'0"W 2°3'0"W 2°0'0"W 1°57'0"W 1°54'0"W 1°51'0"W 1°48'0"W 1°45'0"W 1°42'0"W 1°39'0"W 1°36'0"W 1°33'0"W 1°30'0"W 1°27'0"W 1°24'0"W 1°21'0"W 1°18'0"W 1°15'0"W 1°12'0"W 1°9'0"W 1°6'0"W 1°3'0"W 1°0'0"W 0°57'0"W 0°54'0"W 0°51'0"W 0°48'0"W 0°45'0"W 0°42'0"W 0°39'0"W 0°36'0"W 0°33'0"W

Point_Letter	Lat	Long	Point_Letter	Lat	Long	Point_Letter	Lat	Long	Point_Letter	Lat	Long	Point_Letter	Lat	Long	Point_Letter	Lat	Long	Point_Letter	Lat	Long	
A	50° 37.329' N	2° 12.500' W	K	50° 44.163' N	1° 31.448' W	U	50° 47.034' N	1° 22.565' W	AE	50° 46.596' N	0° 54.627' W	AO	50° 40.410' N	1° 5.495' W	AY	50° 45.080' N	1° 20.690' W	BI	50° 40.617' N	1° 46.828' W	
B	50° 39.206' N	1° 57.181' W	L	50° 44.526' N	1° 30.981' W	V	50° 49.343' N	1° 18.995' W	AF	50° 44.576' N	0° 49.447' W	AP	50° 40.408' N	1° 5.411' W	AZ	50° 43.589' N	1° 25.724' W	BJ	50° 33.667' N	1° 55.167' W	
C	50° 39.205' N	1° 57.158' W	M	50° 44.669' N	1° 30.568' W	W	50° 49.387' N	1° 19.025' W	AG	50° 44.562' N	0° 49.468' W	AQ	50° 40.747' N	1° 4.144' W	BA	50° 43.568' N	1° 25.710' W	BK	50° 33.667' N	2° 3.500' W	
D	50° 39.424' N	1° 57.110' W	N	50° 44.702' N	1° 30.391' W	X	50° 47.244' N	1° 1.826' W	AH	50° 44.523' N	0° 49.390' W	AR	50° 40.750' N	1° 4.052' W	BB	50° 42.284' N	1° 30.194' W	BL	50° 35.333' N	2° 7.500' W	
E	50° 39.426' N	1° 57.121' W	O	50° 44.710' N	1° 30.180' W	Y	50° 47.216' N	1° 1.846' W	AI	50° 44.535' N	0° 49.372' W	AS	50° 40.748' N	1° 4.040' W	BC	50° 42.278' N	1° 30.197' W	BM	50° 37.000' N	2° 12.500' W	
F	50° 40.820' N	1° 56.990' W	P	50° 44.920' N	1° 29.806' W	Z	50° 47.243' N	1° 1.367' W	AJ	50° 47.463' N	0° 36.229' W	AT	50° 42.069' N	1° 5.610' W	BD	50° 42.269' N	1° 30.244' W	Lat / Long coordinates based on GCS_WGS_1984 WKID: 4326 Authority: EPSG Transformation: OSGB_1936_to_WGS_1984_Petroleum			
G	50° 40.979' N	1° 56.915' W	Q	50° 44.952' N	1° 29.614' W	AA	50° 46.603' N	0° 56.572' W	AK	50° 41.333' N	0° 46.667' W	AU	50° 42.082' N	1° 5.624' W	BE	50° 42.383' N	1° 30.597' W				
H	50° 43.124' N	1° 34.973' W	R	50° 45.218' N	1° 28.975' W	AB	50° 46.267' N	0° 56.562' W	AL	50° 41.333' N	1° 1.000' W	AV	50° 44.964' N	1° 14.655' W	BF	50° 42.375' N	1° 30.599' W				
I	50° 43.117' N	1° 34.982' W	S	50° 45.219' N	1° 28.738' W	AC	50° 46.303' N	0° 54.684' W	AM	50° 39.667' N	1° 3.667' W	AW	50° 44.932' N	1° 14.720' W	BG	50° 35.234' N	1° 18.939' W				
J	50° 44.026' N	1° 31.758' W	T	50° 46.932' N	1° 22.416' W	AD	50° 46.474' N	0° 54.400' W	AN	50° 39.014' N	1° 9.544' W	AX	50° 45.071' N	1° 20.668' W	BH	50° 36.833' N	1° 37.167' W				



Potential Marine Special Protection Area
Solent and Dorset Coast
Boundary Map
Map 1 of 1

Note:
The boundary shown is derived from large scale Ordnance Survey MasterMap. The landward extent follows OS MasterMap Mean High Water or Mean Low Water, except between the indicated points, is liable to change and may not match the background detail on this map. Definitive larger scale maps are available on request.

- Potential Marine Special Protection Area
89078.26 Hectares
- Boundary Coordinates
- 12NM Territorial Sea Limit

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0 3.25 6.5 13 Km

0 1.75 3.5 7 NM

Scale 1:300,000 at A3

Grid North

EU Site Code: UK999999
Site Version: 20160823
Latitude: 50° 44' 14" N
Longitude: 1° 0' 23" W
Coordinate System: British National Grid
Projection: Transverse Mercator

Area of Marine SPA: 89078.26 Ha
890.78 sq Km

Grid Ref: S2702955
Theme ID: 999999
Map Version: 3.0
Printed: 24/05/2016

Appendix C. Statutory Designated Sites Criteria

C.1 Chichester and Langstone Harbours SPA Site

European site name(s) and status:

Chichester and Langstone Harbours SPA (SPA EU code UK9011011),
Hampshire; West Sussex,
Area: 5810.03 ha

10.11 Chichester and Langstone Harbours are located on the south coast of England in Hampshire and West Sussex. They are large, sheltered estuarine basins comprising extensive sand and mudflats exposed at low tide. The two harbours are joined by a stretch of water that separates Hayling Island from the mainland. Tidal channels drain the basin and penetrate far inland. The mud-flats are rich in invertebrates and also support extensive beds of algae, especially Enteromorpha species, and eelgrasses Zostera spp. The basin contains a wide range of coastal habitats supporting important plant and animal communities. The site is of significance for water birds, especially in migration periods and in winter. It also supports important colonies of breeding terns.

List of interest features:

- ARTICLE 4.2 QUALIFICATION (79/409/EEC)
- ARTICLE 4.2 QUALIFICATION (79/409/EEC): an internationally important assemblage of birds. Over winter the area regularly supports: 93230 waterfowl;
- Branta bernicla; Dark-bellied Brent goose (Non-breeding). Over winter the area regularly supports: 5.7% of the population;
- Tadorna; Common shelduck (Non-breeding). Over winter the area regularly supports 3.3% of the population in Great Britain.
- Anas penelope; Eurasian wigeon (Non-breeding). Over winter the area regularly supports: 0.7% of the population in Great Britain
- Anas crecca; Eurasian teal (Non-breeding). Over winter the area regularly supports: 0.5% of the population;
- Anas acuta; Northern pintail (Non-breeding). Over winter the area regularly supports: 1.2% of the population in Great Britain;
- Anas clypeata; Northern shoveler (Non-breeding). Over winter the area regularly supports: 1% of the population in Great Britain;
- Mergus serrator; Red-breasted merganser (Non-breeding). Over winter the area regularly supports: 3% of the population in Great Britain
- Charadrius hiaticula; Ringed plover (Non-breeding). Over winter the area regularly supports 3% of the population in Great Britain
- Pluvialis squatarola; Grey plover (Non-breeding). Over winter the area regularly supports 2.3% of the population
- Calidris alpina; Dunlin (Non-breeding). Over winter the area regularly supports 3.2% of the population;
- Calidris alba; Sanderling (Non-breeding). Over winter the area regularly supports 0.2% of the population;
- Limosa japonica; Bar-tailed godwit (Non-breeding). Over winter the area regularly supports: 3.2% of the GB population 5-year peak mean;

	• Numenius arquata; Eurasian curlew (Non-breeding). Over winter the area regularly supports: 1.6% of the population in Great Britain • Tringa totanus; Common redshank (Non-breeding). Over winter the area regularly supports: 1% of the population • Arenaria interpres; Ruddy turnstone (Non-breeding). Over winter the area regularly supports: 0.7% of the population in Great Britain • • ARTICLE 4.1 QUALIFICATION (79/409/EEC): • Sterna sandvicensis; Sandwich tern (Breeding). During the breeding season the area regularly supports: 0.2% of the GB breeding population; • Sterna hirundo; Common tern (Breeding). During the breeding season the area regularly supports: 0.3% of the GB breeding population; • Sterna albifrons; Little tern (Breeding). During the breeding season the area regularly supports 4.2% of the GB breeding population 5 year mean.
Sensitivities of the site ¹⁶² :	The site is vulnerable to: • Pollution to groundwater • Changes in abiotic flows • Fishing and harvesting aquatic resources • Outdoor sports and leisure activities • Langstone Harbour has relatively poor availability of roosting sites for wintering birds which restricts its ability to support waders and wildfowl interests in relation to other parts of the estuary. Alerts have been triggered for 10 out of the 15 species assessed for Chichester and Langstone Harbours SPA, and also for the waterbird assemblage. For the seven wader species for which alerts have been triggered, comparison of the site and regional trends suggests that the alerts may be driven by broadscale changes in distribution. However, for the three wildfowl species (Shelduck, Shoveler and Teal) the comparison suggests that the alerts may be driven by site-specific pressures. Note that in the case of Teal, high numbers were sustained at the site for several years during the baseline period, but these levels have not been achieved subsequently in spite of increases elsewhere (WEBBS, 2020)¹⁶³
Condition of the SPA:	The marine condition assessment for this site (found at the following website) is incomplete: https://designatedsites.naturalengland.org.uk/Marine/MarineFeatureCondition.aspx?SiteCode=UK9011011&SiteName=&SiteNameDisplay=Chichester+and+Langstone+Harbours+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= Component Sites of Special Scientific Interest are Chichester Harbour SSSI¹⁶⁴ and Langstone Harbour SSSI. Chichester and Langstone Harbour SSSI: The site comprises 37 units consisting the following habitats: littoral sediment, neutral grassland, Fen marsh and swamp, Broadleaved mixed and yew woodland and dwarf shrub heath. See following link for unit condition:

¹⁶² <http://archive.jncc.gov.uk/pdf/SPA/UK9011011.pdf>

¹⁶³ https://app.bto.org/webs-reporting/?tab=alerts&dm_i=IG4,6KRPF,39H0XM,Q5QA9,1

¹⁶⁴ <https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1003245&ReportTitle=Chichester Harbour SSSI>

<https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1003245&ReportTitle=Chichester Harbour SSSI>

Langstone Harbour SSSI:

The site comprises 14 units consisting of the following habitats: Littoral sediment, arable and horticulture and neutral grassland.

See following link for unit condition:

<https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1001182&ReportTitle=Langstone Harbour SSSI>

Conservation Objectives:

- Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:
- The extent and distribution of the habitats of qualifying species;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Supplementary advice for overwintering bird species for which WeBS alerts have been given¹⁶⁵: shelduck, Shoveler, Teal, Red-breasted Merganser, grey Plover, Ringed Plover, Curlew, Bar-tailed Godwit, Sanderling, Dunlin:

- Supporting habitat: water quality – contaminants. Restrict aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels
- Supporting habitat air quality: Maintain concentrations and deposition of air pollutants at below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System.
- Supporting habitat: extent and distribution of supporting habitat for the non-breeding season: Restore the extent and distribution of suitable habitat (either within or outside the site boundary) which supports the feature for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing and feeding) at: Intertidal sediment = 2,935.49 ha, Intertidal seagrass beds = 261.065 ha, Intertidal rock = 49.69 ha, Saltmarsh = 626.48 ha and Coastal lagoons = 22.40 ha. Freshwater and coastal grazing marsh = unquantified.
- Supporting habitat: food availability. Maintain the distribution, abundance and availability of key food and prey items (varied for each species of bird).
- Supporting habitat: landform: Maintain a high density of channel networks within intertidal feeding areas. Maintain the width of beach sections. Maintain open and unobstructed terrain around nesting, roosting and feeding sites.
- Supporting habitat: water quality – nutrients: Restore water quality to mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features.
- Supporting habitat: water quality – turbidity: Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat.

¹⁶⁵ https://app.bto.org/webs-reporting/?tab=alerts&dm_i=IG4,6KRPF,39H0XM,Q5QA9,1

Supplementary advice for breeding bird species; common tern, arctic tern and sandwich tern:

- Breeding population: abundance. Maintain the size of the breeding population (numbers vary according to species)¹⁶⁶
- Supporting habitat: extent and distribution of supporting habitat for the breeding season. Restore the extent, distribution and availability of suitable breeding habitat which supports the feature for all necessary stages of its breeding cycle
- Supporting habitat: food availability. Maintain the distribution, abundance and availability of key food and prey items.
- Supporting habitat: landform. availability of shallow sloping nesting sites, grading to <30 cm above water level, restricting the probability that they will flood.
- Supporting habitat: water quality – contaminants. Restrict aqueous contaminants to levels equating to High Status according to Annex VIII and Good Status according to Annex X of the Water Framework Directive, avoiding deterioration from existing levels.
- Supporting habitat: water quality – nutrients. Restore water quality to mean winter dissolved inorganic nitrogen levels where biological indicators of eutrophication (opportunistic macroalgal and phytoplankton blooms) do not affect the integrity of the site and features.
- Supporting habitat: water quality – turbidity. Maintain natural levels of turbidity (e.g. concentrations of suspended sediment, plankton and other material) across the habitat.

¹⁶⁶<https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9011011&SiteName=&SiteNameDisplay=Chichester+and+Langstone+Harbours+SPA&countyCode=&responsiblePerson=>

C.2 Chichester and Langstone Harbours Ramsar Site

European site name(s) and status:	Chichester and Langstone Harbours Ramsar Site. The site is legally underpinned by Chichester Harbour SSSI and Langstone Harbour SSSI Hampshire; West Sussex, Area: 5810 ha Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes extensive intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes. The mudflats support beds of <i>Zostera</i> and <i>Enteromorpha</i>, whilst the lower saltmarsh is dominated by <i>Spartina anglica</i>, with a more varied community at higher levels. Although many areas bordering the site have been developed, some grassland and brackish/freshwater marshes with reedbeds remain. Peak counts of wintering water birds regularly exceed 20,000 individuals, including internationally important numbers*.
List of interest features:	Criterion 1 – Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes. Criterion 5 – Assemblages of international importance: • 76,480 waterfowl, count in winter (5-year peak mean 1998/99 – 2002/2003) Criterion 6 – species/populations occurring at levels of international importance. Qualifying species/populations (as identified at designation) • Species with peak counts in spring/autumn: Ringed plover; • Black-tailed godwit; and • Common redshank. Species with peak counts in winter: • Dark-bellied Brent goose; • Common shelduck <i>Tadorna</i>; • Grey plover; • Dunlin. Species/populations identified subsequent to designation for possible future consideration under criterion 6: Little tern.¹⁶⁷
Sensitivities of the site ¹⁶⁸ :	• Erosion • Eutrophication • Pollution – domestic sewage • Langstone Harbour has relatively poor availability of roosting sites for wintering birds which restricts its ability to support waders and wildfowl interests in relation to other parts of the estuary¹⁶⁹.

¹⁶⁷ <https://jncc.gov.uk/jncc-assets/RIS/UK11013.pdf>

¹⁶⁸ <http://archive.jncc.gov.uk/pdf/RIS/UK11013.pdf>

¹⁶⁹ <https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1001182&ReportTitle=Langstone Harbour SSSI>

The Ramsar is legally underpinned by Chichester Harbour SSSI and Langstone Harbour SSSI:

Chichester Harbour SSSI; condition assessment surveys undertaken February and March 2019:

Littoral Sediment; (units 002, 008, 010, 011, 012, 015, 017, 020, 022, 023, 024, 026, 027, 030, 031, 036 and 037), Unfavourable / no change. The adverse condition reason is freshwater pollution - water pollution - agriculture/run off, freshwater pollution - water pollution – discharge. The water environment of the unit is assessed as unfavourable for the interest features on the weight of evidence on elevated levels of inorganic nitrogen and biological indication of eutrophication shown by the abundance of macroalgae. There is poor evidence of a reducing nutrient status adequate to substantially prevent the growth of dense macroalgae mats. A very large part of the nitrogen load input is carried by tidal flow from the Solent and relatively little by minor rivers into the arms of the harbour but where these inputs may have more significance in encouraging the growth of macroalgae¹⁷⁰

Langstone Harbour SSSI; condition assessment surveys undertaken August 2018:

Littoral Sediment; (units 003, 006, 007, 009, 010, 011, 013 and 014) Unfavourable / no change. The water environment of the unit is assessed as unfavourable for the interest features on the weight of evidence on inorganic nitrogen and biological indication of eutrophication shown by the abundance of macroalgae but recovering on the basis of a large reduction in nutrient inputs through diversion of waste water. There remains a significant nitrogen load input carried by tidal flow from the Solent and less so by minor rivers into the head of the harbour.

Conservation Objectives:

For Ramsar sites, a decision has been made by Defra and Natural England not to produce Conservation Advice packages, instead focussing on the production of High-Level Conservation Objectives. As the provisions on the Habitats Regulations relating to HRAs extend to Ramsar sites, Natural England considers the Conservation Advice packages for the overlapping European Maritime Site designations to be, in most cases, sufficient to support the management of the Ramsar interests. Conservation objectives can therefore be found in the Solent SAC Maritime Site¹⁷¹

¹⁷⁰ <https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1003245&ReportTitle=Chichester Harbour SSSI>

¹⁷¹

C.3 Solent Maritime SAC

European site name(s) and status:	Solent Maritime SAC. The site is legally underpinned by Bouldnor and Hamstead Cliffs SSSI, Chichester Harbour SSSI, Eling and Bury Marshes SSSI, Hurst Castle and Lymington River Estuary SSSI, Hythe to Calshot Marshes SSSI, King's Quay Shore SSSI, Langstone Harbour SSSI, Lee-on-The Solent to Itchen Estuary SSSI, Lincegrove and Hackett's Marshes SSSI, Lower Test Valley SSSI Medina Estuary SSSI, Newtown Harbour SSSI, North Solent SSSI Thorness Bay SSSI, Upper Hamble Estuary and Woods SSSI and Yar Estuary SSSI Hampshire; West Sussex, Area: 11243.12 ha
List of interest features:	Annex I habitats that are a primary reason for selection of this site Spartina swards Atlantic salt meadows Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Sandbanks which are slightly covered by sea water all the time • Mudflats and sandflats not covered by seawater at low tide • Coastal lagoons * Priority feature • Annual vegetation of drift lines • Perennial vegetation of stony banks • Salicornia and other annuals colonizing mud and sand • Shifting dunes along the shoreline with Ammophila arenaria (white dunes) • Annex II species present as a qualifying feature, but not a primary reason for site selection: • Desmoulin's whorl snail
Sensitivities of the site ¹⁷² :	The site is vulnerable to: • Pollution to groundwater • Changes in abiotic flows • Fishing and harvesting aquatic resources • Outdoor sports and leisure activities • Langstone Harbour has relatively poor availability of roosting sites for wintering birds which restricts its ability to support waders and wildfowl interests in relation to other parts of the estuary¹⁷³
Condition of the SAC ¹⁷⁴ :	• Sandbanks which are slightly covered by sea water all the time: assessment survey undertaken 01/06/2018; 100 % Unfavourable, no change; • Mudflats and sandflats not covered by seawater at low tide: assessment survey undertaken 15/03/2018; 100 % Unfavourable, no change; • Coastal lagoons: assessment survey undertaken 08/02/2018; 100 % Favourable • Annual vegetation of drift lines – no information available • Perennial vegetation of stony banks – no information available • Salicornia and other annuals colonising mud and sand – no information available • Spartina swards – no information available

¹⁷² <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030059.pdf>

¹⁷³ <https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1001182&ReportTitle=Langstone Harbour SSSI>

¹⁷⁴ <https://designatedsites.naturalengland.org.uk/Marine/MarineFeatureConditionDirect.aspx?SiteCode=UK0030059&SiteName=solent-maritime-sac&SiteNameDisplay=Solent Maritime SAC&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=>

	Atlantic salt meadows – no information available • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("White dunes") – no information available • Estuaries – no information available • Desmoulin's whorl snail, – no information available • Where no recent information on the condition of the SAC habitats is available, the condition of the underpinning SSSIs can be viewed¹⁷⁵
Conservation Objectives:	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species. • The structure and function (including typical species) of qualifying natural habitats. • The structure and function of the habitats of qualifying species. • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. • The populations of qualifying species, and, • The distribution of qualifying species within the site. Supplementary advice for coastal lagoon habitat¹⁷⁶. The nearest Coastal lagoons to the Heritage Stream channel entering Langstone harbour are located approximately 1.5 km west on Farlington Marshes. Coastal Lagoons are isolated and not hydrologically linked to the Scheme.

¹⁷⁵ [https://designatedsites.naturalengland.org.uk/SiteGeneralDetail.aspx?SiteCode=UK0030059&SiteName=solent maritime sac&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=](https://designatedsites.naturalengland.org.uk/SiteGeneralDetail.aspx?SiteCode=UK0030059&SiteName=solent%20maritime%20sac&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=)

¹⁷⁶ [https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK0017073&SiteName=solent&SiteNameDisplay=Sole nt+and+Isle+of+Wight+Lagoons+SAC&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=](https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK0017073&SiteName=solent&SiteNameDisplay=Sole%20nt%20and%20Isle%20of%20Wight%20Lagoons%20SAC&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=)

C.4.1 Sussex bat SACs – Singleton and Cocking Tunnels SAC

European site name(s) and status:	Singleton and Cocking Tunnels SAC (UK0030337) Surrey, East and West Sussex Area: 2.45 ha
List of interest features:	Annex II species present as a qualifying feature, but not a primary reason for site selection • Barbastelle • Bechstein's bat
Sensitivities of the site ¹⁷⁷ :	• Modification of cultivation practices • Forest and Plantation management & use • Changes in biotic conditions • Other ecosystem modifications
Condition of the SAC ¹⁷⁸ :	The SAC is legally underpinned by the Singleton and Cocking Tunnels SSSI. The site comprises 4 units comprising built up areas and gardens and all are in favourable condition ¹⁷⁹ .
Conservation Objectives:	The Conservation objectives comprise an extensive list of objectives associated with the conservation of the SAC habitat and can be found at the following weblink: http://publications.naturalengland.org.uk/publication/6518329883754496?category=6528471664689152 Supplementary Advice for Qualifying Feature Bechstein's bat:

¹⁷⁷ <https://sac.jncc.gov.uk/site/UK0012716>

¹⁷⁸ <https://designatedsites.naturalengland.org.uk/Marine/MarineFeatureConditionDirect.aspx?SiteCode=UK0030059&SiteName=solent maritime sac&SiteNameDisplay=Solent Maritime>

SAC&countyCode=&responsiblePerson=&SeaArea=&IFCAAarea=&NumMarineSeasonality=

¹⁷⁹ <https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1003475&ReportTitle=Singleton and Cocking Tunnels SSSI>

C.4.2 Sussex bat SACs – Ebernoe Common SAC

European site name(s) and status:	Ebernoe Common SAC UK0012715 West Sussex Area: 234.05
List of interest features:	Ebernoe Common is an extensive complex of ancient woodland and former wood pasture in West Sussex. The site lies on the Cretaceous Weald Clay. The central core of the site, approximately a third of the total area, forms Ebernoe Common National Nature Reserve. It is a varied site with a range of woodland communities and age structures which have developed due to differences in underlying soils and past management. This range of conditions together with a long continuity of woodland cover has in turn resulted in the site supporting an outstanding diversity of species: Barbastelle and Bechstein's bats, which favour ancient woodland, breed in the site because it provides suitable roosting and feeding habitats. While Bechstein's feed exclusively in the woodland, Barbastelles commute into the surrounding countryside using the woodland corridors which branch out from the site. In addition, the native trees, particularly those with old growth characteristics, support rich lichen and fungal communities, including a number of rare and scarce species, and the woodland complex as a whole supports a diverse breeding bird assemblage¹⁸⁰. Annex I habitats that are a primary reason for selection of this site¹⁸¹ - Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion roburi-petraeae or Ilici-Fagenion) Ebernoe Common has an extensive block of beech <i>Fagus sylvatica</i> high forest and former wood-pasture over dense holly Ilex aquifolium, and has a very rich epiphytic lichen flora, including <i>Agonimia octospora</i> and <i>Catillaria atropurpurea</i>. It represents Atlantic acidophilous beech forests in the south-eastern part of the habitat's UK range. The beech woodland is associated with other woodland types, open glades and pools, which contribute to a high overall diversity. The woods are important for a number of bat species, in particular Bechstein's bat (<i>Myotis bechsteinii</i>) and barbastelle (<i>Barbastella barbastellus</i>). Annex II species that are a primary reason for selection of this site - Barbastelle A maternity colony of barbastelles <i>Barbastella barbastellus</i> utilises a range of tree roosts in this area of 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles, which has a dense understorey of holly Ilex aquifolium as well as open glades and open water. Maternity roost sites are usually in dead tree

¹⁸⁰Natural England (February 2019). European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Ebernoe Common Special Area of Conservation (SAC) Site Code: UK0012715

¹⁸¹ <https://sac.jncc.gov.uk/site/UK0012715>

stumps, but the species appears to be present throughout the year, with individuals utilising a range of roost sites in tree holes and under bark.

- Bechstein's bat *Myotis bechsteinii*

A maternity colony of Bechstein's bat *Myotis bechsteinii* is associated with this area of old sessile oak woods with *Ilex* and *Blechnum* in the British Isles. Roosts are mainly in old woodpecker holes in the stems of live mature oak *Quercus petraea* trees.

Sensitivities of the site:	• Modification of cultivation practices • Forest and Plantation management & use • Human induced changes in hydraulic conditions • Changes in biotic conditions • Other ecosystem modifications
Condition of the SAC:	Ebernoe Common SAC is legally underpinned by Ebernoe Common SSSI. The site comprises 19 units and in summary 99 % of the site is in favourable condition with 1 % (unit 007) of the site in unfavourable / recovering.
Conservation Objectives:	The Conservation objectives comprise an extensive list of objectives associated with the conservation of the SAC habitat and can be found at the following weblink: Ebernoe SAC: http://publications.naturalengland.org.uk/publication/6255629165395968?category=6528471664689152 Supplementary Advice for Qualifying Features: Bechstein's bat: • Maintain the abundance of the hibernating population, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent; • Maintain the abundance of the breeding population at a level which is above 152 adult females, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent; • Restore any core areas of feeding habitat outside of the SAC boundary that are critical to Bechstein's Bat during their breeding and hibernation period.

Appendix D. Plan of Committed Developments



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