



Environmental Statement Non-Technical Summary

Langstone FCERM Scheme

February 2025

Langstone FCERM Scheme Environmental Statement

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1. Introduction

This document provides a non-technical summary (NTS) of the Environmental Statement (ES) prepared in support of the planning application submitted to Havant Borough Council (HBC) and marine licence to the Marine Management Organisation (MMO) in respect of the Langstone Flood and Coastal Erosion Risk Management (FCERM) Scheme.

The Langstone FCERM Scheme covers approximately 1 km of coastline in Havant, Hampshire. The Scheme extends from SU 7147 0494 in the west to SU 7191 0501 in the east. The Scheme will improve the standard of flood defences and coastal erosion protection against tidal flooding to the A3023 road link to Hayling Island and the village of Langstone. The Core Scheme consists of five frontages, comprising of frontages 1A, 2, 3, 4 and 5. The Additional Scheme (frontages 1B and 6) is not being taken forward at this time. **Figure 1** illustrates the Core Scheme for which approvals are being sought.

The proposed coastal defences consist of a mix of earth bunds, reinforced concrete sea walls and sheet pile walls. A summary description of each frontage is described below.

- **Frontage 1A: Billy Line North** – The flood defence comprises of a raised earth embankment and follows the line of the existing Billy Line cycleway (a National Cycle Route 2 cycleway). The existing cycle path is to be upgraded to a new 3-metre-wide shared path for pedestrians and cyclists which sits on top of the flood embankment.
- **Frontage 2: Billy Line South** - The design for Frontage 2 consists of a sheet-piled wall. Raised earth embankments are included where the defence alignment needs to cross existing utility pipes. The existing cycle path is to be upgraded to a new 3 metre wide shared path for pedestrians and cyclists which sits adjacent to the sheet-piled wall. Frontage 2 ties in with Frontage 1A and the existing higher levels on the A3023 road.
- **Frontage 3: A3023 road to 9 Coastguard Cottages (The Look Out).** Frontage 3 consists of a continuous flood defence that largely comprises of four flood defence structures. These structures include the A3023 flood wall, Ship Inn car park raised earth bund, Ship Inn flood wall and Ship Inn Annex flood wall. A flood gate is also to be provided between the Ship Inn and the Ship Inn Annex flood walls.
- **Frontage 4: The Look Out to No. 24 Langstone High Street (the Winklemarket).** Frontage 4 consists of new reinforced concrete flood walls in front of the existing garden walls that run along the frontage. The existing footpath is to be upgraded to a new 1.5 metre wide footpath through the construction of a new quay wall. One flood gate (at Green Cottage) and one demountable flood barrier (at the pedestrian access adjacent to the Watch Tower) will be provided to ensure robust continuity of the defence.
- **Frontage 5: Langstone High Street to the field north of the Royal Oak.** Frontage 5 consists of a continuous flood defence that largely comprises of five structures. These structures include the High Street flood gates, the Royal Oak flood wall, the allotment flood wall, the Footpath flood wall that runs west of the Mill Pond, and an earth embankment in the field north of the Royal Oak. Demountable flood barriers will be provided between the section transitions and flood gates will be provided at No.21 High Street.

The aims of the **Langstone FCERM Scheme** are as follows:

- To reduce the impacts of flooding and erosion on residents, businesses, the local economy, and the A3023 at Langstone.
- To develop a detailed design that is affordable and represents best value for money, ensuring the optimal use of resources.
- To develop a detailed design which is acceptable to the employer, statutory and non-statutory consultees, wider stakeholders, and residents and to have engaged with the local community.
- Design buildable coastal defences that are sympathetic to the heritage and landscape of the area and achieve wider benefits such as place-making, regeneration and improved amenity.
- Enhance and improve the environment and provide a minimum of 10% biodiversity net gain through the scheme.
- Actively seek efficiencies in the design, construction and operation of the completed scheme.

The objectives of the proposed scheme are to address the current flood and erosion risk and are listed below:

- To construct new coastal defences providing a present-day Standard of Protection (SoP) of 0.5% AEP from tidal still water for Langstone, including a freeboard for uncertainties. This SoP exceeds the minimum recommendation by the Portchester to Emsworth Strategy (1.3% AEP) at the outset (the SoP will decline over time as a function of sea level rise).
- To reduce the erosion risk along the Frontages.
- To provide a scheme that is fully compliant with current standards, guidance, and legislation relevant to the United Kingdom (UK) jurisdiction.
- To construct new coastal defences for 50-year design life with minimal maintenance and operation requirements.

The new structures are designed to last 50 years. **Figure II** illustrates the present-day Environment Agency Flood Zones 2 and 3 under a 1 in 1000 and 1 in 200 year Do Nothing scenario.

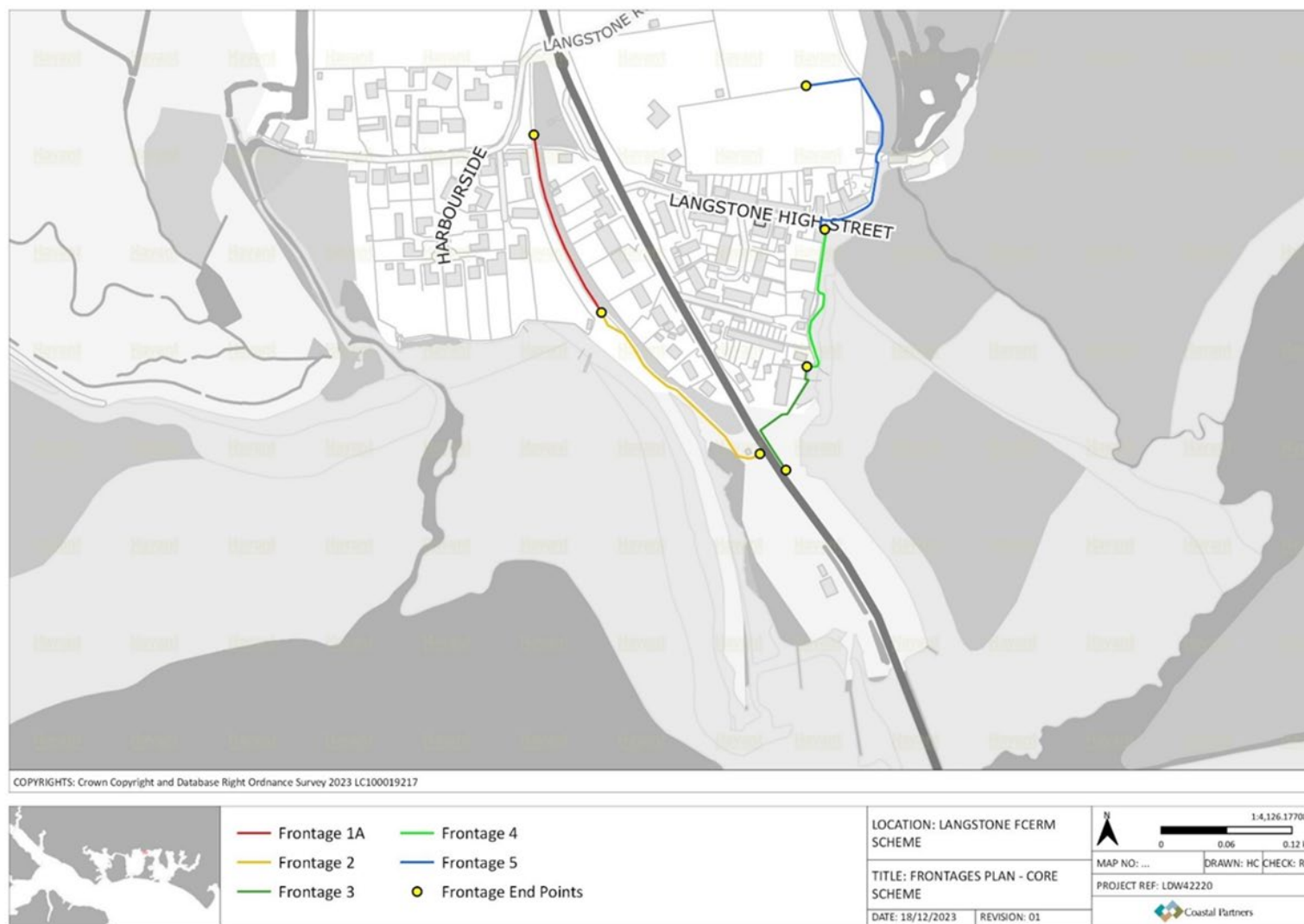
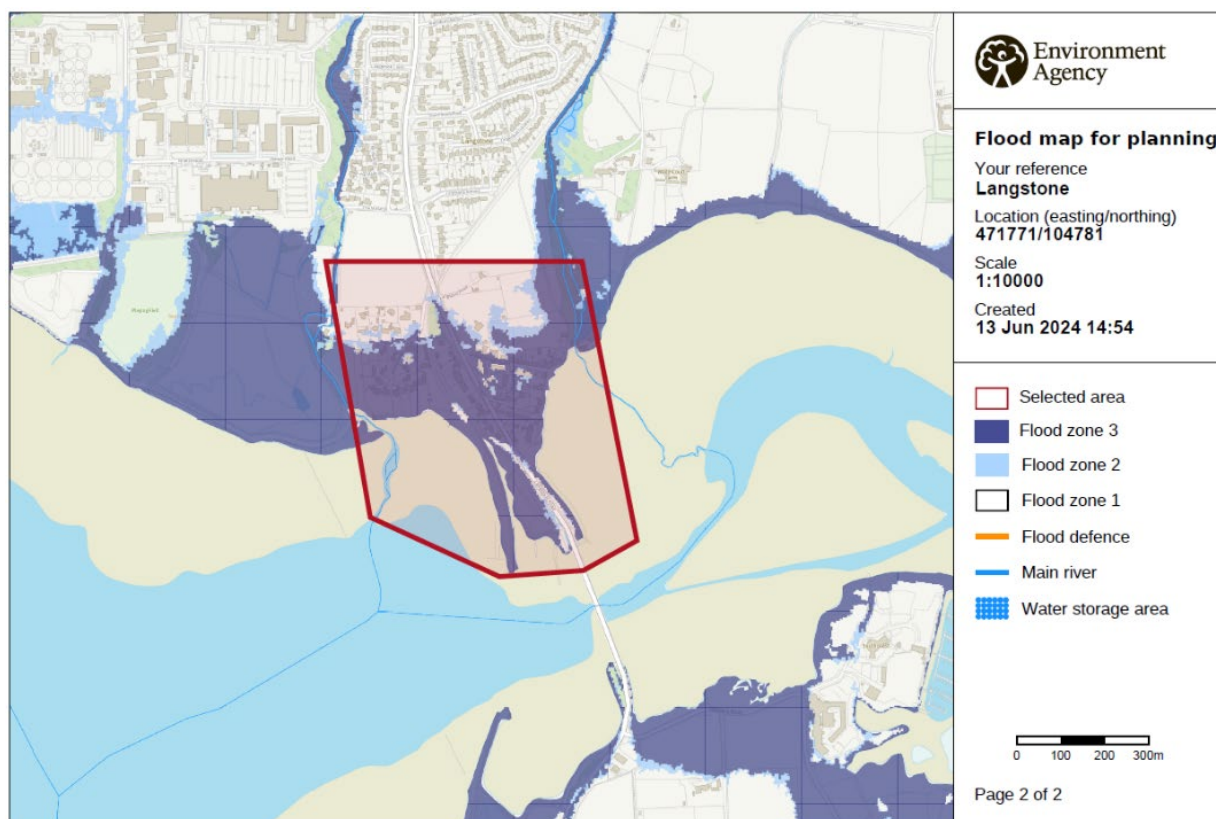


Figure I: Langstone FCERM Scheme – Frontages Plan



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Figure II: Flood risk around the Langstone scheme area (source <https://flood-map-for-planning.service.gov.uk/>)

2. Coastal Partners

Coastal Partners was formed in 2012 to provide a comprehensive coastal management service on behalf of five partner authorities: Havant Borough Council, Portsmouth City Council, Fareham Borough Council, Gosport Borough Council and Chichester District Council.

Coastal Partners is a team of specialist coastal officers and engineers that manages coastal erosion and flood risk management across the partner authorities' coastline, some 246km in total. All members of the Coastal Partners team are employed directly by the partner authorities.

Further information of Coastal Partners and the work that we do is available here: <https://coastalpartners.org.uk/authority/havant/>

The Environmental Statement has been prepared by Coastal Partners on behalf of Havant Borough Council as the Applicant.

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3. Strategic Approach

The North Solent Shoreline Management Plan (SMP) (NFDC, 2010) covers the coastline between Selsey Bill, in the east and Hurst Spit, in the west, including Portsmouth, Langstone and Chichester Harbours. The SMP was adopted by Havant Borough Council (HBC) in 2010 and sets out the sustainable coastal defence policies over the next 100 years.

The Portsmouth to Emsworth Flood and Erosion Risk Management Strategy (PEMS) (Environment Agency, 2012) was approved in 2013 and covers 27km of the northern coast of Portsmouth, Langstone and Chichester Harbours. The strategy divided the coastline into nine sub-frontages and the proposed Langstone FCERM Scheme falls within PEMS sub-frontage 'Langstone to Southmoor'. The PEMS recommended upgrading the existing defences to increase the current Standard of Protection (SoP) to 1.3 % Annual Exceedance Probability (AEP) (1 in 75 year) sustained for 100 years.

4. Planning Approach

This Environmental Statement support a planning application and marine licence relating to the core Langstone Scheme proposals and this document provides a summary of the assessment of any likely significant environmental impacts arising from the Scheme. This assessment is supported by a Habitats Regulations Assessment and Water Framework Directive Assessment to confirm its environmental acceptability.

5. The Existing Environment

5.1 Environmentally Protected Sites

Langstone and its surroundings support a host of habitats and species of significant ecological and nature conservation importance. This is reflected in the number of sites that have gained International/European and National environmental designation status.

With reference to International/European Protected Sites, the proposed scheme lies within and adjacent to the Solent Maritime SAC (Special Area of Conservation) and the Chichester and Langstone Harbours SPA (Special Area of Conservation). Chichester and Langstone Harbours Ramsar site also covers the same extent as the Chichester and Langstone Harbours SPA. The proposed scheme lies within and adjacent to the Chichester and Langstone Harbours IBA (International Important Bird and Biodiversity Areas).

The Langstone FCERM scheme lies within and adjacent to three nationally protected environmental sites including Chichester Harbour National Landscape, Chichester Harbour SSSI and Langstone Harbour SSSI. Warblington SSSI lies within 2km of the proposed scheme.

See **Figure III** and **Figure IV** for the location of European and national designations respectively.

Chapter 7 (Designated Sites and Features) and **Appendix C** Habitats Regulations Assessment of the Environmental Statement [ES] provide more detail about the designated sites and potential impacts of the proposed Langstone FCERM Scheme.

5.2 Designated Heritage and Archaeology Features

This section gives a baseline of the historic environment and archaeology features that could be potentially impacted by the Langstone FCERM scheme, both directly and indirectly. The impact assessment for these features is included in **Chapter 11 (Historic Environment and Archaeology)** of this ES and the Heritage Statement (**Appendix M2**).

There are no scheduled monuments located within or adjacent to the proposed Scheme. Black Barn, Warblington (NHLE 1001800) scheduled monument is located within 1km of the Langstone FCERM Scheme, approximately 950m northeast (**Figure V**).

Three conservation areas are located within and adjacent to the Langstone FCERM Scheme boundary including Langstone Conservation Area, Mill Lane Conservation Area and Wade Court Conservation Area (**Figure V**). Three additional Conservation Areas lie within 1km of the Scheme boundary.

Seven grade II listed buildings are located within and adjacent to the Langstone FCERM Scheme boundary comprising of the old mill, four houses and two public houses (The Royal Oak and The Ship Inn) (**Figure V**). Twelve additional grade II listed buildings are located within 1km of the Scheme boundary.

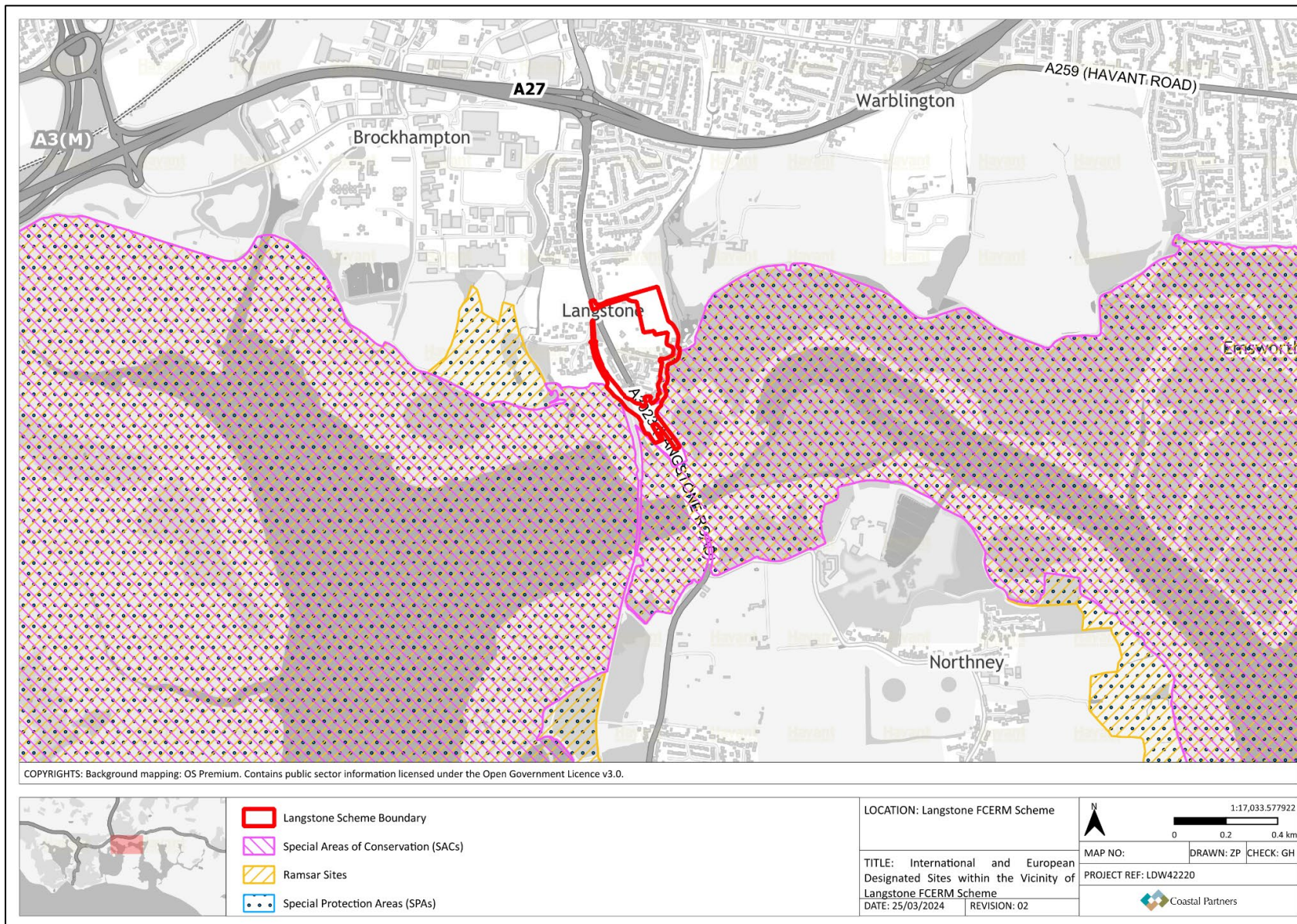


Figure III: International and European designated sites within the vicinity of the Langstone FCERM scheme (redline indicative)

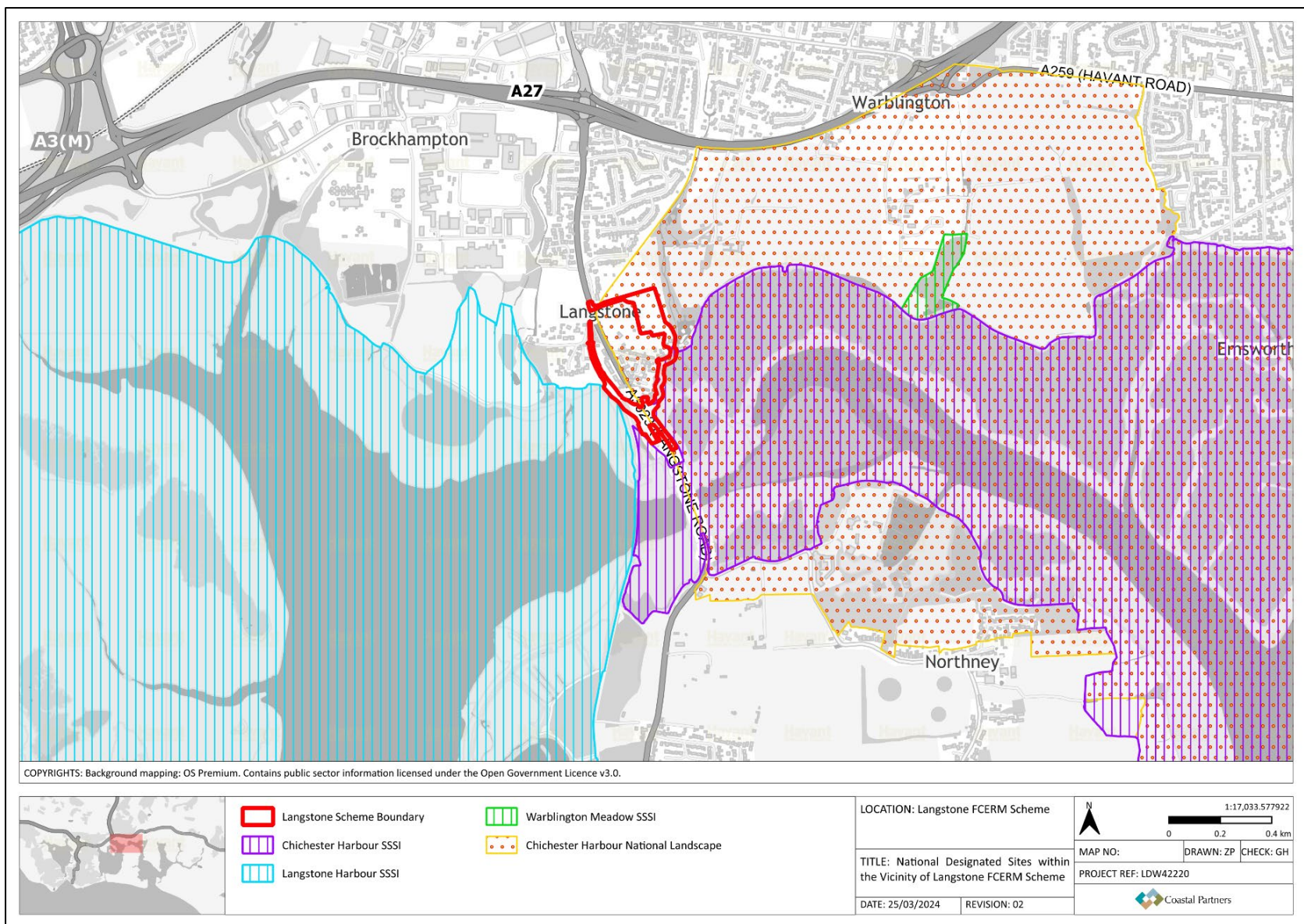


Figure IV: National designated sites within the vicinity of the Langstone FCERM scheme (redline indicative)

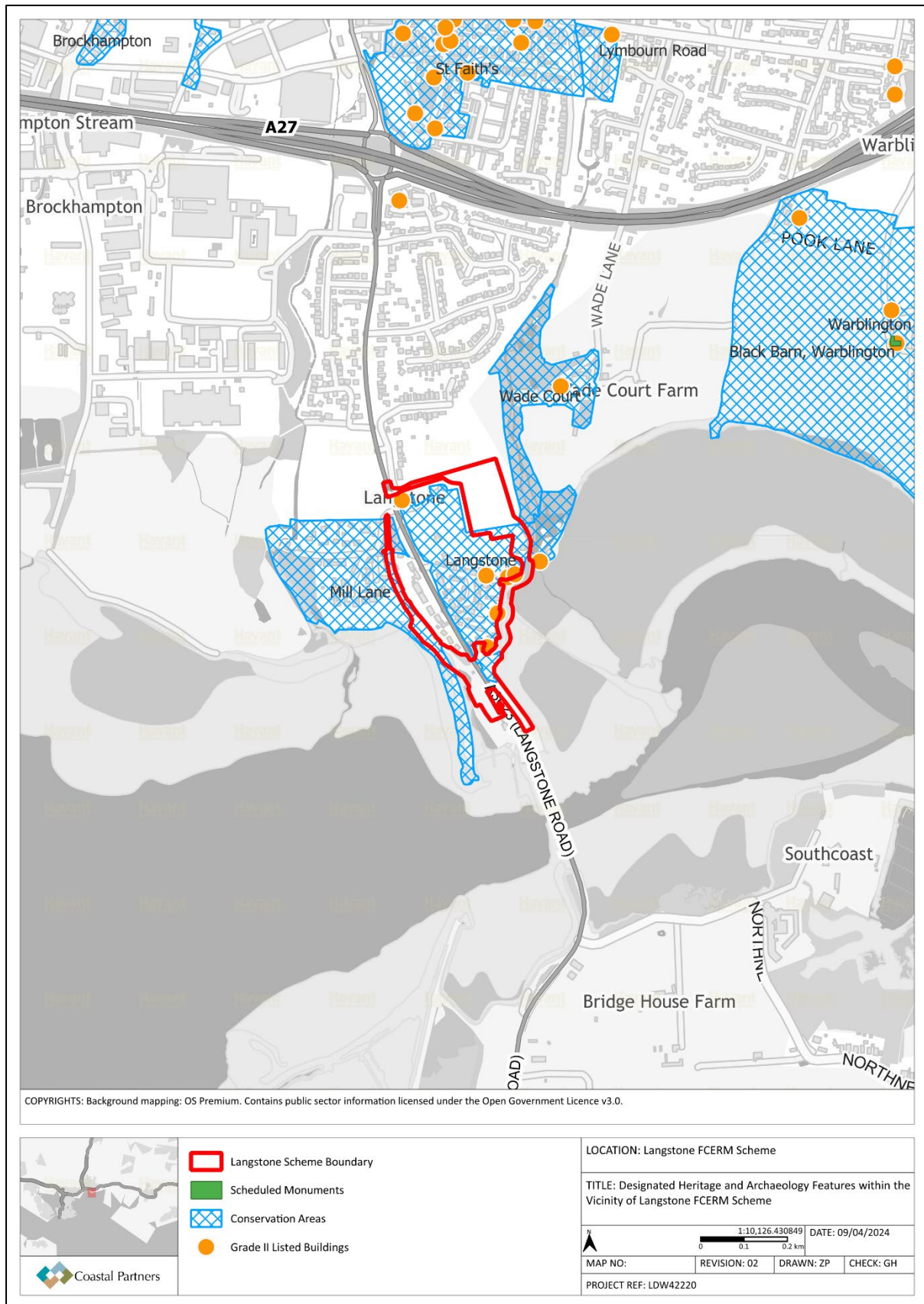


Figure V: Designated heritage and archaeology features within 1km of the Langstone FCERM Scheme (redline indicative)

6. The Problem

Flood risk (present and future)

The overarching aim of the Langstone FCERM Scheme is to reduce the impacts of flooding and erosion on residents, businesses, the local economy, and the A3023 at Langstone. This aim will be met through the Scheme objective to construct new coastal defences providing a present-day Standard of Protection (SoP) of 0.5% AEP from tidal still water for Langstone, including a freeboard for uncertainties. This SoP exceeds the minimum recommendation by the Portchester to Emsworth Strategy (1.3% AEP) at the outset (the SoP will decline over time as a function of sea level rise). The proposed defences will have a 50-year design life with minimal maintenance and operation requirements.

Flood risk modelling highlights that for the present day there are 73 residential properties at risk of flooding from a 1 in 200 year (0.5% Annual Exceedance Probability (AEP) tidal flood event in Langstone. There are also four non-residential properties at risk of flooding from the same return period event. This increases to 122 residential properties and 9 business properties in 100 years time due to the impacts of climate change and sea level rise.

The core scheme refers to the least cost scheme alignment which protects the largest number of properties and critical infrastructure inclusive of the A3023 (the only highway access to Hayling Island) and heritage assets. This includes 53 residential and 4 business properties which will be better protected through implementing this scheme.

A further 6 residential properties not currently at risk but will become at risk by 2040 due to climate change will also be better protected within the 50 year lifetime of this scheme.

Ageing coastal defences

The existing defences at Langstone are a mixture of concrete walls, concrete block revetments and masonry quay walls, which are in a poor and degraded condition. Structural surveys undertaken during detailed design have confirmed that these structures are reaching the end of their serviceable lives.

Some of the existing structures do not have registered landowners making maintenance responsibilities more complex.

If we don't address this issue now, the structures will eventually fail, health and safety will be an issue. Therefore, a better, longer term, sustainable solution is required for future management.

Infrastructure at risk

Should the A3023 be inundated by the sea at Langstone, the one and only road transport link to Hayling Island will be disrupted and the island would be 'cut-off' from the mainland for a period of time.

This also has implications for the health and safety of residents on Hayling Island because emergency service access to the island would be restricted or severed. With climate change and sea level rise the occurrence of such events is set to increase significantly.

The landscape of Langstone is unique and boasts a rich history, which is highly valued by the community. Buildings at the water's edge are vulnerable to coastal flooding and erosion, now and in the future despite a history of existing in harmony. The condition of the existing flood defences is key, and without remediation, coastal erosion could lead to a sudden failure of these structures and loss of heritage features.

Intervention in the form of a scheme will serve to protect heritage assets in Langstone more than doing nothing – a scenario where heritage features would be lost to erosion and flooding.

Historic buildings and structures were often built to last but are unlikely to have considered rising sea levels and ability to withstand more frequent wetting and drying (especially of timber structures). A flood risk reduction scheme will help to preserve and extend the life of these features.

Environment under pressure

The natural environment of Langstone and Chichester Harbours has suffered from increasing pressures. There has been a decline and squeeze of important intertidal habitat such as saltmarsh, alongside reduced water quality. This in turn impacts already fragile coastal ecosystems.

In order to protect and enhance biodiversity there are regulations in place, which require assessments of development proposals, including coastal defences.

Reducing flood and erosion risk to property and important infrastructure (like the A3023) is an 'imperative reason of overriding public interest' (IROPI), but it must be demonstrated there are no feasible alternative solutions which are less damaging, and further environmental improvements will be required in order to deliver biodiversity net gain. This has been accounted for within the proposals.

7. Alternatives and the Leading Options

Consideration of Alternatives

Since the adoption of the North Solent Shoreline Management Plan [SMP] in 2010, a rigid options selection process has been undertaken to reach the leading solutions for a FCERM scheme at Langstone. An overview of this process is provided in **Figure VI** below, however further information can be found in **Chapter 4** of the ES (**Consideration of Alternatives**):

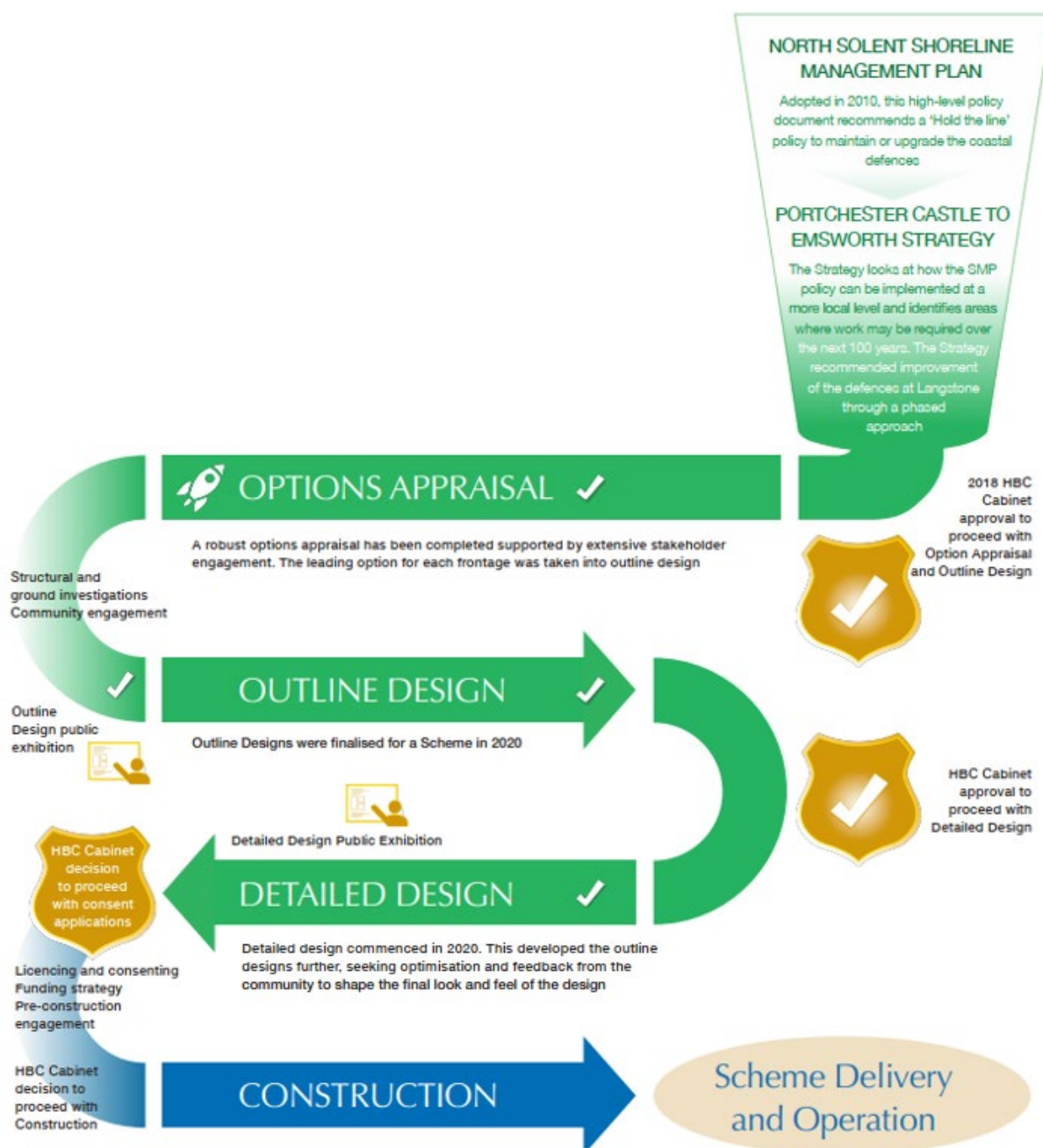


Figure VI: Timeline of the Langstone Scheme

Consultation

In the early stages of project initiation, stakeholder engagement, with a range of people including public and businesses, was highlighted as key to the success of this project, especially as the site is popular with the local community and visitors. A Stakeholder Engagement Plan (SEP) was produced at both the options appraisal and outline design stage and the detailed design stage which served as live documents that outline a framework for engagement throughout the development of the design phases. The aims and objectives of the SEP, as well as the principles of engagement, has been outlined in the **Statement of Community Involvement [SCI] (Appendix I)** to this ES.

Preferred Option

Table I below describes the preferred option (essentially the leading option) for each sub-frontage. Further detail can be found in **Chapter 3 of the ES (Proposed Scheme)**. See **Figure I** for the spatial representation of each sub-frontage.

Table I: Description of each frontage of the proposed scheme.

Frontage 1A: Billy Line North	The flood defence comprises of a raised earth embankment and follows the line of the existing Billy Line cycleway (a National Cycle Route 2 cycleway). The existing cycle path is to be upgraded to a new 3 metre wide shared path for pedestrians and cyclists which sits on top of the flood embankment.
Frontage 2: Billy Line South.	The design for Frontage 2 consists of a sheet-piled wall. Raised earth embankments are included where the defence alignment needs to cross existing utility pipes. The existing cycle path is to be upgraded to a new 3 metre wide shared path for pedestrians and cyclists which sits adjacent to the sheet-piled wall. Frontage 2 ties in with Frontage 1A and the existing higher levels on the A3023 road
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Frontage 5: Langstone High Street to the field north of the Royal Oak	Frontage 5 consists of a continuous flood defence that largely comprises of five structures. These structures include the High Street flood gates, the Royal Oak flood wall, the allotment flood wall, the Footpath flood wall that runs west of the Mill Pond, and an earth embankment in the field north of the Royal Oak. Demountable flood barriers will be provided between the section transitions and flood gates will be provided at No.21 High Street.

8. Potential Impacts of the Leading Options and Proposed Mitigation

Potential impacts of the preferred options for each sub-frontage have been considered in **Chapters 8 – 15** of the Environmental Statement which detail the environmental assessment of the impacts, proposed mitigation and residual effects for the following receptors:

8. Marine Ecology
9. Terrestrial Ecology
10. Ornithology
11. Historic Environment and Archaeology
12. Landscape, Seascape and Visual
13. Traffic and Access
14. Noise and Vibration
15. Amenity, Recreation and Socio-economics

Chapter 16 (Cumulative Impacts) summarises other schemes, projects and activities in the project area, and the potential for cumulative impacts as a result.

The potential impacts and the mitigation identified have been summarised in **Chapter 17 (Conclusions)**, **Table 17.1** (construction impacts) and **Table 17.2** (operational impacts).

This section summarises the potential impacts of the leading options across the receptors, and the proposed mitigation. The assessment of significance utilises the matrix in **Table II**.

Table II: Significance of potential effects.

		Value and Sensitivity			
		High	Medium	Low	Negligible
Magnitude	High	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Minor
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Minor	Minor	Negligible	Negligible

An effect that is of major or moderate significance is considered to be significant in EIA terms whether adverse or beneficial. Any effect that is assessed as minor or negligible is not significant and is not shown within this Non-technical Summary. Please refer to each of the relevant Chapters for this detail.

Table III: Overview of potential Impacts, necessary mitigation and residual impacts where these are deemed to be of major or moderate significance (whether adverse or beneficial) before mitigation.

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
Chapter 8 Marine Ecology: Temporary loss and/or disturbance of intertidal sediment habitats during construction works	Overall, without mitigation, the impact is considered to be of moderate adverse significance for saltmarsh .	With avoidance mitigation measures incorporated into the construction methodology / CEMP this will ensure saltmarsh is not damaged during the construction works. With the mitigation measures outlined, the residual impact on the saltmarsh and intertidal sediment habitats is expected to be of minor adverse significance .
Chapter 8 Marine Ecology: Noise and vibration impacts on marine mammals, fish and benthic ecology	Piling is required in Frontages 2, 3, 4 and 5 of the proposed Scheme. <u>Underwater noise:</u> Without mitigation, the generation of impulsive underwater noise during marine piling activities could have a moderate to major adverse effect on seals. If marine piling was to occur within the water column at Langstone the impact on fish would potentially be of major adverse significance .	Proposed mitigation measures to ensure piling is undertaken outside of the water column (when the tide is out) and to use non-percussive piling methods where possible. With the implementation of the mitigation measures, the impact of underwater noise on seals, fish, shellfish and benthic invertebrates during the construction works will be of negligible significance as the pathway of transmission from the source (piling) to the receptors will be removed as piling will not take place within the water body.
Chapter 8 Marine Ecology: Permanent loss of intertidal habitat under the footprint of new defence structures and due to coastal squeeze	Permanent loss of foreshore habitat under the footprint of the new defence structures and from coastal squeeze due to the implementation of the Hold the Line coastal management policy will have a moderate to major adverse significance .	Compensatory intertidal habitat will be created via the Habitat Compensation and Restoration Programme (HCRP) to offset this loss. This will ensure that the habitat losses are offset and there will be a negligible significance impact on intertidal habitats overall.
Chapter 9 Terrestrial Ecology: Temporary loss of	<u>Priority Habitats:</u> moderate adverse significance	<u>Priority Habitats:</u>

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
priority and broad habitats through vegetation clearance and/or construction of sea defences.	<u>Broad habitats:</u> moderate adverse significance	- Any wet woodland understorey habitat removed will be replaced with a native wetland mix of shrubs as outlined in the landscaping plans and planting schedule. - Areas of hedgerow impacted by vegetation clearance activities will be reinstated by planting native hedgerow species and additional areas will be planted with a hedgerow seed mix as outlined in the landscaping plans and planting schedule. - All priority habitat losses, gains and environmental improvements for the Langstone Core Scheme are outlined in the draft BNG Plan and will be submitted for approval prior to commencement. Residual Impact: Negligible and Beneficial <u>Broad habitats:</u> All broad habitat losses, gains and environmental improvements for the Langstone Core Scheme are outlined in the draft BNG Plan and will be submitted for approval prior to commencement. Residual Impact: Negligible and beneficial
Chapter 9 Terrestrial Ecology: Permanent loss of notable plant species through the removal of the existing defences.	Moderate adverse significance	- Carefully remove Golden Samphire plants from the old revetment at Frontage 3 prior to the revetment being broken out and relocate to areas with suitable conditions such as the saltmarsh inlet (Frontage 2) or spit (south of Frontage 2). - Areas of vegetation that will not be removed but contain notable species (e.g. Golden Samphire in Frontage 2) should be mapped, demarcated and protected throughout the works to avoid any harm. Residual Impact: Negligible
Chapter 9 Terrestrial Ecology: Pollutants and dust affecting priority habitats and notable plant species	Moderate/ minor adverse significance	- Fuel and other chemicals to be stored at least 10m away from the sensitive habitats, in nearby compounds and to be fully bunded to 110% of the maximum storage capacity and maintained in a secure and clear manner. - All fuelling operations, servicing of equipment and fuel storage to take place at least 10m away from sensitive habitats. - Spill kits will be available at all fuelling locations and carried by all plant working in sensitive areas.

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		- Any spillage shall be immediately contained, removed from site and disposed of to a licensed tip. - A supply of water and means of dispensing it will be available on site to dampen down dust, haul routes and material stockpiles. Residual Impact: Negligible
Chapter 9 Terrestrial Ecology: The spread of non-native invasive plant species from vegetation clearance and construction activities such as trampling and plant movements.	Major adverse significance	- A pre-commencement survey will be undertaken and a 7m buffer zone will be marked around any Japanese Rose and/or Three-cornered Garlic plants found. - A Schedule 9 Plant Management Plan will be implemented and adhered to for plants/material retained on site. - All material within the 7m buffer zones removed from site will be clearly identified to the waste carriers as potentially containing Japanese Rose and/or Three-cornered Garlic and taken to a suitably licensed disposal site, or appropriately disposed of on site. - Ensure that imported materials are free from Japanese Rose, Three-cornered Garlic and other invasive species where possible. Residual Impact: Negligible
Chapter 9 Terrestrial Ecology: Disturbance to roosting, foraging and commuting bat species from vegetation clearance and construction activities	Major adverse significance	- Any trees to be felled or pruned will be assessed from the ground level for the potential bat roost features, as even unoccupied bat roosts are protected by law. Emergence/re-entry surveys will be conducted at a suitable time of year on any additional tree due to be felled or pruned where medium/high/confirmed potential bat roosting features are identified. - Where possible all work on trees will be carried out in Spring (mid-March to end of April) before young are born, or Autumn (September to late October) after the young are weaned and independent before hibernation. However, these times are climate dependent and can vary from year to year. - Soft felling will be used as a precautionary method to remove trees / branches, including the five identified trees with negligible PRFs located around the proposed access junction between Langstone Road and the compound entrance. Soft felling requires the trees to be cut down in sections, with each section carefully lowered to the ground. Once lowered, the sections must be left in situ for 24 hours, to give any temporary roosting bats time to move away to another roost site.

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		- To minimise risk of affecting foraging bats, avoid night working using artificial lighting. If essential, lights should be directed and shrouded to avoid light illuminating potential foraging areas e.g. tree lines. - Habitat improvement opportunities including tree planting, creation of hedgerows, creation of wildflower and coastal meadows will be implemented to create a beneficial impact to roosting, foraging and commuting bats once the habitats have established. The installation of bat boxes will be implemented to create a beneficial impact for roosting bats. Residual Impact: Minor adverse significance and beneficial
Chapter 9 Terrestrial Ecology: Impacts to reptiles from vegetation clearance and construction activities	Major adverse significance	<u>Frontage 5</u> Due to the low reptile population and the good connectivity of areas of reptile habitat in this frontage, the main method of mitigation will be vegetation management undertaken to encourage reptiles to move into adjacent habitats. This work is planned to commence in September 2024. Reptile fencing and/or close-cropped strips will be located to stop recolonisation of de-risked areas from adjacent suitable habitat that will act as reptile safe areas throughout the works. These reptile safe sites will not be impacted by the construction works. The following measures will be taken during the vegetation management and reptile de-risking: - During the active season (March to October - subject to suitable weather conditions), vegetation management (staged cutting down to ground level) will be used to encourage reptiles to move into safe zones. - The cutting programme will aim to work in a directional manner cutting progressively toward the nearest reptile safe area. - Once it is considered that all reptiles will have moved into safe zones, all safe zones will be constrained by close crop mowing along the zone boundaries and/or reptile fenced to best practice standards. - Following vegetation management hand capture under Alternative Cover Objects (ACO) will be undertaken, to demonstrate that the area is clear of reptiles. Any captured animals will be translocated into the nearest reptile safe area. Capture will be undertaken five days a week, once per day in suitable weather conditions. Capture

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		operations will continue for a minimum of 10 days and then until no animals have been seen or captured for five consecutive days with suitable weather conditions. - As most of the habitat is alongside habitats that will be retained and/or are with tree protection zones no destructive search will be carried out following vegetation management. - Close cropping will continue around the Frontage boundaries and reptile fencing will be placed around the Frontage boundaries where necessary (attached to the heras fencing) to ensure reptiles do not return to the site during the construction works. Vegetation will be kept short within the Frontage boundaries to further deter reptiles during the construction works. The reptile fencing will be checked regularly to ensure it is in good working order. <u>Frontage 2</u> Vegetation management and in situ reptile translocation within the Frontage boundaries is planned for Spring 2025 for Frontage 2. Reptile fencing and/or close-cropped strips will be located to stop recolonisation of de-risked areas from adjacent suitable habitat that will act as reptile safe areas throughout the works. These reptile safe sites will not be impacted by the construction works. The following measures will be taken during the vegetation management and reptile de-risking: - During the active season (March to October - subject to suitable weather conditions), vegetation management (staged cutting down to ground level) will be used to encourage reptiles to move into safe zones and/or where that is not feasible into focus areas. - The cutting programme will aim to work in a directional manner cutting progressively toward the nearest reptile safe area. - Once it is considered that all reptiles will have moved into safe zones, all safe zones will be constrained by close crop mowing along the zone boundaries and/or reptile fenced to best practice standards. - Following vegetation management hand capture under Alternative Cover Objects (ACO) will be undertaken, to demonstrate that the area is clear of reptiles. Any captured animals will be translocated into the nearest reptile safe area. Capture will be undertaken five days a week, once per day in suitable weather conditions. Capture

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		operations will continue for a minimum of 30 days and then until no animals have been seen or captured for five consecutive days with suitable weather conditions. • If considered necessary, e.g. in areas where capture is difficult, a destructive search will be carried out This will follow best practice procedures presented and use two suitably qualified and experienced ecologists observing/checking and capturing any reptiles and covering both the excavation and the deposition areas. • Close cropping will continue around the Frontage boundaries and reptile fencing will be placed around the Frontage boundaries where necessary to ensure reptiles do not return to the site during the construction works. Vegetation will be kept short within the Frontage boundaries to further deter reptiles from recolonisation during the construction works. The reptile fencing will be checked regularly to ensure it is in good working order. A full Reptile Mitigation Strategy will be prepared and submitted for approval prior to commencement. A draft Reptile Mitigation Strategy has been submitted with this application. Residual Impact: Negligible
Chapter 9 Terrestrial Ecology: Impacts to West European hedgehog from vegetation clearance and construction activities	Moderate / minor adverse significance	• Any dense vegetation clearance (e.g. hedgerows / along the Hayling Billy trail) should initially be checked for hedgehogs prior to removal. • Any piles of leaf litter and similar material should initially be cleared by hand, to avoid harm to sleeping or hibernating hedgehogs. • No excavations should be left open overnight, they should be covered and / or provide a means of escape (e.g. scaffold plank laid at 45 degrees). Residual Impact: Negligible
Chapter 9 Terrestrial Ecology: Temporary loss or damage to trees from site clearance and construction works.	Moderate adverse significance	• All of the recommended tree works should be undertaken by an approved and experienced tree contractor as outlined in the Arboricultural Method Statement prior to any construction contractors commencing works on site. • Erect the protective fencing as specified and shown on the Tree Protection Plan BJH03/04 at appendix BH3 (Haverson, 2024). Barriers are to be 'Fit for Purpose' to exclude construction activity and must be maintained to ensure that they remain rigid and complete and in the original setting out positions. These checks will need to be incorporated into a schedule of site monitoring visits to be agreed with the contractor

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		subject to phased development operations and subsequently copies of these site visit reports will need to be copied to the LPA. • A copy of the Tree Protection Plan is to be pinned up in the offices on site for all site staff to see. The area within the fenced off construction exclusion zone is to be regarded as sacrosanct and the fencing shall not be taken down or relocated at any time without the prior written approval of the monitoring arboriculturist or local authority tree officer, unless this has already been agreed as part of the planning application consent process and is detailed in writing and shown on a plan. • The following prohibitions shall apply within the area enclosed by the Tree Protection Fencing [Construction Exclusion Zone]: - No mechanical digging or scraping once the initial ground cover vegetation has been cleared and the site fenced off. - No storage of plant, equipment or materials - No vehicular or plant access - No fire lighting - No handling, discharge or spillage of any chemical substance, including cement washings - No action likely to cause localised water-logging - No change in ground levels • All site works storage areas and compounds/welfare units/toilet blocks and any mixing areas are to be located outside of and well clear of retained tree RPA's. • All Utility Service connections are to be located outside of tree RPA's. Arboricultural Expert Monitored 'Hand Digging' works [for works within tree RPZ's]: • Break out hard surfacing with appropriate drills and hand held tools stopping as soon as bare earth is reached - which may include the use of a mini digger with a pneumatic 'pecker' attachment or for large plant working entirely from the foreshore and outside of tree RPZ's. • Clear away the debris and arisings from the work face. • An Arboricultural Expert is to be called in to monitor the 'Hand Digging' works with forks [or air spades or similar acceptable low impact technology] ONLY initially and shovels and spades at a later date at the discretion and direction of the Arboricultural Expert.

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		- If roots are encountered then they are to be carefully worked around and if they are 25mm or less in diameter and not found 'en masse' then the Arboricultural Expert will sever them at the trench edge with clean and sharp bypass secateurs to allow works to continue. In the event that the roots are over 25mm in diameter then the priority must be to retain them and find a 'work around' solution (e.g. packing around them with sharp washed sand and then wrapping in hessian to protect them). Ground Protection Measures: - Whilst there is no anticipated specific need for these works it may be found that to access an area to work on it (i.e. the Mill Lane footpath link) then ground protection must be laid to give access to hand operated machinery as per BS5837:2012 Section 6.2.3.3 Recommendations. - The Tree Protection Plan will be monitored as outlined in the Arboricultural Method Statement (Haverson, 2024). Residual Impact: Negligible
Chapter 9 Terrestrial Ecology: Permanent loss or damage to trees from site clearance and construction works.	Major / moderate adverse significance	- Where specific trees are shown for removal to facilitate the layout of the Scheme (on the Tree Protection Plans), they are to be cut down in a controlled manner to avoid damage to other trees and their surroundings. The stumps are to be ground out by machine except where they are shown to be coppiced and these will be cut down to ground level and allowed to re-shoot and contribute to the general shrubbery and low canopy cover in the future (see Haverson (2024) for further details). - All of the recommended tree works should be undertaken by an approved and experienced tree contractor prior to any construction contractors commencing works on site. - Any trees and scrub removed will be replaced with an equal or greater number of appropriate species, sizes and quality. A BNG plan will detail how this will be delivered, a draft version has been submitted with this application. See draft landscaping plans and planting schedule for further details. Residual Impact: Negligible
Chapter 9 Terrestrial Ecology: Permanent gain of trees and vegetation.	Major/moderate beneficial	Replanting will be undertaken as advised by the draft BNG Plan, Landscape Plans and Planting Schedule and shall be carried out no later than the first planting and seeding season following the completion of the development.

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		Any trees or plants which, within a period of 5 years from the date of planting die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of similar size and species. Residual Impact: Major/moderate beneficial
Chapter 10 Ornithology: Noise from construction works on site displacing birds in the local area (construction)	SPA/Ramsar non-breeding/overwintering birds - Major Adverse Significance SPA/Ramsar non-breeding/overwintering birds using functionally linked land - Major Adverse Significance SPA breeding seabirds – Major adverse Significance. Egret/Heron breeding colony- Major Adverse Significance	<u>Frontage 1A</u> - Wacker plate or compacting plant with a similar noise profile not to be used between chainage 120-188 during the overwintering bird period October-March inclusive. <u>Frontage 2</u> - No construction work to be undertaken during the overwintering bird period October-March inclusive. <u>Frontage 3</u> - Piling work between chainage 0-66 and all construction work between 100-152 will not be undertaken during the overwintering bird period October-March inclusive. <u>Frontage 4</u> - No construction work to be undertaken during the overwintering bird period October-March inclusive. <u>Frontage 5</u> - No construction work to be undertaken between chainage 0-95 or piling / trench sheet installation work between chainage 96-185 during the overwintering bird period October-March inclusive. - To minimise risk of disturbance to egret and heron roost, no night working and particularly no artificial lighting between chainage 112-221. - An appropriate ornithological watching brief by a suitably qualified and experienced ecologist will be undertaken to assess any impacts to nesting egrets and herons at Langstone Millpond during the nesting period March to August inclusive. Significant disturbance will be determined by expert opinion and, if required, consultation with relevant bodies, but could be reached by unacceptable daily effects or cumulatively, e.g., a pattern of effect amounting to an adverse impact. Appropriate management

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		measures will be put in place immediately to address it. Such measures could range from the installation of acoustic barriers, implementation of timing restrictions to cessation of construction activities if other measures are not sufficient to avoid significant disturbance on nesting birds in this colony will be implemented until nesting attempts have been completed. Details of this watching brief will be set out within the final CEMP. <u>All Frontages</u> • Installation of piles will be undertaken using vibro piling techniques as standard. Percussive piling will only be used when necessary to achieve the required design depth. If percussive piling is required, a soft start procedure will be implemented for a minimum of 20 minutes. Should piling cease for a period greater than 10 minutes, then the soft start procedure will be repeated. • To avoid the transmission of impulsive noise into the water column, piling on the foreshore will only be undertaken in the dry (when the surface of the substrate is above the current tide level). • For any work proposed within the over-wintering bird period, October-March inclusive, an appropriate ornithological watching brief by a suitably qualified and experienced ecologist will be undertaken to assess any impacts. Significant disturbance will be determined by expert opinion and, if required, consultation with relevant bodies, but could be reached by unacceptable daily effects or cumulatively, e.g., a pattern of effect amounting to an adverse impact. Appropriate management measures will be put in place immediately to address it. Such measures could range from the installation of acoustic barriers, implementation of timing restrictions to cessation of construction activities if other measures are not sufficient to avoid significant disturbance to the over-wintering birds. Details of this watching brief will be provided within the final CEMP, which will be submitted for approval by the LPA / Natural England prior to the commencement of construction activities. In the event of severe weather, defined as frozen ground conditions reported by over half of the meteorological stations in England/Wales, after 7 consecutive days (allowing for short (24-48 hours) periods of thaw) an expert review will be undertaken by the project ecologist and, if necessary, work may be restricted or halted. After 14 consecutive days of frozen ground conditions and if a statutory suspension is

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		announced, all works will cease during the suspension period. Details of this process will be laid out within the final CEMP. Delivery of the above mitigation and particularly the robust application of an ornithological watching brief should ameliorate adverse effects to minor adverse significance.
Chapter 10 Ornithology: Visual disturbance from construction works on site displacing birds in the local area (construction)	SPA/Ramsar non-breeding/overwintering birds – Major Adverse Significance SPA/Ramsar non-breeding/overwintering birds using functionally linked land - Major Adverse Significance Egret/Heron breeding colony- Major Adverse Significance	<u>Frontage 3&4</u> - No construction work to be undertaken during the overwintering bird period October-March inclusive. <u>Frontage 5</u> - No construction work to be undertaken between ch 0-110 during the overwintering bird period October-March (inclusive). - All vegetation clearance should be undertaken outside of the bird nesting season March-August inclusive, to avoid disturbance of the egret/heron nesting colony. - No site personnel to enter the woodland area around the egret/heron nesting colony during the bird breeding season March-August inclusive. <u>All frontages</u> - For any work proposed within the over-wintering bird period, October- March inclusive, an appropriate ornithological watching brief by a suitably qualified and experienced ecologist will be undertaken to assess any impacts. Significant disturbance will be determined by expert opinion and, if required, consultation with relevant bodies, but could be reached by unacceptable daily effects or cumulatively, e.g., a pattern of effect amounting to an adverse impact. Appropriate management measures will be put in place immediately to address it. Such measures could range from the installation of screening barriers, implementation of timing restrictions to cessation of construction activities if other measures are not sufficient to avoid significant disturbance to the over-wintering birds. Details of this watching brief will be included within the final CEMP, to be confirmed once a contractor has been appointed. - In the event of severe weather, defined as frozen ground conditions reported by over half of the meteorological stations in England/Wales, after 7 consecutive days (allowing for

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
		short (24-48 hours) periods of thaw) an expert review will be undertaken by the project ecologist and if necessary, work may be restricted or halted. After 14 consecutive days of frozen ground conditions and if a statutory suspension is announced all works will cease during the suspension period. Details of this process will be laid out within the final CEMP. With the mitigation above the residual impact is expected to be of minor adverse significance.
Chapter 10 Ornithology: Temporary loss of bird habitats (construction)	Terrestrial breeding birds - Moderate Adverse Significance	<u>Frontages 1A, 2 and 5</u> - All losses of potential nesting habitat will be addressed in the BNG Plan and CEMP and will be submitted for approval prior to commencement. - A range of nest boxes suitable for species present will be erected in adjacent habitats prior to commencement of site clearance, details will be provided within the CEMP. <u>Frontages 3, 4 and 5</u> - Works will be undertaken from the landward side wherever possible to minimise disturbance of the foreshore. Where foreshore working is required, this will be restricted to a maximum of 20 metres seawards of the existing defences and will be clearly demarcated by the silt curtain. - The area excavated for construction of the buried apron of the new sea walls will be reinstated to existing foreshore levels using material retained from the excavation. Methods will be finalised once a contractor has been appointed and confirmed within the CEMP and BNG plan. A silt curtain will be deployed and maintained throughout construction of these frontages to avoid increased water turbidity of adjacent areas. With the mitigation above the residual impact is expected to be of minor adverse significance/negligible.
Chapter 10 Ornithology: Disturbance to nesting birds (<i>construction</i>)	Egret/Heron breeding colony -Moderate Adverse Significance	<u>Frontage 1A, 2 and 5</u> All suitable bird nesting habitat within working areas to be cleared outside of the bird nesting period (no bird nesting habitat to be cleared between March to August)

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
	Terrestrial breeding birds - moderate adverse significance	inclusive). If this is not possible all potential habitat to be checked by a suitably experienced and qualified ecologist prior to commencement. - All losses of potential nesting habitat losses will be addressed in the BNG Plan and CEMP and will be submitted for approval prior to commencement. - A range of nest boxes suitable for species present will be erected in adjacent habitats prior to commencement of site clearance. Details will be provided within the CEMP. <u>Frontage 5</u> An appropriate ornithological watching brief by a suitably qualified and experienced ecologist will be undertaken to assess any impacts to nesting egrets, herons and Cetti's warbler at Langstone Millpond during the nesting season. Significant disturbance will be determined by expert opinion and, if required, consultation with relevant bodies, but could be reached by unacceptable daily effects or cumulatively, e.g. a pattern of effect amounting to an adverse impact. Appropriate management measures will be put in place immediately to address it. Such measures could range from the installation of acoustic barriers, implementation of timing restrictions, to cessation of construction activities. If other measures are not sufficient to avoid significant disturbance on nesting birds in this colony protective measures will be implemented until nesting attempts have been completed. Details of this watching brief will be within the final CEMP. De-risking by the appropriate seasonal removal of potential nesting habitat will reduce the potential of impacts on common and widespread species and due to the distance and lack of habitat directly affected for Cetti's warbler, this will be negligible. Potential impacts to terrestrial breeding birds and the nesting colonies of little egret, grey heron and cattle egret are more difficult to accurately predict, due to limited research on these species, however anecdotally they are considered of low sensitivity to disturbance. Delivery of the above mitigation should ameliorate most adverse effects to a residual impact of minor adverse significance.
Chapter 10 Ornithology: Disturbance / displacement	All receptors – Moderate adverse significance	Where possible, apart from urgent and emergency repairs, no construction work to be undertaken during the overwintering bird period October to March inclusive.

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
of birds during any maintenance and repair work required during the lifetime of the sea defence (operation)		- If urgent or emergency work is proposed within the over-wintering bird period, October to March inclusive, an appropriate ornithological watching brief by a suitably qualified and experienced ecologist will be undertaken to assess any impacts. Significant disturbance will be determined by expert opinion and, if required, consultation with relevant bodies, but could be reached by unacceptable daily effects or cumulatively, e.g. a pattern of effect amounting to an adverse impact. Appropriate management measures will be put in place immediately to address it. Such measures could range from the installation of acoustic barriers, implementation of timing restrictions to cessation of construction activities if other measures are not sufficient to avoid significant disturbance to the over-wintering birds. Details of this watching brief will be within the CEMP/RAMS. - If any works are required in close proximity to the nesting egrets and herons at Langstone Millpond during the nesting period March to August inclusive, an appropriate ornithological watching brief by a suitably qualified and experienced ecologist will be undertaken to assess any impacts. Significant disturbance will be determined by expert opinion and, if required, consultation with relevant bodies, but could be reached by unacceptable daily effects or cumulatively, e.g. a pattern of effect amounting to an adverse impact. Appropriate management measures will be put in place immediately to address it. Such measures could range from the installation of acoustic/visual barriers, implementation of timing restrictions to cessation of construction activities, if other measures are not sufficient to avoid significant disturbance on nesting birds in this colony protective measures will be implemented until nesting attempts have been completed. Details of this watching brief will be within the CEMP/RAMS. As such, it is expected that there will be an impact of minor adverse significance for residual impacts from temporary disturbance of the intertidal habitat during maintenance activities in the operational phase of the proposed Scheme.
Chapter 11 Historic Environment and Archaeology: there is potential for impacts on	Due to changes in the setting of Listed Buildings and the potential for ground disturbance across the scheme to disturb deposits	A robust Archaeological Mitigation Strategy will be implemented across the scheme to ensure any archaeologically interesting deposits encountered, or likely to be impacted upon, are documented appropriately. Furthermore this will offer the opportunity to learn more about little understood deposits and enable their geoarchaeological potential to be fully characterized. The strategy will be agreed in consultation with the county archaeologist.

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
geoarchaeology/ archaeology	with archaeological and geoarchaeological interest, the significance of the impact has been assessed as moderate adverse .	The use of sympathetic design and appropriate materials around Listed Buildings will avoid harm to their significance despite altering their setting, while reducing flood risk. Residual Impact: Minor beneficial
Chapter 12 Landscape/ Seascape and Visual Impacts	A moderate adverse visual impact has been assessed during construction phase on the following visual receptors: - Recreational users of Chichester Harbour - PRoW users - Wayfarers' Way - Hayling Billy Line - Hayling Billy Line/Shipwrights Way	Construction best practice as set out in the Construction Environmental Management Plan (CEMP). Measures could include features such as secure perimeter fencing, screen bunds, and maintaining a tidy site. The hard landscape materials and street furniture will be sympathetic to surrounding architecture, appropriate to their surroundings and historic context, including the Conservation Area and Listed Buildings. Materials, furniture, new planting and seeding will reinforce local character and create a sense of place while increasing the biodiversity of the local landscape. PRoW, cycle routes and long distance walking routes will be re-opened and provide at least the same access. The impact would be minor beneficial
Chapter 13 Traffic and Access: Changes in the route, volume, composition or speed of traffic during construction	Overall, on the A3023 an increase of approximately 6 HGV movements and 60 vehicle movements daily over the duration of the works will result in less than 10% change in the estimated average daily flow (Table 13.2), resulting in a medium magnitude of change and suggesting a moderate adverse impact without mitigation. Additionally, along Langstone High Street (access route 4), there will be a slight increase	Appropriate management measures will be employed to limit impacts particularly on traffic delays caused by site deliveries and HGV movements. This includes a traffic marshal in attendance and a suitable dedicated turning circle identified. Such measures will be confirmed within the final CTMP which has been drafted as part of this submission. With mitigation in place, the effect of the Proposed Development on changes in traffic is considered to be Minor Adverse .

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
	of approximately one HGV and one vehicle a day over 30 weeks. This is considered to have the potential to result in a low to medium magnitude of change, also suggesting a worse case moderate adverse impact without mitigation	
Chapter 13 Traffic and Access: Reduced accessibility (construction)	A medium magnitude of change is anticipated from a short term and temporary loss of some parking spaces, suggesting a moderate adverse impact without mitigation. In addition Temporary footpath and cycle diversions are proposed during construction which is considered to result in a low to medium magnitude at worst suggesting a moderate adverse impact without mitigation.	Appropriate management measures will be employed. This includes ensuring all footpath closures and reduction in parking spaces will be minimised where possible and all path diversions will have appropriate signage. Any changes will be short term and temporary. Such measures will be confirmed within the final CTMP. With mitigation in place, the overall effect of the Proposed Development on changes in accessibility is considered to be Minor Adverse .
Chapter 13 Traffic and Access	The scheme will improve and safeguard footpaths and cycleway by providing improved flood protection and access between Langstone and Hayling Island by protecting the	N/A

Potential Impact Pathway	Significance of impact	Summary of Mitigation and Residual Impacts
	highway. Overall, considering the high sensitivity of users the impacts of the proposed scheme from changes in access during operation have been assessed as major/moderate beneficial impact .	
Chapter 14 Noise and Vibration	Airborne noise due to construction activities and traffic movements – potential moderate adverse impact to sensitive receptors. Ground borne vibration – potential moderate adverse impacts to sensitive receptors	With mitigation measures incorporated into the construction methodology/CEMP, the overall significance is considered minor adverse .
Chapter 15 Amenity, Recreation & Socio-economics: Impacts to residents and the local economy through the reduced flood risk to residential property and businesses.	The proposed Scheme will provide protection to properties and critical roads from a flooding now and in 100 years' time.	As detailed in Section 15.7.2 the proposed Scheme will provide significant benefits in relation to physical health through the reduction of potential injuries during flooding events but also improved psychological health of people at risk of flooding. Overall impacts assessed as major/moderate beneficial .

9. Conclusions

Upon completion of the scheme, Langstone will benefit from improved coastal defences, providing an increased standard of protection.

Some potential impacts have been identified including on habitats and species, historic environment and on the landscape as well as from noise and vibration and changes in traffic and access during construction. However where such potential impacts have been identified mitigation has been proposed to reduce the significant impacts to minor adverse at worse and not significant.

In addition, the scheme will provide wider environmental benefits, such as:

- Support to the local economy, residents and businesses from reduced flood risk including the A3023 onto Hayling Island.
- Preservation of the local landscape, heritage and culture for future generations to come.
- Improvements for coastal access and recreation

10. References

Environment Agency (2012) Portchester Castle to Emsworth Flood and Coastal Erosion Risk Management Strategy Available at:

<https://coastalpartners.org.uk/static/media/resources/portchester-to-emsworth-strategy-appraisal-report.pdf> [Accessed 23 May 2024]

New Forest District Council (2010) North Solent Shoreline Management Plan Available at:

[Shoreline Management Plan - Shoreline Management Plan \(northsolentsmp.co.uk\)](http://northsolentsmp.co.uk/Shoreline%20Management%20Plan) [Accessed 27 March 2023].