

West Wight Coastal Flood and Erosion Risk Management Strategy

Appendix H – Habitats
Regulations Assessment
(Screening Report)
March 2016



Document history

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Contents

1. Introduction	1
1.1 Introduction	1
1.2 The West Wight Coastal Flood and Erosion Risk Management Strategy	3
1.3 HRA of the Strategy	3
1.4 This Report	7
2. Habitats Regulations Assessment –Methodology	9
2.1 Key Principles	9
2.2 The Process of HRA	9
2.3 HRA Task One: Likely Significant Effects (Screening)	10
2.4 HRA of Isle of Wight SMP 2	10
2.5 HRA Screening of the Strategy	12
2.6 Assessment ‘in combination’	13
3. Potential Impact Pathways	14
3.1 Introduction	14
3.2 Direct Landtake	14
3.3 Coastal squeeze	14
3.4 Loss of high tide roosts	15
3.5 Disturbance	15
3.6 Changes in sediment transport (coastal processes)	15
3.7 Contamination	15
4. Background Information Regarding Relevant European Sites	16
4.1 Solent Maritime SAC	16
4.2 South Wight Maritime SAC	16
4.3 Isle of Wight Downs SAC	17
4.4 Solent & Southampton Water SPA/Ramsar site	17
4.5 Solent and Dorset Coast pSPA	19
4.6 European designated sites associated with the Individual Strategy Management Zones (SMZs)	19
5. HRA Screening	21
6. In Combination Assessment	64
6.1 Introduction	64
6.2 Short term (2015 – 2025)	64
6.3 Medium and long term (2025 – 2115)	65
7. Conclusions	66
Appendix 1 – Option Development Units	67

1. Introduction

1.1 Introduction

Isle of Wight Council is developing a Coastal Flood and Erosion Risk Management Strategy for 'West Wight', an area that extends from Freshwater Bay to East Cowes. This project frontage comprises the Policy Development Zones (PDZs) 1, 6 & 7 as outlined in the 2010 Shoreline Management Plan (SMP) for the Isle of Wight¹ (Figure 1):

- PDZ 1: **Cowes and the Medina Estuary** (from Gurnard Luck to Old Castle Point (East Cowes));
- PDZ 6: **West Wight** (from the eastern margin of Freshwater around the West Wight headland to include Yarmouth (to the eastern margin of Port la Salle); and,
- PDZ 7: **North-west Coastline** (from the eastern margin of Bouldnor to the western margin of Gurnard Luck).

The Coastal Flood and Erosion Risk Management Strategy (herein the 'Strategy') is the next stage on from the SMP. Its purpose is to outline the preferred options (measures and actions) which shall be undertaken to manage effectively and sustainably the risks posed by coastal flooding and erosion in the short (10 year), medium (10-40 years) and long term (40 – 100 years). The Strategy considers the effects of climate change and associated impacts such as sea-level rise and coastal erosion.

In order to comply with the requirements of Article 6 of the EC Habitats Directive 1992 (interpreted into English law by the Conservation of Habitats & Species Regulations 2010) land use plans must be subject to a Habitats Regulations Assessment (HRA) screening exercise to determine if they are likely to have a significant effect on a Natura 2000 site (Europe wide network of sites: Special Areas of Conservation (SAC) and Special Protection Areas (SPA). It is also Government policy (as described in the National Planning Policy Framework) for candidate Special Areas of Conservation (cSAC), proposed Special Protection Areas (pSPA) and sites designated under the Convention on Wetlands of International Importance 1971 (Ramsar sites) to be treated as having equivalent status to designated Natura 2000 sites. Collectively, we refer to these sites throughout this report as 'European sites'. There are also nationally and locally designated sites in the Strategy area, such as Sites of Special Scientific Interest (SSSI), Local Nature Reserves (LNR) and Sites Important for Nature Conservation (SINC) but these do not fall within the remit of HRA.

If the HRA screening exercise determines that a likely significant effect may occur then further investigation (Appropriate Assessment or AA stage of the HRA process) is necessary in order to determine potential for avoidance or mitigation. Box 1 below sets out the legislative basis for such an assessment.

The Habitats Directive applies the precautionary principle to protected areas so that plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. Plans and projects may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

¹ Isle of Wight Shoreline Management Plan (2010) <http://www.coastalwight.gov.uk/smp/>

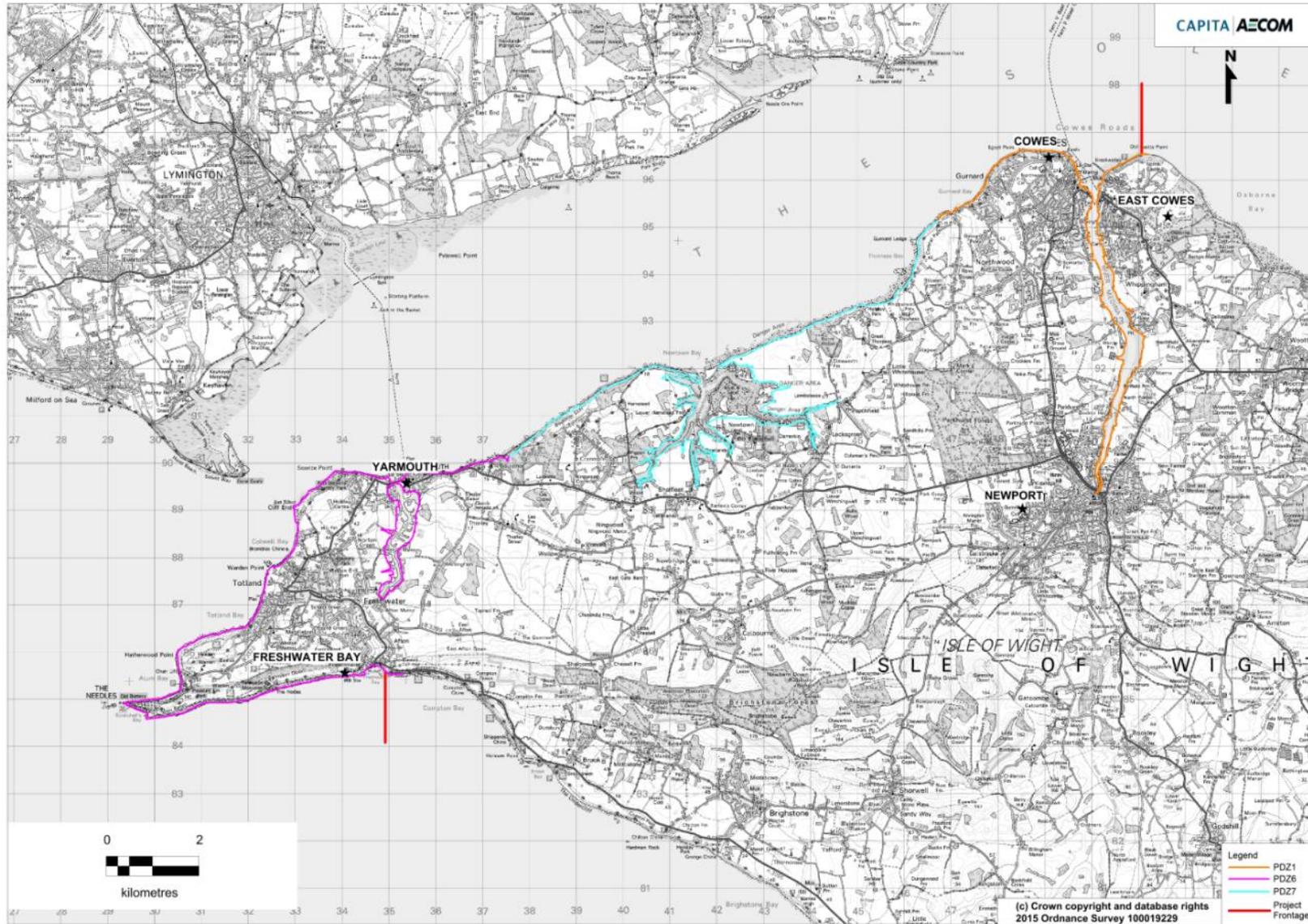


Figure 1: Isle of Wight SMP (2010) Policy Development Zone Locations

Box 1. The legislative basis for Habitats Regulations Assessment

Habitats Directive 1992
Article 6 (3) states that:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.”

Conservation of Habitats & Species Regulations 2010
The Regulations state that:

“A competent authority, before deciding to ... give any consent for a plan or project which is likely to have a significant effect on an internationally important wildlife site ... shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives ... the authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the Internationally important wildlife site”.

1.2 The West Wight Coastal Flood and Erosion Risk Management Strategy

Capita-AECOM has been commissioned by the Isle of Wight Council to develop a long-term Coastal Flood and Erosion Risk Management Strategy.

The Strategy provides an assessment of the risks and opportunities associated with coastal processes and presents the preferred management options to reduce the risks in a sustainable manner in the short (10 year), medium (10 -40 years) and longer term (40 – 100 years). In doing so, the Strategy forms an important element of the coastal management hierarchy and also provides guidance for spatial planning within the coastal zone.

Key stages of the Strategy development included:

- An assessment of the conditions and performance of existing coastal defences for the study frontage for the next 100 years;
- The development and evaluation of options for the maintenance and improvement of defences, based on careful consideration of all technical issues, economics, stakeholder interests, future developments and environmental impacts; and,
- Recommendation of a preferred long-term strategy to be adopted.

The HRA process has informed and confirmed the preferred strategy options through its identification of the likely significant effects of the implementation of the Strategy on relevant environmental receptors.

1.3 HRA of the Strategy

It is important to note that The Strategy sets the location, scale and general method of coastal management but does not define the specific details. The details will be defined during subsequent scheme appraisals and design stages. Since Coastal Flood & Erosion

Risk Management Strategies form the middle tier in a three-tiered system (with Shoreline Management Plans above and individual schemes below) the HRA work to accompany these documents also needs to be pitched at the appropriate level, culminating with the most detailed HRA being undertaken at the individual scheme level. This is in line with Communities & Local Government (CLG) guidance on the AA of Plans which makes it clear that:

“The comprehensiveness of the [Appropriate] assessment work undertaken should be proportionate to the geographical scope of the option and the nature and extent of any effects identified. An AA need not be done in any more detail, or using more resources, than is useful for its purpose. It would be inappropriate and impracticable to assess the effects [of a land use plan] in the degree of detail that would normally be required for the Environmental Impact Assessment (EIA) of a project.”

The Strategy management options considered are those defined in the Defra guidance (Defra, 2006), including: Do Nothing, Do Minimum, Sustain, Maintain, Improve, Managed Realignment, Adaption etc. These fall under the SMP polices such as Hold the [defence] Line, Advance the line, Managed Realignment, and No Active Intervention. The options are set over three time frames (often termed epochs), which are:

- 0-20 years (short term) 2005 - 2025;
- 20-50 years (medium term) 2025 - 2055; and
- 50-100 years (long term) 2055 - 2105.

It should be noted that under the Strategy the first time period runs from 2015 to 2025, while the longer term period extends 10 years beyond that of the SMP to 2115 to provide a 100 year appraisal period.

The study area consists of Shoreline Management Zones (SMZs) that overlap the SMP PDZs (Figure 2). Each SMZ is divided into Option Development Units (W1-32), also shown on Figure 2 and listed in Appendix 1. The European sites considered within this HRA report are shown in Figure 3.

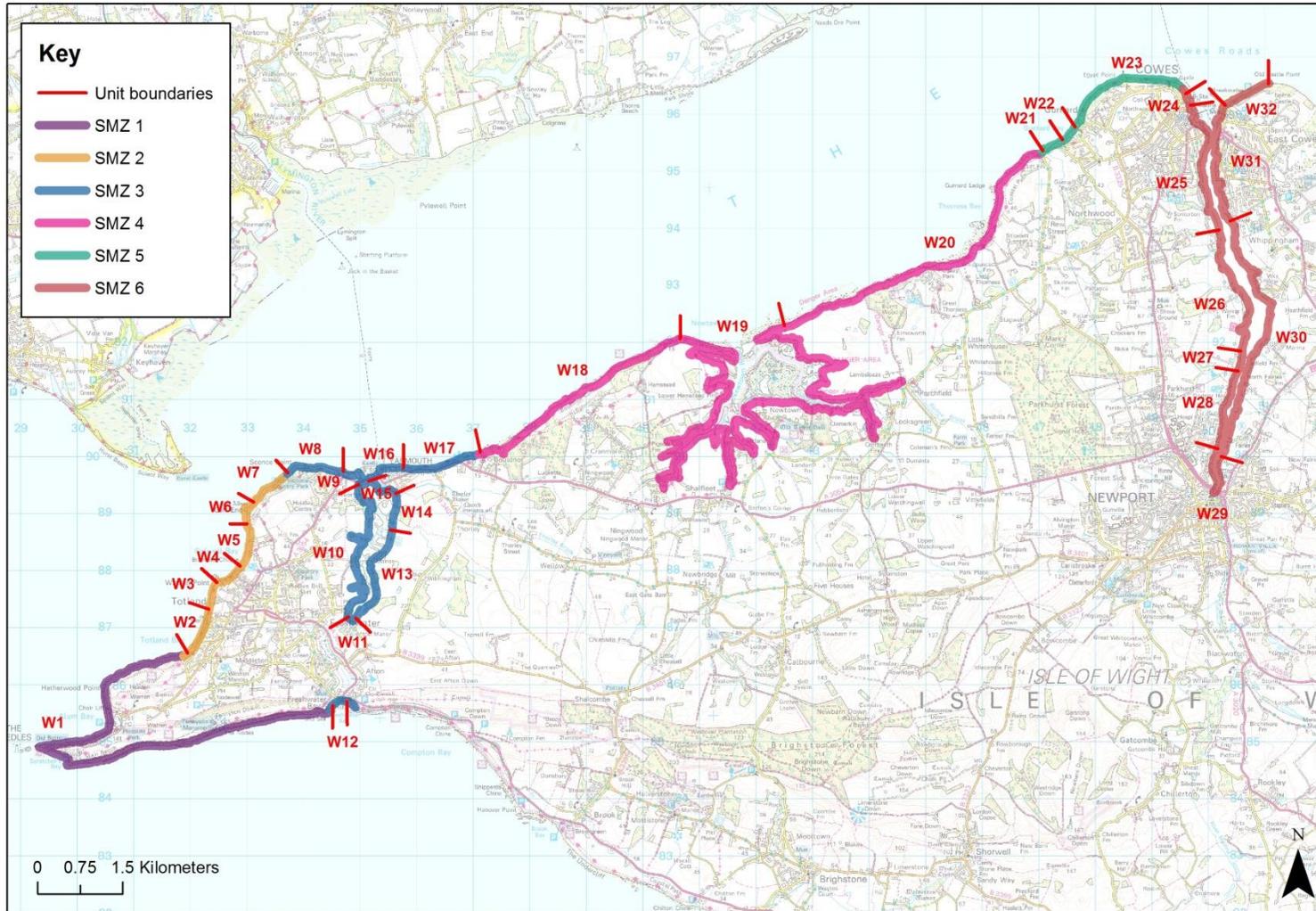


Figure 2: Strategy Management Zones (SMZs) and Option Development Units (W1-32)

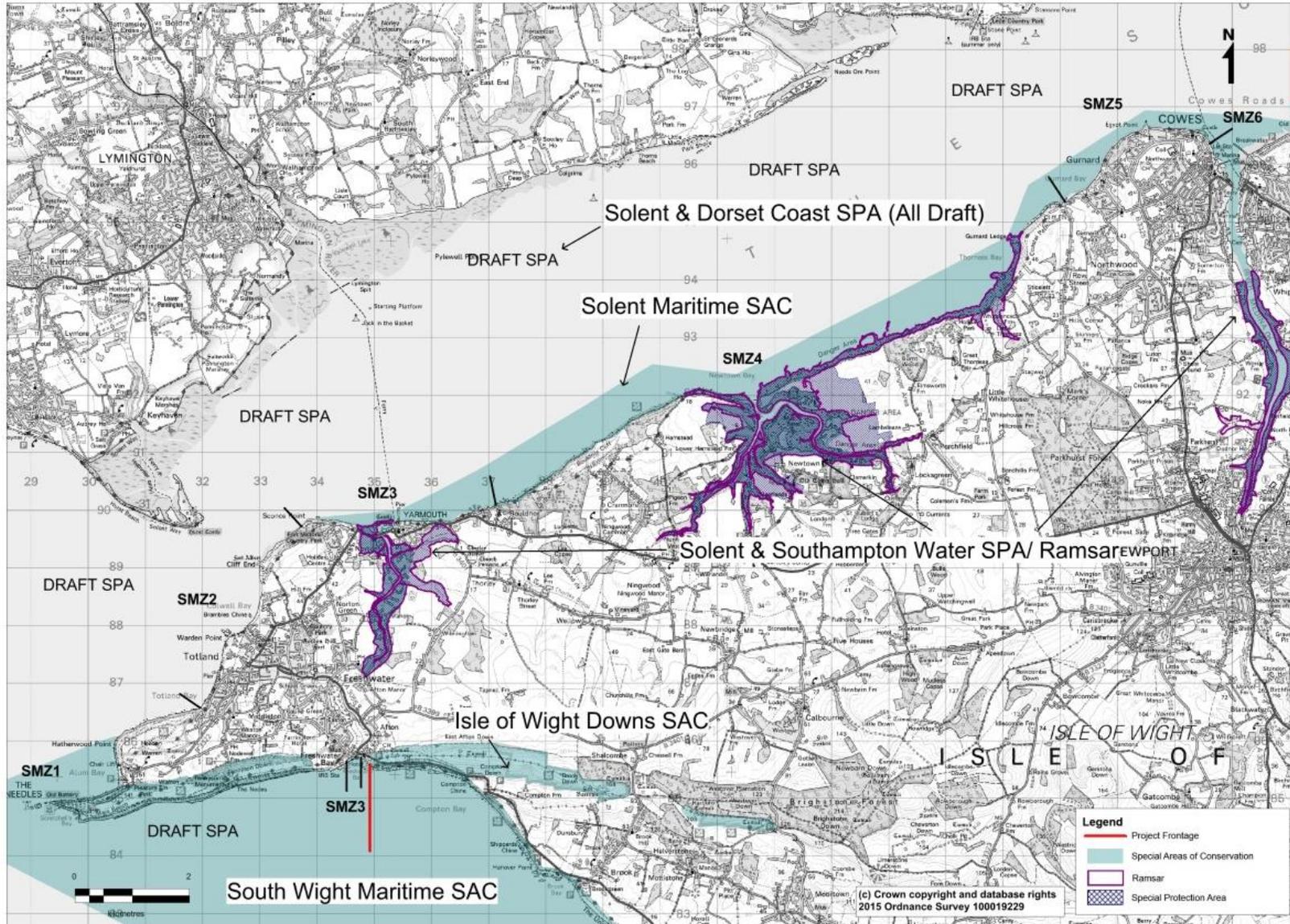


Figure 3: European Designated Sites AROUND West Wight included in Habitats Regulations Assessment.

The shoreline extends approximately 84km from Freshwater Bay to East Cowes, as detailed below:

SMZ 5 and 6 (SMP PDZ 1): **Cowes and the Medina Estuary** (from Gurnard Luck to Old Castle Point (East Cowes))

This area comprises the communities of Gurnard, Cowes, East Cowes and surrounding the Medina Estuary. This frontage is approximately 26km in length, inclusive of the Estuary. The current approach to shoreline management is a mix of **'hold the existing defence line'** and **'no active intervention'** depending on the assets at risk. The majority of the coastline is designated as a Special Area of Conservation (SAC) with Ramsar sites present within the estuary. South of the built up areas of Cowes and East Cowes, the Medina Estuary is designated as part of the Solent and Southampton SPA and Ramsar site. The entire stretch of coastline is also included within the current boundary of the proposed Solent and Dorset Coast SPA.

SMZ 1, 2 and 3 (SMP PDZ 6): **West Wight** (from the eastern margin of Freshwater around the West Wight headland to include Yarmouth (to the eastern margin of Port la Salle))

This zone extends approximately 27km in length and includes the communities of Freshwater, Alum Bay, Totland, Colwell, Yarmouth and Port la Salle. The current approach to shoreline management in this area is mixed with areas of defences, but many undefended areas and there are extensive areas protected by European Environmental designations.

The entire stretch of coastline is also included within the current boundary of the proposed Solent and Dorset Coast SPA.

SMZ 4 (SMP PDZ 7): **North-west Coastline** (from the eastern margin of Bouldnor to the western margin of Gurnard Luck)

This frontage extends approximately 39km in length, inclusive of Newtown Estuary. This area includes the areas of Hamstead, Newtown Estuary and Thorness Bay and the current approach to shoreline management in this area is **no active intervention**. SAC and Ramsar sites cover the entirety of the coast.

The entire stretch of coastline is also included within the current boundary of the proposed Solent and Dorset Coast SPA which is currently at the consultation period. Should the designation be confirmed, the environmental studies of the Strategy will be updated to consider in more detail the potential impacts on the new designation.

1.4 This Report

This report comprises the HRA Screening Report. The aim of the Screening Report is to:

- Undertake a high level risk assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is: *"Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"*

This report will be subject to consultation with the Isle of Wight Council and statutory consultees including the Natural England (NE), Historic England (HE) and the Environment Agency.

The report will also be made available to non-statutory consultees and stakeholders should they wish to participate in the consultation process.

2. Habitats Regulations Assessment – Methodology

2.1 Key Principles

The HRA will be guided by a series of key principles – see Table 1.

Table 1 - Key principles underpinning the proposed methodology

Principle	Rationale
Maximise value of existing information	We have made the best use of existing information where possible. This includes information gathered as part of the SMP HRA and Strategic Environmental Assessment, data collated by those involved in developing the Regional Habitat Creation Programme and information held by the Council ecologists, Natural England, the Environment Agency (EA) and others as appropriate.
Consult with Natural England, the Environment Agency and other stakeholders	We have ensured continued consultation with stakeholders for the duration of the assessment. We have ensured that we utilised information held by them and others and have taken on board their comments on the assessment process and findings. The scoping report confirmed impact pathways and European sites requiring consideration.
Ensure a proportionate assessment	We have ensured that the level of detail addressed in the assessment reflects the level of detail in the development planning for the frontage (i.e. that the assessment is proportionate).
Keep the process as simple as possible	We have endeavoured to keep the process as simple as possible while ensuring an objective and rigorous assessment in compliance with the Habitats Directive and emerging best practice.
Ensure a clear audit trail	We have ensured that the HRA process and findings are clearly documented in order to ensure a clearly discernible audit trail.

2.2 The Process of HRA

The HRA has been carried out in the continuing absence of formal Government guidance on the HRA of plans, but within the context of precedent set by other Coastal Strategies. Communities & Local Government (CLG) released a consultation paper on AA of Plans in 2006². As yet, no further formal guidance has emerged although informal guidance documents exist, produced by RSPB and for internal use by Natural England. Figure 1 below outlines the stages of HRA according to current draft CLG guidance. The stages

² CLG (2006) Planning for the Protection of European Sites, Consultation Paper

are essentially iterative, being revisited as necessary in response to more detailed information, recommendations and any relevant changes to the plan until no significant adverse effects remain.

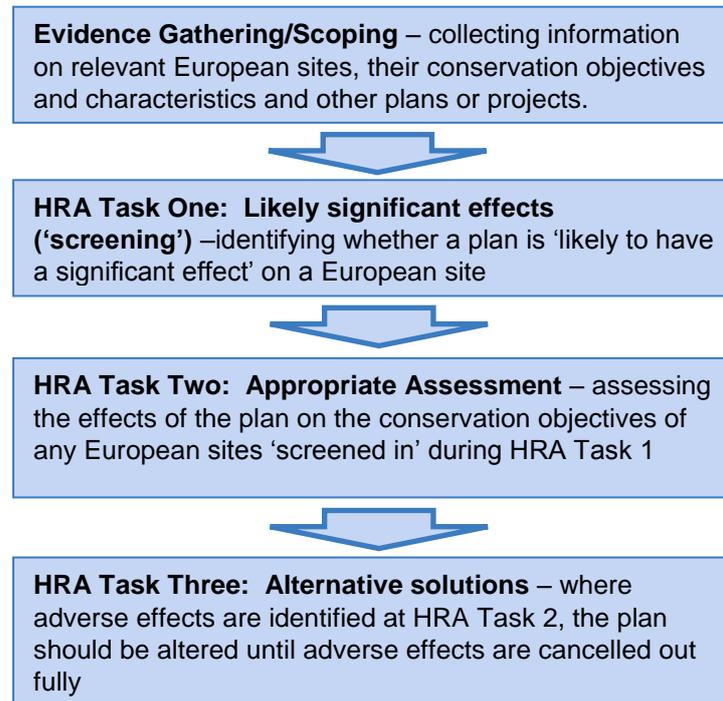


Figure 1: Four-Stage Approach to Habitats Regulations Assessment

2.3 HRA Task One: Likely Significant Effects (Screening)

The first step in HRA is a simple screening exercise to determine Likely Significant Effects (LSE) - essentially a high level risk assessment to decide whether the full subsequent stage known as AA is required. The essential question is:

“Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon internationally important wildlife sites?”

The objective is to ‘screen out’ those plans and projects that can, without any detailed appraisal, be said to be unlikely to result in significant effects upon internationally important wildlife sites, usually because there is no mechanism or pathway connecting the plan/project with internationally important wildlife sites.

In particular, reference is made to ensuring that each policy option is appraised not in isolation but within the context of (‘in combination’ with) other relevant plans and projects. The Likely Significant Effects (Screening) stage is the purpose of this report.

2.4 HRA of Isle of Wight SMP 2

The Appropriate Assessment of the Isle of Wight Shoreline Management Plan (2) has already undertaken a detailed precautionary assessment of likely significant effects on Natura 2000 sites as a result of SMP policy.

The HRA of the Shoreline Management Plan³ identified that the policies for PDZ1 (SMZ 5 and 6) and PDZ 7 (SMZ 4) would not lead to likely significant effects on European designated sites.

However, for PDZ6 (specifically SMZ 3b – Western Yar Valley) it was concluded that:

“The opening up of defences at Thorley Brook (PU6C.5) in the second epoch will result in the flooding of Thorley and Barnfields Stream, which will have an adverse effect on the integrity of the designated coastal grazing marshes and (and undesignated) freshwater habitats that are features of the Solent and Southampton [sic] Ramsar site, as well as bird species that use the coastal grazing marshes for feeding that are features of the Solent and Southampton SPA. The freshwater reed beds and grazing marshes landward of the Thorley Brook defences offer important wetland areas for high water roosting and feeding activities of water [birds] and wildfowl (SPA interest feature and Ramsar Criterion 1), as well as supporting rare and important species (Ramsar Criterion 2). Saline intrusion would cause the loss of ca. 4.0 ha of undesignated freshwater habitat around the line of the two rivers and 30.9 ha of designated grazing marsh habitats (plus 5.3 ha of undesignated grazing marsh). If saline intrusion is prevented from extending beyond Thorley Bridge (under the Thorley Road) then 13.1 ha of grazing marsh will be remain unaffected. The change in habitat from coastal grazing marsh that offer feeding grounds and high water roost sites for wildfowl would be gradually replaced by saltmarsh and mudflat. It is likely that though the area would still provide an important feeding ground for many bird species, in that some birds would adapt and find new roost sites over time, whilst others would not since the function of mudflats and saltmarsh are different to that of coastal grazing marsh. Therefore, the community of birds may change over time with the MR policy as the feeding function of the area changes. It has been concluded that the change in 30.9 ha of habitat will cause an adverse effect on the Solent and Southampton Water SPA and Ramsar site. It has been predicted that 30.9 ha of coastal grazing marsh that support the SPA bird species that currently use this site will need to be sought for compensation through the Southern RHCP.”

Further appraisal of the SMP⁴ identified that specific mitigation approaches should include a programme of action for monitoring, consultation and studies to improve the predictions of intertidal developments and understanding of the impact of gain in intertidal mudflat and saltmarsh and loss of coastal grazing marsh. It was also established that loss of habitat function, as a consequence of the recommended SMP2 policy within the Western Yar Estuary (PU6C.5) can potentially be mitigated through habitat management.

A statement of Imperative reasons of Overriding Public Interest (IROPI) noted that:

“The preferred policy of HTL/MR/NAI results in creating a significant amount of mudflat and saltmarsh, the latter of which is an important declining Biodiversity Action Plan habitat that is difficult to recreate, as there is not often opportunity to do so, as well as enabling new coastal grazing habitat with the function of providing feeding and high tide roost sites for wintering bird species to be planned and created in advance of loss. If the SMP2 were not to be implemented, and the defences and sluices in this policy unit were to be left unmaintained it would result in more detrimental consequences to the Solent and Southampton Water SPA and Ramsar site and its interest features than if the active policy

³

http://www.coastalwight.gov.uk/smp/FINAL_SMP_for_web/pdf_Appendices/Appendix_I_HRA_Dec10_Final.pdf?bcsi_scan_E956BCBE8ADBC89F=0&bcsi_scan_filename=Appendix_I_HRA_Dec10_Final.pdf

⁴

http://www.coastalwight.gov.uk/smp/FINAL_SMP_for_web/pdf_Appendices/Appendix%20L_IROPI_Dec10_Final.pdf?bcsi_scan_E956BCBE8ADBC89F=0&bcsi_scan_filename=Appendix%20L_IROPI_Dec10_Final.pdf

suite was implemented. The policy provides time in the first epoch to investigate and plan the controlled management of the saline intrusion through the existing defence line (by a policy of MR in the second epoch) of the sluices at Thorley Brook and Barnfields Stream, followed by NAI in the long term. Whilst this is a damaging plan in one way, it is the most sustainable and least damaging option in the long term (see Box F). Re-opening the sluices through a MR policy will allow the Western Yar estuary to open up more naturally and increase the amount of designated mudflat and saltmarsh habitats (which is particularly important with the decline of internationally and nationally important saltmarsh species) and allow estuary function to improve, adapt and evolve with sea level rise.”

Compensatory habitat must be identified, either to cater for the loss of 31ha of coastal grazing marsh as a result of the Isle of Wight SMP or in combination with a loss of 39ha of similar habitat as a result of the North Solent SMP. There is expectation that this will occur through the Environment Agency’s Southern Regional Habitat Creation Programme (RHCP).

The HRA Stage 4 of the SMP indicates that *“the Environment Agency’s Southern Regional Habitat Creation Programme (RHCP) is a dedicated, resourced plan for delivering compensatory habitat. To date the RHCP has firm delivery plans for the first epoch (first 20 years), where the necessary compensation will be created and ecologically functional by the time it is required. It is reasonable to expect that this method of providing compensation habitat will continue for Epochs 2 and 3. Natural England themselves have agreed nationally that the Regional Habitat Creation Schemes are an appropriate mechanism for securing and delivering compensatory habitat.”*

Since the adverse effect has already been identified as resulting from the SMP, and the RHCP has been identified as the delivery mechanism for securing compensatory habitat provision, it is considered that it is not necessary for this issue to be reinvestigated, or habitat losses recalculated, for this Strategy (or for the Strategy itself to identify specific parcels of compensatory habitat), provided that it can be confirmed that the Strategy would not result in adverse effects of a different or greater nature than was determined for the SMP, and that the RHCP will incorporate the identification of compensatory habitat as part of its remit for Epoch 2 (2025 – 2055).

If the Strategy resulted in any deviations from SMP policy for PDZ6 (particularly the aforementioned SMZ3b – Western Yar Valley) that would increase habitat loss above the level assumed in the SMP HRA, the assumptions stated in the previous paragraph would need to be revisited.

2.5 HRA Screening of the Strategy

The HRA Screening builds upon the work undertaken for the Isle of Wight SMP. It focuses upon:

- Confirming whether changes in policy at The Strategy level (if any) would alter the conclusions reached at SMP level, either negatively (e.g. additional coastal squeeze through the change from an NAI to HTL policy) or positively (such as a change from an HTL to NAI policy which could result in reduced intertidal habitat losses compared to those determined for the SMP);
- Discussing whether in areas of Hold The Line (HTL) there is the potential for an increase in defence footprint as a result of the preferred Strategy option and whether this would alter the habitat loss/gain conclusions reached at SMP level. Any increases in habitat loss can be very broadly estimated at the Strategy level using an assumed typical extent of footprint increase for the relevant sections of

frontage, but cannot be calculated precisely until the scheme level, since it is only at that level that the precise method for achieving HTL is confirmed;

- Identifying whether, based on the probable broad construction methods/processes that would be employed, there would be any potential for disturbance to SPA waterfowl (e.g. use of piling), and if so what should be done to mitigate such disturbance to a level that is not significant;
- Confirming whether any assumptions made about this frontage at the SMP level are now out-of-date. For example, the proposed Solent and Dorset Coast SPA was not designated at the time of adoption of the SMP, and therefore will be a new material consideration when undertaking HRA of the Strategy.

2.6 Assessment 'in combination'

The key plans and projects requiring consideration 'in combination' with the Strategy are the other Coastal Strategies along the Isle of Wight SMP frontage and the adjacent SMP for the North Solent. It is also considered appropriate to include the additional housing, transportation and commercial/industrial allocations proposed for the Strategy coastline in the short term (2015 – 2025) . This development will be delivered as set out in the Isle of Wight (Island Plan) Core Strategy. Studies have been undertaken into recreational disturbance of the Solent by the Solent Forum (the Solent Disturbance and Mitigation Project⁵) and these will be referred to with regard to the 'in combination' assessment. It is reasonable to conclude on a precautionary basis that the increased population associated with this new residential development may result in increased recreational pressure within the Solent in particular. Therefore a Supplementary Planning Document (SPD) has been adopted on this matter by the Isle of Wight Council.

It is not for this Strategy HRA to undertake a detailed assessment of the impacts of any of these plans but rather to make a high-level qualitative appraisal in order to place The Strategy within an appropriate context.

The medium to long term (2025 – 2115) are sufficiently far in the future that no other plans or projects that will commence within those epochs are currently identifiable.

⁵ http://www.solentforum.org/forum/sub_groups/Natural_Environment_Group/Disturbance_and_Mitigation_Project/

3. Potential Impact Pathways

3.1 Introduction

There are various ways in which a Coastal Flood & Erosion Risk Management Strategy can result in adverse effects on internationally designated wildlife sites. Those pathways are discussed in this chapter.

3.2 Direct Landtake

Managed Realignment policies (i.e. policies that require flood defences to be moved) can have a beneficial impact on internationally important wildlife sites through allowing intertidal habitats to retreat inland in response to rising sea levels, thereby alleviating coastal squeeze. Managed Realignment Policy can (depending on the site and habitats) also have an adverse effect if the flood defences actually serve to protect habitat that would suffer from heavy tidal inundation. For example, in the Portchester to Emsworth Strategy and Hamble to Portchester Strategy in the North Solent area, it was concluded that Managed Realignment policies (like that proposed for the Thorley Brook area) would have a beneficial effect on the intertidal habitat but an adverse effect on the grazing marsh that currently lies behind the defences.

Coastal defences can also result in direct landtake by advancing works into areas of internationally designated habitat through an increase in defence footprint (or through the footprint of construction access routes) if the defences are being maintained to an improved standard. This could be both a temporary effect (e.g. if landtake is used for construction compounds but removed when defence improvement works are complete) or a permanent effect.

3.3 Coastal squeeze

Rising sea levels can be expected to cause intertidal habitats (principally saltmarsh and mudflats) to migrate landwards, dependant on the topography. However, in built-up areas, such landward retreat is often rendered impossible due the presence of sea walls and other flood defences.

In addition, development frequently takes place immediately behind the flood defences, so that the flood defences cannot be moved landwards to accommodate managed retreat of threatened habitats. The net result of this is that the quantity of saltmarsh and mudflat adjacent to built-up areas will progressively decrease as sea levels rise. This process is known as 'coastal squeeze'. In areas where sediment availability is reduced, the 'squeeze' also includes an increasingly steep beach profile and foreshortening of the seaward zones. This would be a permanent effect.

Defra's current national assessment is that the creation of an annual average of at least 100 ha of intertidal habitat associated with Internationally important wildlife sites in England that are subject to coastal squeeze, together with any more specifically identified measures to replace losses of terrestrial and supra-tidal habitats, is likely to be required to protect the overall coherence of the Natura 2000 network. This assessment takes account of intertidal habitat loss from internationally important wildlife sites in England that is caused by a combination of all flood risk management structures and sea level rise. The assessment will be kept under review taking account of the certainty of any adverse effects and monitoring of the actual impacts of plans and projects.⁶

⁶ Defra. 2005. Coastal Squeeze – Implications for Flood Management.
<http://www.defra.gov.uk/envirom/fcd/policy/csqueeze.pdf>

3.4 Loss of high tide roosts

The boundaries of European sites are defined to encompass as much as possible of the key land areas essential to the maintenance of populations of species of European importance. However, for migratory or otherwise highly mobile species it is not possible to encompass all the areas of land necessary for the maintenance of the population within the site boundary. In these instances, areas outside the European site boundary require preservation.

The Solent European sites are noted for a suite of highly mobile waterfowl and other birds. Of particular note, it is known that the populations of Brent goose for which the SPA/Ramsar sites are designated are highly dependent upon areas of open short-mown grassland around the SPAs and other types of habitat as high tide roosts and feeding areas.

3.5 Disturbance

Depending on the timing of construction works Coastal Flood & Erosion Risk Management Strategies can also indirectly result in disturbance of the species for which the internationally important wildlife site was designated, particularly for those sites designated for bird interest. On such sites, flood defence maintenance can cause short-term localised disturbance of breeding birds or wintering birds depending on the time of year but careful programming of works can help reduce this disturbance. This would be a temporary effect.

3.6 Changes in sediment transport (coastal processes)

Many internationally important coastal wildlife sites are partially dependent on receiving sediment inputs via long-shore transport from other parts of the coastline. The presence of coastal defences (or their ongoing maintenance) can reduce this sediment input which, when considered within the context of rising sea levels, can lead to a long-term incremental reduction in the habitat available as erosion and inundation outpace accretion. This would potentially be a permanent effect. Coastal defences can also serve a useful purpose in collecting and storing sediment which can then become colonised by internationally important species and habitats.

3.7 Contamination

There is the potential for Strategy options to introduce or increase contamination risk for internationally important sites by resulting in the release of contamination that is currently locked into soils on the shore, and thereby introducing new pathways linking sources to receptors. 'Doing Nothing' could also potentially result in this risk by a process of gradual erosion. This would be a temporary effect but may be of considerable duration. The consideration of this impact would require information not only on the contamination risk associated with the frontage but also how vulnerable the interest features of the internationally important sites are to increased contamination of the water column. There is also the potential for The Strategy to provide beneficial impacts by preventing or blocking potential pathways which could link contaminated sites to receptors.

4. Background Information Regarding Relevant European Sites

4.1 Solent Maritime SAC

The Solent Maritime SAC extends along the north and north-west coastline of the Isle of Wight and covers the majority of the intertidal area along the western Solent, west side of Southampton Water and the Hamble.

The site is designated under the EU Habitats Directive for its Annex I habitats which include:

- *Salicornia* and other annuals colonising mud and sand
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- *Spartina* swards (*Spartinion maritimae*)
- Mudflats and sandflats - not submerged at low tide
- Annual vegetation drift lines
- Perennial vegetation of stony banks
- Coastal lagoons
- Shifting white dunes with *Ammophila arenaria*
- Estuaries
- Sandbanks - slightly covered by sea water all the time

The conservation objectives of the Solent Maritime SAC are to maintain in favourable condition, subject to natural change the Annex 1 habitats for which the site has been designated as listed above. The site covers a complex of estuarine systems with a wide range of estuary types and diversity of habitats. The estuary habitats support a wide variety of communities which depend on the ecological functioning of other communities, therefore loss of habitats/communities would be detrimental to the favourable condition of the estuaries feature. The key sensitivity is the loss or reduction in the Annex I habitats. Annual vegetated drift lines are sensitive to physical loss as a result of coastal squeeze and changes in coastal processes may affect the sediment budget of estuaries and reduce the supply of sediment to areas of drift line vegetation. Saltmarsh (*Salicornia*, Atlantic salt meadows and *Spartina* swards), mudflats and sandflats are sensitive to physical loss through coastal squeeze due to sea level rise.

The site is also designated for the Annex II species Desmoulin's whorl snail (*Vertigo moulinsiana*). Desmoulin's whorl snail is the largest *Vertigo* species, with a shell height up to about 2.6 mm. It normally lives on reed-grasses and sedges, such as reed sweet-grass.

4.2 South Wight Maritime SAC

The South Wight Maritime SAC extends along the southern shore of the Isle of Wight, off the coast of southern England, and includes a number of subtidal reefs that extend into the intertidal zone. This site is selected on account of its variety of reef types and associated communities, including chalk, limestone and sandstone reefs.

South Wight Maritime SAC on the south coast of England also represents contrasting Cretaceous hard cliffs, semi-stable soft cliffs and mobile soft cliffs.

The southern shore of the Isle of Wight includes a number of either submerged or partially submerged sea caves. Examples of this habitat can be found from the Needles along the south-west coast of the Island to Watcombe Bay (near Freshwater Bay).

The site is designated under the EU Habitats Directive for its Annex I habitats which include:

- Reefs
- Vegetated sea cliffs
- Submerged or partially submerged sea caves

The conservation objectives of the South Wight SAC are to maintain in favourable condition, subject to natural change the Annex 1 habitats for which the site has been designated as listed above.

Key sensitivities include coastal squeeze of cliff habitats due to erosion, development or intensive agriculture in the hinterland and development in the intertidal/subtidal habitat zones.

4.3 Isle of Wight Downs SAC

The Isle of Wight Downs SAC represents one of the best examples of chalk grassland in the south of England under maritime influence. The SAC meets the coast between The Needles and Compton Bay along the south-west coast of the Isle of Wight. The exposed and weathered cliff tops provide a range of sheltered and exposed conditions. The most exposed chalk cliff tops support important assemblages of nationally rare lichens.

The site is designated under the EU Habitats Directive for its Annex I habitats which include:

- Dry heaths
- Vegetated sea cliffs
- Dry grasslands and scrublands on chalk or limestone, including important orchid sites.

It is also designated for its population of early gentian, *Gentianella anglica*.

The conservation objectives of the Isle of Wight Downs SAC are to maintain in favourable condition, subject to natural change the Annex 1 habitats and species for which the site has been designated as listed above.

A key sensitivity of the SAC is that the vegetated sea cliffs are vulnerable to cliff stabilisation schemes.

4.4 Solent & Southampton Water SPA/Ramsar site

The Solent and Southampton Water SPA extends from Hurst Spit to Hill Head along the south coast of Hampshire, within the SMP area and from Yarmouth to Whitecliff Bay along the north coast of the Isle of Wight.

The site is comprised of a series of estuaries and harbours with extensive mudflats and saltmarshes together with adjacent coastal habitats including saline lagoons, shingle beaches, reedbeds, damp woodland and grazing marsh. These coastal habitats are important for breeding gulls and terns, and wintering wildfowl.

This site qualifies under Article 4.1 of the EU Birds Directive by regularly supporting 1% or more of the Great Britain breeding population of Annex I species. The Annex 1 species the

site supports includes Mediterranean gull (*Larus melanocephalus*), little tern (*Sterna albifrons*), roseate tern (*Sterna dougallii*) common tern (*Sterna hirundo*) and Sandwich tern (*Sterna sandvicensis*). The site also qualifies under Article 4.2 of the EU Birds Directive by regularly supporting 1% or more of the biogeographic population of migratory species and 51,381 waterfowl. The migratory species the site supports include Eurasian teal (*Anas crecca*), dark bellied Brent goose (*Branta bernicla bernicla*), ringed plover (*Charadrius hiaticula*) and black-tailed godwit (*Limosa limosa islandica*).

The conservation objectives of the Solent and Southampton Water SPA are to maintain in favourable condition, subject to natural change, the habitats which support internationally important Annex I species, internationally important migratory species and internationally important assemblages of waterfowl. These habitats include sand, shingle, saltmarsh, intertidal mudflats, intertidal sandflats, boulder and cobble shore, mixed sediment shores, shallow coastal waters, saline lagoons, coastal grazing marsh, open water and terrestrial grasslands.

Key site sensitivities include activities or development resulting in the physical loss of the important nesting, roosting and feeding habitats for species such as little tern (*Sterna albifrons*), roseate tern (*Sterna dougallii*), common tern, Sandwich tern (*Sterna sandvicensis*) and Mediterranean gulls (*Larus melanocephalus*). Loss of habitat could result from maintaining coastal defences, thereby causing coastal squeeze of intertidal habitats or allowing defences protecting landward habitats to fail, thereby causing permanent inundation of these landward habitats. Disturbance is also a key sensitivity including physical disturbance through human activities and non-physical disturbance such as noise, which can have an effect by displacing birds from their feeding grounds and affect their survival.

The Ramsar site extends from Hurst Spit to Gilkicker Point along the south coast of Hampshire and along the north coast of the Isle of Wight. The site comprises estuaries and adjacent habitats including intertidal flats, saline lagoons, shingle beaches, saltmarsh, reedbeds, damp woodland and grazing marsh. The diversity of the habitats supports internationally important numbers of wintering waterfowl, important breeding gull and tern populations and an important assemblage of rare invertebrates and plants.

This site is designated under the Ramsar criteria 1, 2, 5 & 6:

Ramsar criterion 1 - The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual string double tide flow and has long periods of slack water at high and low tide. It includes many wetland habitats characteristic of the biogeographic region including saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs.

Ramsar criterion 2 - The site supports an important assemblage of rare plants and invertebrates; at least 39 British Red Data Book invertebrates and at least eight British red Data Book plants represented on site.

Ramsar criterion 5 – A wintering bird assemblage of international importance, an average of 51343 waterfowl per winter (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species populations occurring at levels of international importance:

- Ringed plover, *Charadrius hiaticula* (1.2% of the UK population)
- Dark bellied Brent goose, *Branta bernicla bernicla* (3% of the UK population)
- Eurasian teal, *Anas crecca* (1.3% of the UK population)
- Black-tailed godwit, *Limosa limosa islandica* (3.5% of the UK population).

The key wetland types present are listed below.

- Rocky marine shores
- Sand/ shingle shores (including sand dunes)
- Intertidal mud, sand or salt flats
- Saltmarshes
- Coastal brackish/saline lagoons
- Permanent saline/brackish/alkaline marshes/pools
- Permanent freshwater marshes/pools
- Freshwater, tree dominated wetlands

4.5 Solent and Dorset Coast pSPA

On January 12th, 2015, Natural England issued Technical Information Note 166 (TIN166), which proposes the designation of a new marine SPA provisional called the Solent and Dorset Coast SPA.

This pSPA would be designated for its breeding colonies of sandwich tern (*Sterna sandvicensis*), common tern (*Sterna hirundo*) and little tern (*Sterna albifrons*). The pSPA would cover an area from Worbarrow Bay in the west to Middleton-on-Sea in the east, with a landward boundary at Mean Low Water where it abuts existing SPAs where terns are a feature and Mean High Water elsewhere. The seaward extent of the pSPA would cover foraging ranges from existing tern colonies known in the area.

4.6 European designated sites associated with the Individual Strategy Management Zones (SMZs)

West Wight - Strategy Management Zones 1, 2 and 3 (SMP PDZ6)

This area covers zones SMZ1, SMZ2, SMZ3a and SMZ3b in the Strategy. Additionally a section to the south of the Causeway Road at Freshwater, extending to Freshwater Bay, will be included as SMZ3c.

On the south side of the peninsular there are two international designations. The *South Wight Maritime SAC* extends from the south-eastern extent of Freshwater Bay to Hatherwood Point (Headon Warren), whilst the *Isle of Wight Downs SAC* that is designated for the grasslands, vegetated sea cliffs and Heathland, includes the eastern headland at Freshwater Bay and the cliffs along Tennyson Down to the Needles. The latter SAC has a SSSI 'Headon Warren & West High Down' that protects the cliffs of Tennyson Down and Headon Warren under the Habitats Regulations. There are no international designations from Hatherwood Point along Totland Bay and Colwell Bay to Sconce Point.

On the northern coastline of the area there are components of three international sites, the *Solent Maritime SAC* and the *Solent and Southampton Water SPA and Ramsar sites*. The area of all three designations includes the mudflats and saltmarsh of the Western Yar estuary, including Norton Spit that extends across the mouth, to the road at Freshwater near Afton Manor. The Solent Maritime SAC also includes the intertidal and subtidal areas from Sconce Point to Bouldnor. The SPA and Ramsar sites include the flood zone areas of two streams feeding into the Western Yar estuary, at Thorley Brook immediately south of the Yarmouth town (and the main access road) and at Barnfield Stream further south. There is one component SSSI for these international designations, the Yar Estuary SSSI,

which protects the estuary, including the intertidal and related brackish wetland habitats, which extends to the tidal limit at Causeway Road.

The entire stretch of coastline is also included within the current boundary of the proposed Solent and Dorset Coast SPA.

North-west Coastline – Strategy Management Zone 4 (SMP PDZ 7)

The coastline between the eastern margin of Port la Salle through to the western margin of Gurnard Luck is almost completely undefended at present and sits within three international designations, the *Solent Maritime SAC, the Solent and Southampton Water SPA and Ramsar sites*. The entire coastline for this section is part of the SAC, and includes estuaries, saltmarsh and *Spartina* swards for which it is designated. The Solent and Southampton Water SPA and Ramsar sites protect the entirety of Newtown Estuary, the coastline around the entrance and the coastline to the east until Gurnard Ledges. The extent of the SPA goes beyond that of the SAC and Ramsar sites, protecting the entire flood zone, and includes areas of coastal grazing, in particular to the east of the estuary.

The entire stretch of coastline is also included within the current boundary of the proposed Solent and Dorset Coast SPA.

Cowes and Medina Estuary - Strategy Management Zones 5 and 6 (SMP PDZ1)

There are two internationally designated areas along the Old Castle Point (East Cowes) to Gurnard Luck stretch of coastline. The Solent Maritime SAC covers the entirety of this coastline, running from Sconce Point west of Yarmouth to the eastern end of Osborne Bay (covering 11,325ha). South of the built up areas of Cowes and East Cowes, the Medina Estuary is designated as part of the Solent and Southampton SPA and Ramsar site. The SPA protects a number of internationally important wildfowl, wading and overwintering birds that use the estuarine mudflat areas for feeding.

The entire stretch of coastline is also included within the current boundary of the proposed Solent and Dorset Coast SPA.

5. HRA Screening

The HRA screening exercise takes into consideration the conservation requirements of the European designated sites listed in Chapter 4 of this report⁷, and examines the potential for the Strategy to lead to likely significant effects in line with the Pathways of Impact outlined in Chapter 3, both alone and in combination with other relevant plans and projects.

The following tables consider the Pathways of Impact presented in Chapter 3 and present the screening assessments for each recommended option that has been put forward for consideration.

Green shading in the final column indicates an Option that has been screened out of further consideration due to the absence of any mechanism for an adverse effect on European sites via the pathway of Impact being assessed in that table.

Orange shading indicates that further Appropriate Assessment (or at least further screening in the presence of further information) is required since a pathway of impact exists that cannot be screened out at this stage.

Table 2: Assessment of preferred options - Direct Landtake

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
1	W1	1	Do nothing	NAI	<p>The 'do nothing' approach is in line with the SMP policy for this area which is for No Active Intervention.</p> <p>The only designated site along this SMZ is South Wight Maritime SAC. Natural coastal erosion is considered to be beneficial to the SAC.</p> <p>Therefore the HRA screening conclusion is for no likely significant effects.</p>

⁷ <http://publications.naturalengland.org.uk/category/6528471664689152>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
2	W2-W7	2	Do minimum: H&S and access and develop coastal change management area plan for clifftop areas (W2-6)	NAI and HTL	<p>The SMP policies along this frontage are a mixture of HTL and NAI. A 'do minimum' approach may deviate from HTL policies under the SMP, however there are no European sites designated along this SMZ that would be likely to be affected by reduced maintenance of existing defences as proposed by the Strategy.</p> <p>The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE from landtake due to coastal defence works.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3a	W8-9 W15-17	3	<p>Maintain and sustain 1.33% AEP SoP with Temporary Flood Barriers. Improve from 2055.</p> <p>Manage and reduce flooding to areas at significant risk with temporary flood barriers. Prevent erosion to critical infrastructure serving the town. Raise / implement new defences (bunds and floodwalls) to manage longer term increasing flood and erosion risk posed by sea level rise (with the exception of W8 which is only to maintain H&S and access requirements).</p>	HTL in all Epochs east of the Yar estuary, or HTL in Epoch 1 then NAI west of the Yar estuary, on the coast.	<p>The strategy of maintaining existing defences along the majority of this SMZ means that there will not be likely significant effects on Solent Maritime SAC or Solent and Southampton Water SPA and Ramsar through direct landtake as defences will be retained in, or landwards of, their current alignment. It is possible that in order to provide defences of a sufficient standard in the future under a HTL policy, there could be a requirement to encroach further into the intertidal zone (for example if the crest of the defences needs to be raised to allow for rising sea levels, the base of the structure may require widening). However, it is anticipated that given that the shoreline through W8-9 and W15-17 is less than 4km in length and allowing for an incremental forward or backward movement of defence toes (taken to be less than 2m), the loss of intertidal habitat would be minimal. SMP calculations predict a loss of 0.4ha of saltmarsh and mudflat from the SAC as a result of existing SMP approaches⁸. Overall the SAC will experience a much greater increase in mudflat habitat (142ha through the implementation of the North Solent SMP).</p> <p>The HRA of the SMP notes that “<i>the defences along Norton Spit are to be held for the duration of the SMP, which will ensure that the mudflat and saltmarsh on the landward side of the spit are maintained, resulting in a beneficial effect of the HTL policy. Furthermore, allowing the adjacent coastline between Sconce Point and Norton to naturally erode in the medium to long term will ensure an increase of sediment downdrift, resulting in accretion of Norton Spit which would further protect the mudflat and saltmarsh on the landward side of the defence structures.</i>”</p> <p>The precise nature of any defences and their alignments would be determined at a scheme-specific level and these would need to be subject to project-level HRA screening.</p> <p>At this stage therefore it is concluded that there is no likely significant effect on the European sites from the Strategy.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3b	W10 W13-14	5	<p>Do Minimum with Thorley Brook Managed Realignment (from 2025)</p> <p>Managed realignment at Thorley Brook to provide environmental mitigation and create intertidal habitat. Recommend PLP for isolated residential properties at very significant flood risk (and maintain cycle and foot path access).</p>	<p>NAI with the exception of Thorley Brook and Barnfields Stream where the approach is HTL in Epoch 1, MR in Epoch 2 and NAI in Epoch 3.</p>	<p>The HRA of the SMP concluded that MR at Thorley Brook would lead to an adverse effect on Solent to Southampton Water SPA and Ramsar through saline intrusion and loss of coastal grazing marsh habitat. A total of 31ha of coastal grazing marsh would be lost. It was determined by IROPI that compensation for this loss of habitat would be achieved through delivery via the Southern Region RHCP (Regional Habitat Creation Plan). Without such compensatory habitat provision the West Wight Coastal Flood and Erosion Risk Management Strategy would lead to a likely significant adverse effect on the SPA/ Ramsar in line with the conclusion of the HRA of the SMP.</p> <p>A LSE may therefore be considered to arise from Epoch 2 but IROPI/No Alternatives for the SMP has already been undertaken and it has been agreed that compensatory habitat provision will need to be delivered (which should be taken to mean created/secured AND functional) by RHCP before the Strategy MR policy can be implemented. It will be the responsibility of the MR scheme developers to confirm that this has occurred.</p> <p>Compensatory habitat will comprise grazing marsh including provision of suitable habitat that would provide compensatory high tide roosts sites.</p> <p>Although a conclusion of LSE on Solent and Southampton Water SPA/ Ramsar has been reached, further Appropriate Assessment is not required since the Strategy is in line with agreed IROPI of the SMP and specific measures should be addressed within project-level HRAs.</p> <p>As a result of a managed realignment scheme at the Thorley Brook site, the SMP has identified that mudflat and saltmarsh habitat would be created at the site. There is potential for up to 34.9 ha of saltmarsh/mudflat habitat creation in this area.</p>

⁸ Isle of Wight SMP2: Appendix I HRA Stage 3: Final AA Report. Royal Haskoning.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3c	W11-12	4	<p>Maintain (and PLP) then Improve (2055) –</p> <p>Maintenance of existing structures and recommend PLP to the residential properties at significant flood risk</p> <p>Refurbishment of existing defences at Freshwater Bay at end of design life to prevent erosion risk and implement new defences at Freshwater Village in the long term to mitigate flood risk and improve the standard of protection.</p>	HTL	<p>The preferred option for SMZ3c does not lead to a conclusion of LSE on European sites. A HTL approach at the mouth of Freshwater Bay is in line with SMP policy and will not lead to landtake from the South Wight Maritime SAC.</p> <p>Any potential new defence measures inland at Freshwater village would occur outside of any European sites. There is potential for creation of new habitat to the south of the Causeway as part of the Strategy which could contribute to RHCP objectives to contribute new areas of coastal grazing marsh. However, this is a high level concept at the moment and further studies would be needed to determine if the habitat would be of a suitable type, in a suitable location, of suitable extent and of sufficient quality to fit relevant criteria.</p>
4	W18-20	1	Do nothing	NAI	<p>The entire coastline along this section is fronted by the South Wight Maritime SAC, and sections of the Solent and Southampton Water SPA/ Ramsar are located along this section. There would be no direct landtake under a policy of NAI and therefore no LSE.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
5a	W21-22	3	<p>Do Minimum & community & property level resilience then adaption</p> <p>Privately funded community and property level flood resistance and resilience. Accept flood risk will increase over time due to sea level rise. Provide coastal change management area plan and do nothing. Do minimum (maintain H&S) at Gurnard Cliff.</p>	HTL in part in Epoch 1, otherwise NAI.	The strategy along this frontage will not lead to any advancement of defences and therefore no LSE on the Solent Maritime SAC through direct landtake.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
5b	W23	3	<p>Maintain:</p> <p>Maintenance of existing structures and refurbishment or replacement at end of their residual life</p>	HTL	<p>The strategy approach is in conformity with the SMP in that it promotes maintenance of the existing defences and it seeks to achieve this through refurbishment or replacement of existing defences rather than increasing defence footprints.</p> <p>Although at a scheme-specific level this could in reality include strengthening of existing structures with potential incremental changes in the footprint of the base of existing defences, the HRA of the SMP notes that <i>“there is the potential for loss of some of the silt, gravel, and boulder littered foreshore along the Gurnard frontage... however, the interest features for the Solent Maritime SAC are the subtidal mudflats and sandflats, and maintaining the defences will not affect the integrity of the three International sites.”</i></p> <p>The length of shoreline to be defended in this SMZ is approximately 3km, and therefore, based any incremental forward movement of defences (taken to be less than 2m) could reasonably be estimated to lead to a loss of less than 0.5ha of subtidal SAC habitat. This would represent less than 0.001% of the 11,325ha SAC, albeit that the designation covers a range of habitat types. Any defences encroaching into the SAC would be subject to HRA, and if necessary, IROPI and any need for compensation would be confirmed at the scheme level.</p> <p>Given the Strategy is in line with the SMP there is considered to be no LSE on the SAC.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6a	W24-25 W31	4	Sustain 1.33% AEP SoP with Temporary Flood Barriers and PLP (to 2055) then Improve by replacing and raising defences in the longer term. Redevelopment to provide new defences through the planning process.	HTL	<p>This section of the Medina Estuary forms part of the Solent Maritime SAC. At present it is not certain as to how and where proposed defence improvements would occur. Beyond 2055, there is potential for improved defences to occupy a footprint seaward of existing defences in order to maintain sufficient standards of protection. However the landward limits of the SAC at this location are at Mean Low Water and since it is assumed no defences would be placed below this mark, no LSE on the SAC through direct landtake would occur. The length of shoreline to be defended in this SMZ is approximately 6.5km, and therefore any incremental forward movement of defences already AT MLW (taken as less than 2m movement) could reasonably be estimated to lead to a loss of 0.5-1ha of subtidal SAC habitat. This would represent less than 0.001% of the 11325ha SAC, albeit that the designation covers a range of habitat types. Any defences encroaching into the SAC would be subject to HRA screening and if necessary, IROPI and any need for compensation would be confirmed at the scheme level.</p> <p>Given the Strategy is in line with the SMP there is considered to be no LSE on the SAC.</p>
6b	W26-28 W30 W32	1	Do nothing	Mainly NAI with isolated HTL	<p>The preferred option of 'do nothing' will not lead to landtake from European sites as no active works are proposed.</p> <p>At W32, during the first epoch, the approach is to do minimum, with minor maintenance of the existing coastal structures. These minor works will keep within the footprint of the existing defences and therefore will not lead to landtake from European sites. Private maintenance of defences in W27 will also be kept within existing defence footprints.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6c	W29	3	<p>Maintain and PLP / resilience (improve through redevelopment)</p> <p>Maintain and refurbish defences to 2055. Manage. Reduce flooding to areas at very significant risk with recommended Property Level Protection. Then new frontline defences to improve the SoP; redevelopment / change of use opportunities will raise land levels / provide defences to contribute to flood risk reduction through the planning process.</p>	HTL	<p>SMZ 6c has a limited connectivity with Solent Maritime SAC and Solent and Southampton Water SPA/ Ramsar at its northern end. However the Strategy does not require advancement of existing defences and therefore no direct landtake will occur on European sites.</p>

Table 3: Assessment of preferred options - Coastal squeeze

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
1	W1	1	Do nothing	NAI	<p>The 'do nothing' approach is in line with the SMP policy for this area which is for No Active Intervention.</p> <p>The only designated site along this SMZ is South Wight Maritime SAC. Natural coastal erosion is considered to be beneficial to the SAC and the process of erosion is not constrained by built development.</p> <p>Therefore the HRA screening conclusion is for no likely significant effects.</p>
2	W2-W7	2	Do minimum: H&S and access and develop coastal change management area plan for clifftop areas (W2-6)	NAI and HTL	<p>The SMP policies along this frontage are a mixture of HTL and NAI. A 'do minimum' approach will lead to advancement of the seaward area due to cliff erosion.</p> <p>The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE from coastal squeeze due to coastal defence works.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3a	W8-9 W15-17	3	<p>Maintain and sustain 1.33% AEP SoP with Temporary Flood Barriers. Improve from 2055.</p> <p>Manage and reduce flooding to areas at significant risk with temporary flood barriers. Prevent erosion to critical infrastructure serving the town. Raise / implement new defences (bunds and floodwalls) to manage longer term increasing flood and erosion risk posed by sea level rise.</p>	<p>HTL in all Epochs east of the Yar estuary, or HTL in Epoch 1 then NAI west of the Yar estuary, on the coast.</p>	<p>The strategy of maintaining existing defences along the majority of this SMZ means that there is potential for likely significant effects on Solent Maritime SAC or Solent and Southampton Water SPA and Ramsar through coastal squeeze as defences will be retained in their current alignment.</p> <p>The HRA of the SMP notes that “<i>the defences along Norton Spit are to be held for the duration of the SMP, which will ensure that the mudflat and saltmarsh on the landward side of the spit are maintained, resulting in a beneficial effect of the HTL policy. Furthermore, allowing the adjacent coastline between Sconce Point and Norton to naturally erode in the medium to long term will ensure an increase of sediment downdrift, resulting in accretion of Norton Spit which would further protect the mudflat and saltmarsh on the landward side of the defence structures.</i>”</p> <p>It is also noted that the SMP calculations predict a loss of 0.4ha of saltmarsh and mudflat from the SAC and 0.25ha of such habitats from the SPA/ Ramsar as a result of coastal squeeze within the frontage that include W9 and W15-17 (Management Unit 6C)⁹. The HRA of the SMP confirms that this is not considered to be a significant amount of habitat loss within the SMP HRA since the level of loss is within the natural fluctuations of the ecosystem and indiscernible from natural losses.</p> <p>Defences already in existence to the east of the mouth of the Yar Estuary will continue to protect coastal grazing marsh from saline intrusion. Therefore based on an insignificant reduction in intertidal habitat, and a protection of terrestrial habitat (which will therefore not be subject to coastal squeeze) there is no likely significant effect on the European sites.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3b	W10 W13-14	5	<p>Do Minimum with Thorley Brook Managed Realignment (from 2025)</p> <p>Managed realignment at Thorley Brook to provide environmental mitigation and create intertidal habitat. Recommend PLP for isolated residential properties at very significant flood risk (and maintain cycle and foot path access).</p>	<p>NAI with the exception of Thorley Brook 4 and Barnfields Stream where the approach is HTL in Epoch 1, MR in Epoch 2 and NAI in Epoch 3.</p>	<p>The approach being undertaken in this SMZ will not result in coastal squeeze as there is opportunity for seaward habitats to migrate landward under a 'do minimum' strategy. The MR approach at Thorley Brook is designed to compensate for the effects of loss of intertidal habitat elsewhere through coastal squeeze.</p> <p>Therefore through the provision of the MR strategy, the ability of habitat to retreat elsewhere along this SMZ as a result of a 'do minimum' approach, and the creation of coastal grazing marsh habitat through the RCHP, it is concluded that there will be no LSE on European sites.</p>

⁹ Isle of Wight SMP2: Appendix I HRA Stage 3: Final AA Report. Royal Haskoning.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3c	W11-12	4	<p>Maintain (and PLP) then Improve (2055) –</p> <p>Maintenance of existing structures and recommend PLP to the residential properties at significant flood risk</p> <p>Refurbishment of existing defences at Freshwater Bay at end of design life to prevent erosion risk and implement new defences at Freshwater Village in the long term to mitigate flood risk and improve the standard of protection.</p>	HTL	<p>The preferred option for SMZ3c does not lead to a conclusion of LSE on European sites. A HTL approach at the mouth of Freshwater Bay is in line with SMP policy and will not lead to coastal squeeze on the South Wight Maritime SAC, since as the HRA of the SMP states:</p> <p><i>“there are no vegetated sea cliffs within the bay of Freshwater and therefore the HTL policy will have no adverse effect on the vegetated cliffs of the South Wight Maritime SAC.”</i></p> <p>The existing defences at the Causeway would be retained and while this may result in loss of intertidal habitat this is included in the SMP calculations predicting a loss of 0.4ha of saltmarsh and mudflat from the SAC and 0.25ha of such habitats from the SPA/ Ramsar within the frontage that includes W11 (Management Unit 6C)¹⁰. This is not considered to be a significant amount of habitat loss within the SMP HRA and therefore is screened out as being a LSE as a result of the Strategy.</p> <p>As a result of a managed realignment scheme at the Thorley Brook site, the SMP has identified that mudflat and saltmarsh habitat would be created at the site. There is potential for up to 34.9 ha of saltmarsh/mudflat habitat creation in this area.</p>

¹⁰ Isle of Wight SMP2: Appendix I HRA Stage 3: Final AA Report. Royal Haskoning.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
4	W18-20	1	Do nothing	NAI	The entire coastline along this section is fronted by the South Wight Maritime SAC, and includes sections of the Solent and Southampton Water SPA/ Ramsar. The HRA of the SMP was able to conclude that despite sea level rise, there would be opportunities for the designated features of the SAC and SPA/ Ramsar to migrate landward. Therefore there would be no LSE as the Strategy is in conformity with the SMP.
5a	W21-22	3	Do Minimum & community & property level resilience then adaption. Privately funded community and property level flood resistance and resilience. Accept flood risk will increase over time due to sea level rise. Provide coastal change management area plan and do nothing. Do minimum (maintain H&S) at Gurnard Cliff.	HTL in part in Epoch 1, otherwise NAI.	The strategy along this frontage would have potential to lead to coastal squeeze, since it presents an approach of minimal intervention, and the retreat of habitats landward through natural processes may be restricted by built development. However, the HRA of the SMP notes that “ <i>there is the potential for loss of some of the silt, gravel, and boulder littered foreshore along the Gurnard frontage... however, the interest features for the Solent Maritime SAC are the subtidal mudflats and sandflats, and maintaining the defences will not affect the integrity of the three International sites.</i> ” The implication is that other SAC designated habitats (e.g. Spartina swards and Atlantic salt meadows) are absent from this SMZ. Any landward advancement of the sea at this location will restrict intertidal and terrestrial habitats only and not subtidal features, leading to a conclusion of no LSE.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
5b	W23	3	<p>Maintain:</p> <p>Maintenance of existing structures and refurbishment or replacement at end of their residual life.</p>	HTL	<p>The conclusion for this SMZ is as above for SMZ5a.</p> <p>The HRA of the SMP notes that “<i>there is the potential for loss of some of the silt, gravel, and boulder littered foreshore along the Gurnard frontage... however, the interest features for the Solent Maritime SAC are the subtidal mudflats and sandflats, and maintaining the defences will not affect the integrity of the three International sites.</i>”</p> <p>The implication is that other SAC designated habitats (e.g. Spartina swards and Atlantic salt meadows) are absent from this SMZ. Any landward advancement of the sea at this location will restrict intertidal and terrestrial habitats only and not subtidal features, leading to a conclusion of no LSE.</p> <p>Although the potential for coastal squeeze exists, in reality the SAC features that could be affected are absent from this section of coastline.</p>
6a	W24-25 W31	4	<p>Sustain 1.33% AEP SoP with Temporary Flood Barriers and PLP (to 2055) then Improve by replacing and raising defences in the longer term. Redevelopment to provide new defences through the planning process.</p>	HTL	<p>Along this frontage the Medina River is constrained by built defences, and sea level rise will lead to potential loss of intertidal habitat at this location. Beyond 2055, there is potential for improved defences to occupy a footprint seaward of existing defences in order to maintain sufficient standards of protection. However, as the Solent Maritime SAC extends only to MLW here, the extent of subtidal features would not be reduced as a result of sea level rise, since sea level rise will only lead to a loss of habitat above MLW, outside of the SAC, and there is therefore considered to be no LSE on the SAC.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6b	W26-28 W30 W32	1	Do nothing	Mainly NAI (with isolated HTL)	The preferred option of 'do nothing' has potential to lead to coastal squeeze through inability of designated habitats to retreat as sea levels rise, although the majority of this frontage is undefended, estuarine and able to evolve naturally. The HRA of the SMP noted that although up to 1.7ha of mudflat may be lost from the Solent Maritime SAC along the Medina Valley, overall the SAC will experience a much greater increase in mudflat habitat (142ha through the implementation of the North Solent SMP) and therefore no LSE would occur. Bird species for which Solent and Southampton Water SPA is designated would not be adversely affected since habitat changes would be extremely incremental compared to short term fluctuations in habitat availability (tidal effects), and additionally alternative habitat is being created elsewhere outside of the SPA.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6c	W29	3	<p>Maintain and PLP / resilience (improve through redevelopment).</p> <p>Maintain and refurbish defences to 2055. Reduce flooding to areas at very significant risk with recommended Property Level Protection. Then new frontline defences to improve the SoP; Redevelopment / change of use opportunities will raise land levels / provide defences to contribute to flood risk reduction through the planning process.</p>	HTL	<p>Although there is potential for coastal squeeze to occur due to inability of habitats to retreat landward at this location, the area of European sites affected would be extremely small as SMZ6c has only limited connectivity with Solent Maritime SAC and Solent and Southampton Water SPA/ Ramsar at its northern end. The underlying justifications for conclusion of no LSE applying to SMZ 6b apply to SMZ 6c also.</p>

Table 4: Assessment of preferred options - Loss of high tide roosts

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
1	W1	1	Do nothing	NAI	The shoreline along SMZ1 is not designated at European level for any high tide roosts. Therefore the HRA screening conclusion is for no likely significant effects.
2	W2-W7	2	Do minimum: H&S and access and develop coastal change management area plan for clifftop areas (W2-6)	NAI and HTL	<p>The SMP policies along this frontage are a mixture of HTL and NAI.</p> <p>The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE from coastal squeeze due to coastal defence works.</p> <p>The HRA of the SMP confirms that there are no noted high tide roosts for SPA/ Ramsar designated species (outside of existing SPA/ Ramsar site boundaries) within this SMZ.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3a	W8-9 W15-17	3	<p>Maintain and sustain 1.33% AEP SoP with Temporary Flood Barriers. Improve from 2055.</p> <p>Manage and reduce flooding to areas at significant risk with temporary flood barriers. Prevent erosion to critical infrastructure serving the town. Raise / implement new defences (bunds and floodwalls) to manage longer term increasing flood and erosion risk posed by sea level rise.</p>	<p>HTL in all Epochs east of the Yar estuary, or HTL in Epoch 1 then NAI west of the Yar estuary, on the coast.</p>	<p>Drawing on the most recent available evidence from the Solent Brent Goose and Wader Roost Strategies, the HRA of the SMP was able to confirm that no high tide roosts are present along this SMZ and therefore no LSE will occur.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3b	W10 W13-14	5	<p>Do Minimum with Thorley Brook Managed Realignment (from 2025)</p> <p>Managed realignment at Thorley Brook to provide environmental mitigation and create intertidal habitat. Recommend PLP for isolated residential properties at very significant flood risk (and maintain cycle and foot path access).</p>	<p>NAI with the exception of Thorley Brook and Barnfields Stream where the approach is HTL in Epoch 1, MR in Epoch 2 and NAI in Epoch 3.</p>	<p>The HRA of the SMP concluded that MR at Thorley Brook (to create mudflat / saltmarsh habitat) would lead to an adverse effect on Solent to Southampton Water SPA and Ramsar through saline intrusion and loss of coastal grazing marsh habitat. 31ha of coastal grazing marsh would be lost, including areas used by roosting birds for which the SPA/ Ramsar are designated. It was determined by IROPI that compensation for this loss of habitat would be achieved through delivery via the Southern Region RHCP (Regional Habitat Compensation Plan). Without such compensatory habitat provision the West Wight Coastal Flood and Erosion Risk Management Strategy would lead to a likely significant adverse effect on the SPA/ Ramsar in line with the conclusion of the HRA of the SMP.</p> <p>A LSE may therefore be considered to arise from Epoch 2 but IROPI/No Alternatives for the SMP has already been undertaken and it has been agreed that compensatory habitat provision will need to be delivered by RHCP before the Strategy MR policy can be implemented. It will be the responsibility of the MR scheme developers to confirm that this has occurred.</p> <p>Compensatory habitat will comprise grazing marsh, including provision of suitable habitat that would provide compensatory high tide roosts</p> <p>Although a conclusion of LSE on Solent and Southampton Water SPA/ Ramsar has been reached, further Appropriate Assessment is not required since the Strategy is in line with agreed IROPI of the SMP and specific measures should be addressed within project-level HRAs.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3c	W11-12	4	<p>Maintain (and PLP) then Improve (2055) –</p> <p>Maintenance of existing structures and recommend PLP to the residential properties at significant flood risk</p> <p>Refurbishment of existing defences at Freshwater Bay at end of design life to prevent erosion risk and implement new defences at Freshwater Village in the long term to mitigate flood risk and improve the standard of protection.</p>	HTL	<p>The preferred option for SMZ3a does not lead to a conclusion of LSE on European sites as no high tide roosts for which the SPA/ Ramsar are designated exist along this SMZ. A HTL approach at the mouth of Freshwater Bay is in line with SMP policy and will not lead to landtake from the South Wight Maritime SAC.</p> <p>Proposed new defences or measures at the Causeway/Freshwater village would occur outside of any European sites. Creation of new habitat to the south of the Causeway could potentially contribute to RHCP objectives to contribute new areas of coastal grazing marsh, if the habitat would be in a suitable location, of suitable extent and of sufficient quality to fit relevant criteria.</p>
4	W18-20	1	Do nothing	NAI	<p>The coastline includes sections of the Solent and Southampton Water SPA/ Ramsar. The HRA of the SMP was able to conclude that despite sea level rise, there would be opportunities for the designated features of the SPA/ Ramsar, including known high-tide roosts, to migrate landward. There would be no LSE.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
5a	W21-22	3	<p>Do Minimum & community & property level resilience then adaption</p> <p>Privately funded community and property level flood resistance and resilience. Accept flood risk will increase over time due to sea level rise. Provide coastal change management area plan and do nothing. Do minimum (maintain H&S) at Gurnard Cliff.</p>	HTL in part in Epoch 1, otherwise NAI.	There are no European sites designated for high tide roosts along this SMZ and according to the HRA of the SMP there are no significant roosts outside the boundaries of the existing SPA/ Ramsar sites along this SMZ and therefore no LSE will occur.
5b	W23	3	<p>Maintain:</p> <p>Maintenance of existing structures and refurbishment or replacement at end of their residual life</p>	HTL	There are no European sites designated for high tide roosts along this SMZ and according to the HRA of the SMP there are no significant roosts outside the boundaries of the existing SPA/ Ramsar sites along this SMZ and therefore no LSE will occur.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6a	W24-25 W31	4	Sustain 1.33% AEP SoP with Temporary Flood Barriers and PLP (to 2055) then Improve by replacing and raising defences in the longer term. Redevelopment to provide new defences through the planning process.	HTL	There are no European sites designated for high tide roosts along this SMZ and according to the HRA of the SMP there are no significant roosts outside the boundaries of the existing SPA/ Ramsar sites along this SMZ and therefore no LSE will occur.
6b	W26-28 W30 W32	1	Do nothing	Mainly NAI (with isolated HTL)	This SMZ includes sections of the Solent and Southampton Water SPA/ Ramsar. The HRA of the SMP was able to conclude that despite sea level rise, there would be opportunities for the species for which the SPA/ Ramsar are designated, including at known high-tide roosts, to migrate landward. Therefore for a 'do nothing' option, there is no conflict with the conclusions of the HRA of the SMP and there would be no LSE.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6c	W29	3	<p>Maintain and PLP / resilience (improve through redevelopment)</p> <p>Maintain and refurbish defences to 2055. Reduce flooding to areas at very significant risk with recommended Property Level Protection. Then new frontline defences to improve the SoP; Redevelopment / change of use opportunities will raise land levels / provide defences to contribute to flood risk reduction through the planning process.</p>	HTL	<p>SMZ 6c has a small connectivity with Solent and Southampton Water SPA/ Ramsar at its northern end, and there are no known high tide roosts along this section. Therefore there will be no LSE arising from the strategy preferred option.</p>

Table 5: Assessment of preferred options - Disturbance

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
1	W1	1	Do nothing	NAI	A 'do nothing' strategy will not lead to LSE through disturbance and the coastline is not designated for breeding or roosting birds.
2	W2-W7	2	Do minimum: H&S and access and develop coastal change management area plan for clifftop areas (W2-6)	NAI and HTL	The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE due to disturbance from coastal defence works.
3a	W8-9 W15-17	3	Maintain and sustain 1.33% AEP SoP with Temporary Flood Barriers. Improve from 2055. Manage and reduce flooding to areas at significant risk with temporary flood barriers. Prevent erosion to critical infrastructure serving the town. Raise / implement new defences (bunds and floodwalls) to manage longer term increasing flood and erosion risk posed by sea level rise.	HTL in all Epochs east of the Yar estuary, or HTL in Epoch 1 then NAI west of the Yar estuary, on the coast.	According to the HRA of the SMP, there are no known high tide roosts for species for which Solent and Southampton Water SPA/ Ramsar have been designated within SMZ 3a. The SPA is designated for breeding bird species, but breeding colonies of these species are not noted along this stretch of coastline. The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE from disturbance due to coastal defence works. Therefore a conclusion of no LSE can be reached.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3b	W10 W13-14	5	<p>Do Minimum with Thorley Brook Managed Realignment (from 2025)</p> <p>Managed realignment at Thorley Brook to provide environmental mitigation and create intertidal habitat. Recommend PLP for isolated residential properties at very significant flood risk (and maintain cycle and foot path access).</p>	<p>NAI with the exception of Thorley Brook and Barnfields Stream where the approach is HTL in Epoch 1, MR in Epoch 2 and NAI in Epoch 3.</p>	<p>This section of the coast includes high tide roost sites and feeding sites for species for which the Solent and Southampton Water SPA/ Ramsar site is designated.</p> <p>Therefore there is potential for disturbance to birds should the preferred option be implemented between October and March when designated species are most likely to be present. However, at this stage the details of methodologies are not determined and therefore the effects of these on bird disturbance would be most appropriately addressed at a scheme specific level.</p> <p>The SPA is designated for breeding bird species, but breeding colonies of these species are not noted for this stretch of coastline.</p> <p>The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE from disturbance due to coastal defence works.</p> <p>Therefore a conclusion of no LSE can be reached.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3c	W11-12	4	<p>Maintain (and PLP) then Improve (2055) –</p> <p>Maintenance of existing structures and recommend PLP to the residential properties at significant flood risk</p> <p>Refurbishment of existing defences at Freshwater Bay at end of design life to prevent erosion risk and implement new defences at Freshwater Village in the long term to mitigate flood risk and improve the standard of protection.</p>	HTL	<p>The preferred option for SMZ3c does not lead to a conclusion of LSE on European sites. A HTL approach at the mouth of Freshwater Bay is in line with SMP policy.</p> <p>Proposed new defences or measures at the Causeway/Freshwater village would occur outside of any European sites.</p> <p>The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE from disturbance due to coastal defence works.</p> <p>Therefore there is no LSE from the preferred option through disturbance of bird species for which European sites are designated.</p>
4	W18-20	1	Do nothing	NAI	<p>This section of the coast includes high tide roost sites and feeding sites for species for which the Solent and Southampton Water SPA/ Ramsar site is designated.</p> <p>However, a preferred option of 'do nothing' in line with SMP policy of NAI means that there is no potential for LSE through disturbance.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
5a	W21-22	3	<p>Do Minimum & community & property level resilience then adaption</p> <p>Privately funded community and property level flood resistance and resilience. Accept flood risk will increase over time due to sea level rise. Provide coastal change management area plan and do nothing. Do minimum (maintain H&S) at Gurnard Cliff.</p>	HTL in part in Epoch 1, otherwise NAI.	This frontage is not currently designated as a SPA or Ramsar. The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE from disturbance due to coastal defence works.
5b	W23	3	<p>Maintain:</p> <p>Maintenance of existing structures and refurbishment or replacement at end of their residual life</p>	HTL	This frontage is not currently designated as a SPA or Ramsar. The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE from disturbance due to coastal defence works.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6a	W24-25 W31	4	Sustain 1.33% AEP SoP with Temporary Flood Barriers and PLP (to 2055) then Improve by replacing and raising defences in the longer term. Redevelopment to provide new defences through the planning process.	HTL	This frontage is not currently designated as a SPA or Ramsar. The proposed Solent and Dorset Coast SPA may include this section of coastline but will be designated for offshore feeding grounds for tern species. There would be no LSE from disturbance due to coastal defence works.
6b	W26-28 W30 W32	1	Do nothing	Mainly NAI (with isolated HTL)	This section of the coast includes high tide roost sites and feeding sites for species for which the Solent and Southampton Water SPA/ Ramsar site is designated, though not at W32 where HTL is considered initially. However, a preferred option of 'do nothing' (with the exception of privately funded defences along a short stretch of coastline in W27) means that there is limited potential for LSE through disturbance.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6c	W29	3	<p>Maintain and PLP / resilience (improve through redevelopment)</p> <p>Maintain and refurbish defences to 2055. Manage and reduce flooding to areas at very significant risk with recommended Property Level Protection.</p> <p>Then new frontline defences to improve the SoP; Redevelopment / change of use opportunities will raise land levels / provide defences to contribute to flood risk reduction through the planning process.</p>	HTL	<p>SMZ 6c has a small connectivity with Solent and Southampton Water SPA/ Ramsar at its northern end. However this developed frontage is not considered to support significant concentrations of bird species for which the SPA/ Ramsar sites are designated and therefore there is no LSE through disturbance.</p>

Table 6: Assessment of preferred options - Changes in sediment transport

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
1	W1	1	Do nothing	NAI	No significant changes in sedimentation patterns are expected along this coastline affecting European sites as a result of the preferred option.
2	W2-W7	2	Do minimum: H&S and access and develop coastal change management area plan for clifftop areas (W2-6)	NAI and HTL	No significant changes in sedimentation patterns are expected along this coastline affecting European sites as a result of the preferred option. Sediment supply is expected to increase in the long term under the preferred option, as additional lengths of cliff start to erode. As there are no existing European sites along this coastline no likely significant effects would arise due to mobilisation of sediment locally. Although the stretch of coastline may form part of a future Solent and Dorset Coast SPA, it is considered unlikely that the scale of sediment mobilisation would have a significant effect on offshore feeding opportunities for tern species. It is also considered unlikely that the scale of sediment mobilisation would have likely significant effects on European site designations away from SMZ2 through sediment deposition further along the shoreline.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3a	W8-9 W15-17	3	<p>Maintain and sustain 1.33% AEP SoP with Temporary Flood Barriers. Improve from 2055.</p> <p>Manage and reduce flooding to areas at significant risk with temporary flood barriers. Prevent erosion to critical infrastructure serving the town. Raise / implement new defences (bunds and floodwalls) to manage longer term increasing flood and erosion risk posed by sea level rise.</p>	<p>HTL in all Epochs east of the Yar estuary, or HTL in Epoch 1 then NAI west of the Yar estuary, on the coast.</p>	<p>The strategy of maintaining existing defences along the majority of this SMZ means that there will not be likely significant adverse effects on Solent Maritime SAC or Solent and Southampton Water SPA and Ramsar through changes in sedimentation patterns.</p> <p>The HRA of the SMP notes that <i>“the defences along Norton Spit are to be held for the duration of the SMP, which will ensure that the mudflat and saltmarsh on the landward side of the spit are maintained, resulting in a beneficial effect of the HTL policy. Furthermore, allowing the adjacent coastline between Sconce Point and Norton to naturally erode in the medium to long term will ensure an increase of sediment downdrift, resulting in accretion of Norton Spit which would further protect the mudflat and saltmarsh on the landward side of the defence structures.”</i></p> <p>Therefore there is considered to be a likely positive effect on European sites.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3b	W10 W13-14	5	<p>Do Minimum with Thorley Brook Managed Realignment (from 2025)</p> <p>Managed realignment at Thorley Brook to provide environmental mitigation and create intertidal habitat. Recommend PLP for isolated residential properties at very significant flood risk (and maintain cycle and foot path access).</p>	<p>NAI with the exception of Thorley Brook and Barnfields Stream where the approach is HTL in Epoch 1, MR in Epoch 2 and NAI in Epoch 3.</p>	<p>No significant changes in sedimentation patterns are expected along this coastline affecting European sites as a result of the preferred option.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3c	W11-12	4	<p>Maintain (and PLP) then Improve (2055) –</p> <p>Maintenance of existing structures and recommend PLP to the residential properties at significant flood risk</p> <p>Refurbishment of existing defences at Freshwater Bay at end of design life to prevent erosion risk and implement new defences at Freshwater Village in the long term to mitigate flood risk and improve the standard of protection.</p>	HTL	No significant changes in sedimentation patterns are expected along this coastline affecting European sites as a result of the preferred option.
4	W18-20	1	Do nothing	NAI	No significant changes in sedimentation patterns are expected along this coastline affecting European sites as a result of the preferred option.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
5a	W21-22	3	<p>Do Minimum & community & property level resilience then adaption</p> <p>Privately funded community and property level flood resistance and resilience. Accept flood risk will increase over time due to sea level rise. Provide coastal change management area plan and do nothing. Do minimum (maintain H&S) at Gurnard Cliff.</p>	HTL in part in Epoch 1, otherwise NAI.	No significant changes in sedimentation patterns are expected along this coastline affecting European sites as a result of the preferred option.
5b	W23	3	<p>Maintain:</p> <p>Maintenance of existing structures and refurbishment or replacement at end of their residual life</p>	HTL	No significant changes in sedimentation patterns are expected along this coastline affecting European sites as a result of the preferred option.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6a	W24-25 W31	4	Sustain 1.33% AEP SoP with Temporary Flood Barriers and PLP (to 2055) then Improve by replacing and raising defences in the longer term. Redevelopment to provide new defences through the planning process.	HTL	No significant changes in sedimentation patterns are expected along this coastline affecting European sites as a result of the preferred option.
6b	W26-28 W30 W32	1	Do nothing	Mainly NAI (with isolated HTL)	No significant changes in sedimentation patterns are expected along this estuary shoreline affecting European sites as a result of the preferred option. In the long term, some additional sediment supply could commence near Old Castle Point if the coastal land starts to erode. This could result in changes in SAC designated habitats, but in the context of an SAC covering 11325ha, the area of change (which may itself be immaterial) would be very limited.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6c	W29	3	<p>Maintain and PLP / resilience (improve through redevelopment)</p> <p>Maintain and refurbish defences to 2055. Reduce flooding to areas at very significant risk with recommended Property Level Protection. Then new frontline defences to improve the SoP; Redevelopment / change of use opportunities will raise land levels / provide defences to contribute to flood risk reduction through the planning process.</p>	HTL	<p>No significant changes in sedimentation patterns are expected along this shoreline affecting European sites as a result of the preferred option.</p>

Table 7: Assessment of preferred options - Contamination

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
1	W1	1	Do nothing	NAI	A high level desk study exercise has identified that no high risks as a result of sources of contaminated land are anticipated along this SMZ. Therefore a conclusion of no LSE is anticipated.
2	W2-W7	2	Do minimum: H&S and access and develop coastal change management area plan for clifftop areas (W2-6)	NAI and HTL	A high level desk study exercise has identified that no high risks as a result of sources of contaminated land are anticipated along this SMZ. Therefore a conclusion of no LSE is anticipated.
3a	W8-9 W15-17	3	<p>Maintain and sustain 1.33% AEP SoP with Temporary Flood Barriers. Improve from 2055.</p> <p>Manage and reduce flooding to areas at significant risk with temporary flood barriers. Prevent erosion to critical infrastructure serving the town. Raise / implement new defences (bunds and floodwalls) to manage longer term increasing flood and erosion risk posed by sea level rise.</p>	HTL in all Epochs east of the Yar estuary, or HTL in Epoch 1 then NAI west of the Yar estuary, on the coast.	<p>A high level desk study exercise has identified that potential high risks as a result of sources of contaminated land are anticipated along this SMZ if erosion were to occur.</p> <p>The strategy of maintaining existing defences along the majority of this SMZ means that there will not be likely significant effects on Solent Maritime SAC or Solent and Southampton Water SPA and Ramsar through contamination as defences will continue to protect areas of potential risk from erosion.</p> <p>Any proposals to introduce new flood defences should include more detailed assessment of the contamination risk, supported by ground investigations, as necessary.</p> <p>Therefore, on the basis of maintenance of existing defences (HTL), with ground investigations as needed results in there being no likely significant effect on the European sites.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3b	W10 W13-14	5	<p>Do Minimum with Thorley Brook Managed Realignment (from 2025)</p> <p>Managed realignment at Thorley Brook to provide environmental mitigation and create intertidal habitat. Recommend PLP for isolated residential properties at very significant flood risk (and maintain cycle and foot path access).</p>	<p>NAI with the exception of Thorley Brook and Barnfields Stream where the approach is HTL in Epoch 1, MR in Epoch 2 and NAI in Epoch 3.</p>	<p>A high level desk study exercise has identified that high risks as a result of sources of contaminated land are anticipated along this SMZ.</p> <p>A landfill site has been identified as being present along this frontage. It is known that part of the site is capped and the rest is currently flooded in a 1:1yr present day event – there have been no negative consequences reported, which suggest no remedial works are required at this time. The preferred option for this frontage (W10) is NAI.</p> <p>Therefore at this stage it has been concluded that there would be no LSE on any European sites, however the potential for increased frequency of flooding in W10 and the potential for release of contaminants may merit further investigation.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
3c	W11-12	4	<p>Maintain (and PLP) then Improve (2055) –</p> <p>Maintenance of existing structures and recommend PLP to the residential properties at significant flood risk</p> <p>Refurbishment of existing defences at Freshwater Bay at end of design life to prevent erosion risk and implement new defences at Freshwater Village in the long term to mitigate flood risk and improve the standard of protection.</p>	HTL	A high level desk study exercise has identified that no high risks as a result of sources of contaminated land are anticipated along this SMZ. Therefore a conclusion of no LSE is anticipated.
4	W18-20	1	Do nothing	NAI	A high level desk study exercise has identified that no high risks as a result of sources of contaminated land are anticipated along this SMZ. Therefore a conclusion of no LSE is anticipated.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
5a	W21-22	3	<p>Do Minimum & community & property level resilience then adaption</p> <p>Privately funded community and property level flood resistance and resilience. Accept flood risk will increase over time due to sea level rise. Provide coastal change management area plan and do nothing. Do minimum (maintain H&S) at Gurnard Cliff.</p>	HTL in part in Epoch 1, otherwise NAI.	A high level desk study exercise has identified that no high risks as a result of sources of contaminated land are anticipated along this SMZ. Therefore a conclusion of no LSE is anticipated.
5b	W23	3	<p>Maintain:</p> <p>Maintenance of existing structures and refurbishment or replacement at end of their residual life</p>	HTL	A high level desk study exercise has identified that no high risks as a result of sources of contaminated land are anticipated along this SMZ. Therefore a conclusion of no LSE is anticipated.

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6a	W24-25 W31	4	Sustain 1.33% AEP SoP with Temporary Flood Barriers and PLP (to 2055) then Improve by replacing and raising defences in the longer term. Redevelopment to provide new defences through the planning process.	HTL	<p>A high level desk study exercise has identified that high risks as a result of sources of contaminated land are anticipated along this SMZ.</p> <p>The strategy of maintaining existing defences along the majority of this SMZ means that there will not be likely significant effects on Solent Maritime SAC through contamination due to erosion as defences will continue to protect areas of potential risk from erosion.</p> <p>Any future proposals to introduce new structures, replace or remove structures should undertake a more detailed assessment of the contamination risk, supported by ground investigations, as necessary.</p> <p>Therefore on the basis of maintenance of existing defences (HTL), with ground investigations as needed results in there being no likely significant effect on the European sites.</p>
6b	W26-28 W30 W32	1	Do nothing	Mainly NAI (with isolated HTL)	<p>A high level desk study exercise has identified that high risks as a result of sources of contaminated land are anticipated along this SMZ.</p> <p>The desk study has concluded that at this time there is nothing that suggests contamination risks, which may arise through tidal inundation in areas of NAI (W30) are large enough to require remediation or new flood defences.</p> <p>Therefore a conclusion of no LSE may be concluded.</p>

SMZ code	Option Development Units in SMZ*	Option number	Preferred Option	SMP Policy	HRA screening outcome
6c	W29	3	<p>Maintain and PLP / resilience (improve through redevelopment).</p> <p>Maintain and refurbish defences to 2055. Reduce flooding to areas at very significant risk with recommended Property Level Protection. Then new frontline defences to improve the SoP; Redevelopment / change of use opportunities will raise land levels / provide defences to contribute to flood risk reduction through the planning process.</p>	HTL	<p>A high level desk study exercise has identified that no high risks as a result of sources of contaminated land are anticipated along this SMZ. Therefore a conclusion of no LSE is anticipated.</p>

6. In Combination Assessment

6.1 Introduction

It is a requirement to consider the West Wight Coastal Flood and Erosion Risk Management Strategy in combination with other projects and plans. That is the purpose of this Chapter.

6.2 Short term (2015 – 2025)

No likely significant effects requiring Appropriate Assessment have been identified from the West Wight Coastal Flood and Erosion Risk Management Strategy alone. The HRA has concluded a need for development of scheme-specific methodologies that would be required to avoid disturbance of bird species for which the Solent and Southampton Water SPA and Ramsar are designated. These should be subject to project level HRA screening.

Effects in combination with the North Solent SMP have been discussed in section 2.4 of this report. It was identified that loss of 31ha of coastal grazing marsh as a result of the Isle of Wight SMP or in combination with a loss of 39ha of similar habitat as a result of the North Solent SMP would require compensation that will occur through the Environment Agency's Southern Regional Habitat Creation Programme (RHCP). It has also been identified that SMP calculations predict a loss of 0.4ha of saltmarsh and mudflat from the SAC as a result of existing SMP approaches. Overall the SAC will experience a much greater increase in mudflat habitat - 142ha through the implementation of the North Solent SMP and as a result of a managed realignment scheme at the Thorley Brook site there is potential for up to 34.9 ha of saltmarsh/mudflat habitat creation in West Wight.

The main potential for an in combination effect with other plans and projects relates to the additional population associated with new housing to be delivered on the Isle of Wight and throughout the Solent area over the Strategy period. However, due to the nature of the analysis in the Solent Disturbance and Mitigation Project and its Solent-wide geographic scope, recreational effects of housing across the Solent area have effectively already been considered cumulatively in undertaking the original analysis that led to the identification of the 5.6km zone around the coast and the need for mitigation to be delivered for housing within that zone. This has been enshrined within the Island Plan Solent Special Protection Areas Supplementary Planning Document¹¹. Other projects will be securing bespoke solutions or making the required financial contribution to the delivery of the strategic mitigation being delivered by the local authorities.

If Strategy works to achieve HTL or MR took place at an inappropriate time (i.e. during the core wintering period when bird populations are greatest) then there could be an 'in combination' disturbance effect alongside the substantial increase in recreational activity within the Solent European sites that is expected over the Strategy period due to housing proposals for surrounding districts. However, no additional mitigation needs to be delivered by the Strategy since the timing of works to avoid the sensitive periods will effectively address the Strategy's contribution to the 'in combination' effect.

¹¹ <https://www.iwight.com/azservices/documents/2779-SSPA-SPD.pdf>

6.3 Medium and long term (2025 – 2115)

No 'in combination' assessment is possible for this time period since no projects and plans that will come on line during those Epochs are sufficiently developed at this stage.

7. Conclusions

It is concluded that the West Wight Coastal Flood and Erosion Risk Management Strategy will not result in a likely significant effect on European sites, either alone or in combination with other projects and plans. In reaching that conclusion, the HRA has considered the following;

- For SMZ 3b: The HRA of the SMP concluded that MR at Thorley Brook would lead to an adverse effect on Solent to Southampton Water SPA and Ramsar through saline intrusion and loss of coastal grazing marsh habitat. 31ha of coastal grazing marsh would be lost, including areas used by roosting birds for which the SPA/ Ramsar are designated. It was determined by IROPI that compensation for this loss of habitat would be achieved through delivery via the Southern Region RHCP (Regional Habitat Compensation Plan). Without such compensatory habitat provision the West Wight Coastal Flood and Erosion Risk Management Strategy would lead to a likely significant adverse effect on the SPA/ Ramsar in line with the conclusion of the HRA of the SMP.

A LSE may therefore be considered to arise from Epoch 2 but IROPI/No Alternatives for the SMP has already been undertaken and it has been agreed that compensatory habitat provision will need to be delivered by RHCP before the Strategy MR policy can be implemented. It will be the responsibility of the MR scheme developers to confirm that this has occurred.

Compensatory habitat will comprise grazing marsh, including provision of suitable habitat that would provide compensatory high tide roosts.

Although a conclusion of LSE on Solent and Southampton Water SPA/ Ramsar has been reached, further Appropriate Assessment is not required since the Strategy is in line with agreed IROPI of the SMP and specific measures should be addressed within project-level HRAs.

- For SMZ3a, SMZ5b and SMZ6a: Maintenance and improvement of existing defences could potentially lead to a need to reinforce the toe of any existing alignments, which could lead to small amounts of landtake from designated sites. However, consideration of the low value (SMZ5b) and areas of habitat concerned, coupled with levels of creation of habitat elsewhere within the designated sites as a result of coastal Strategies leads to the conclusion that no LSE would occur through landtake as a result of the West Wight Coastal Flood and Erosion Risk Management Strategy. However it is concluded that at the level of specific schemes, project-level HRA screening should be undertaken to confirm no LSE would arise once more details are available.
- For SMZ3b: If works to achieve HTL or MR took place at an inappropriate time (i.e. during the core wintering period when SPA/ Ramsar designated bird populations are greatest) then there could be LSE through disturbance. However at this stage the details of methodologies are not determined and therefore the effects on disturbance would be most appropriately addressed at a scheme specific level.
- No LSE has been identified through changes to sedimentation patterns (subject to further detailed modelling), or through contaminant release (Subject to ground investigations at project-specific level).

Appendix 1 – Option Development Units

Unit	Area
W1	Freshwater Bay
W2	Tennyson Down, Alum Bay and Headon Warren
W3	Southern Totland Bay
W4	Northern Totland Bay
W5	Southern Colwell Bay
W6	Central Colwell Bay
W7	Fort Albert
W8	Fort Victoria Country Park
W9	Fort Victoria and Norton
W10	Norton Spit
W11	Western Yar Estuary – Western Shore
W12	The Causeway
W13	Western Yar Estuary – Eastern Shore
W14	Thorley Brook and Barnfield Stream
W15	Thorley Brook to Yar Bridge
W16	Yar Bridge to Yarmouth Common
W17	Yarmouth Common to Port la Salle
W18	Bouldnor Copse and Hamstead
W19	Newtown Estuary
W20	Thorness Bay and southern Gurnard Bay
W21	Gurnard Luck
W22	Gurnard Cliff
W23	Gurnard to Cowes Parade
W24	Cowes Town Centre to Fountain Yard
W25	Fountain Yard to Medina Wharf
W26	Kingston Road Power Station to Shrape Breakwater
W27	Shrape Breakwater to Old Castle Point
W28	Central Medina - north west
W29	West Medina Mills
W30	Central Medina – south west
W31	Newport Harbour
W32	Central Medina - east