Isle of Wight Shoreline Management Plan 2

Appendix J - Water Framework Directive Assessment

Isle of Wight Council

December 2010

Final Report

(unchanged from July 2010 for issue with Final SMP in December 2010)

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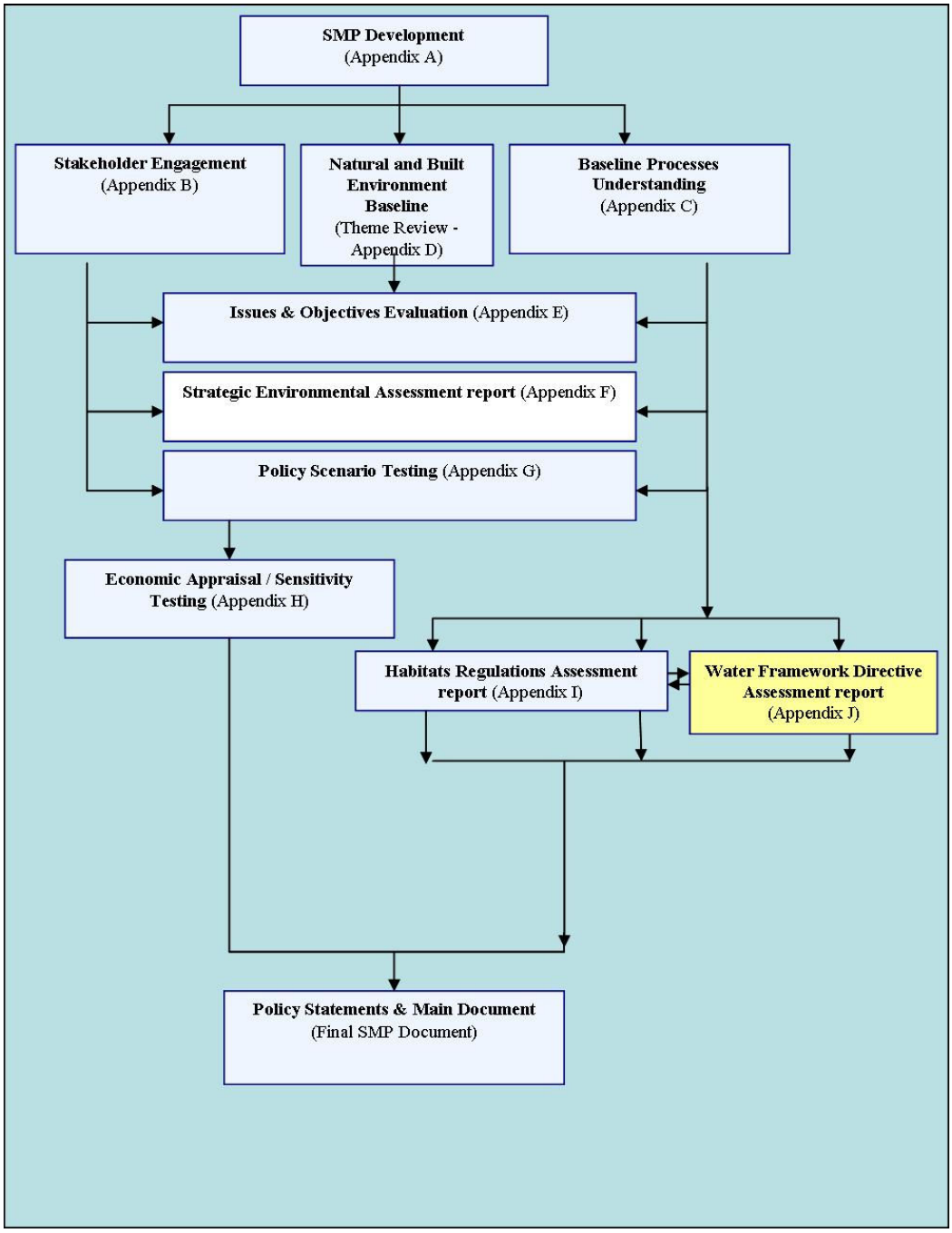
FOREWORD

Royal Haskoning was appointed to undertake the Water Framework Directive (WFD) Assessment for the first review of the Shoreline Management Plan (SMP2). This appendix and the accompanying Annexes provide all the information required for the WFD Assessment of the Isle of Wight SMP2, and sits alongside the other supporting appendices as shown below:



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CONTENTS

List of Figures

List of Tables

List of Assessment Tables

J1 INTRODUCTION

J1.1 Purpose of the report

J1.1.1 The purpose of this report is to comply with The Water Framework Directive (WFD; referred to in this report as the Directive), which came into force in 2000 and is one of the most substantial piece of EC water legislation to date. The Directive needs to be taken into account in the planning of all new activities in the water environment. Therefore, the Environment Agency (the competent authority in England and Wales responsible for delivering the Directive) has recommended that decisions setting policy, including large-scale plans such as Shoreline Management Plans (SMPs), take account of the requirements of the Directive.

J1.1.2 The purpose of the WFD is to establish a framework for protecting inland surface waters, transitional waters, coastal waters and groundwaters. The framework for delivering this Directive is through the River Basin Management Plans (RBMPs). The Environment Agency has divided England and Wales into eleven River Basin Districts (RBDs). The Isle of Wight SMP area falls entirely within the South East River Basin District which was published in December 2009. Each RBD has been characterised into smaller management units known as 'Water Bodies'. This assessment has been undertaken according to Water Framework Directive: Guidance for Assessment of SMPs under WFD, which was developed for the Environment Agency (Royal Haskoning, 2009), and with reference to the WFD assessments undertaken for the River Tyne to Flamborough Head SMP2 review and the North Solent SMP2 review. The Environment Agency guidance describes the methodology for assessing the potential hydromorphological change and consequent ecological impact of SMP policies and ensuring that SMP policy setting takes account of the Directive.

J1.2 Background

J1.2.1 The EU Water Framework Directive was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. The requirements of the Directive need to be considered at all stages of the river and coastal planning and development process. For the purposes of large-scale plans, such as SMPs, the consideration of the requirements of the Directive when setting and selecting policies must be necessarily high level. However, it sets the framework for future delivery of smaller-scale strategies or schemes. The Directive requires that Environmental Objectives be set for all surface and ground water bodies in each EU member state. The default Environmental Objectives of relevance to the SMP2 are shown in **Table 1.1**.

J1.2.2 Specific mitigation measures have been set for each RBD to achieve the Environmental Objectives of the Directive. These measures are to mitigate impacts that have been or are being caused by human activity. In other words, measures to enhance and restore the quality of the existing environment. These mitigation measures will be delivered through the RBMP Process and are listed in the Programme of Measures within the RBMP.

Preventing deterioration in Ecological Status or Potential

J1.2.3 As stated in **Table 1.1**, a default Objective in all water bodies is to prevent deterioration in either the Ecological Status or, for Heavily Modified Water Bodies (HMWBs) or Artificial Water Bodies (AWBs), the Ecological Potential of the water body. Any activity which has the potential to have an impact on ecology (as defined by the biological, physico-chemical and hydromorphological Quality Elements (BQEs) listed in Annex V of the Directive) will need consideration in terms of whether it could cause deterioration in the Ecological Status

or Potential of a water body. It is, therefore, necessary to consider the possible changes associated to baseline policies for each water body within the SMP2 area. This means that a decision-making audit is available should any later failure to meet the Environmental Objectives need to be defended, and issues for consideration when implementing policy are highlighted.

Table 1.1 Environmental Objectives in the Directive

Objectives (taken from Article 4 of the Directive)	Reference
Member States shall implement the necessary measures to prevent deterioration of the status of all bodies of surface water	4.1(a)(i)
Member States shall protect, enhance and restore all bodies of surface water, subject to the application of subparagraph (iii) for artificial and heavily modified bodies of water, with the aim of achieving good surface water status by 2015.	4.1(a)(ii)
Member States shall protect and enhance all artificial and heavily modified bodies of water, with the aim of achieving good ecological potential and good surface water chemical status by 2015.	4.1(a)(iii)
Progressively reduce pollution from priority substances and cease or phasing out emissions, discharges and losses of priority hazardous substances.	4.1(a)(iv)
Prevent Deterioration in Status and prevent or limit input of pollutants to groundwater	4.1(b)(i)

Achieving objectives for EU protected sites

J1.2.4 Where there are sites designated under EU legislation (e.g. the Birds or Habitats Directives, Shellfish Waters Directive), the Directive aims for compliance with any relevant standards or objectives for these sites. Therefore, where a site which is water-dependent in some way is protected by designation under another EU Directive, and the Good Ecological Status or Good Ecological Potential (GEP) targets set under the Water Framework Directive would be insufficient to meet the objectives of the other Directive, the more stringent targets would apply.

Classifying Water Body status

J1.2.5 Ecological Status is expressed in terms of five status classes – high, good, moderate, poor or bad. These classes are established on the basis of specific criteria and boundaries defined against biological, physico-chemical and hydromorphological elements (which are set out in Annex V of the WFD); these are shown in **Table 1.2**.

Table 1.2 Definition of Quality Elements

Type	Description
Biological assessment	Uses numeric measures of communities of plants and animals (e.g. fish, macrophytes)
Physico-chemical assessment	Looks at elements such as temperature and the level of nutrients, which support the biology
Hydromorphological quality	Looks at water flow, sediment composition and movement, continuity (rivers) and the structure of physical habitat

Assessing Ecological Status

J1.2.6 The overall ecological status of a Water Body is determined by whichever of these assessments is the poorer. A Water Body might achieve 'Good Status' for chemical and physico-chemical assessments, but only achieve 'Moderate Status' for the biological assessment; in this case it would be classed overall as having 'Moderate Ecological

Status'. To achieve the overall aim of good surface water status, the WFD requires that surface waters be of at least Good Ecological Status and Good Chemical Status.

Achieving High Status

J1.2.7 To achieve High Status, the WFD requires that the hydromorphological Quality Elements are also in place. For lower classes, although hydromorphological quality is not explicitly required, it is a supporting element of the biological and in some cases physico-chemical status and must therefore be taken into account. The Environment Agency has classified the Ecological Status of all Water Bodies that have not been designated as HMWBs or as AWBs.

Water Body Designation as Artificial or Heavily Modified

J1.2.8 The WFD recognises that physical alterations may have been undertaken to support the use of a Water Body for a particular purpose (e.g. water storage, coast or flood defence, navigation, etc). If this reason is still valid the Water Body may be designated as a HMWB. AWBs are those Water Bodies which have been constructed only for a specific use (e.g. reservoir). Any of the surface Water Body types (rivers, coastal, lake or transitional) can be designated as HMWBs or AWBs, and subject to alternate environmental objectives than ordinary Water Bodies, hence they have been clearly identified in each RBD and will have been classified differently.

Ecological Potential

J1.2.9 The Environment Agency has applied a separate classification process for HMWBs and AWBs based on separate guidance developed by WFD UK Technical Advisory Group (TAG). **Table 1.3** shows the steps that this guidance set out for identifying whether a HMWB or AWB meets its Ecological Potential or not.

Table 1.3 Process for classifying Ecological Potential

Stage	Description
1	Identifying the impacts of physical modification affecting the water body.
2	Identifying possible mitigation measures necessary to ensure the hydromorphological characteristics of a water body are consistent with Good or Maximum Ecological Potential.
3	Assessing whether all of these measures have been taken.

J1.2.10 Where all applicable mitigation measures have already been taken or screened out, the Water Body can be classified as Good Ecological Potential or better. Where one or more applicable mitigation measure(s) remain to be taken, the Water Body has been classified as of 'Moderate Ecological Potential or worse'. This will then be combined with the outcomes from other assessments to give an overall classification.

Assessing Deterioration

J1.2.11 Deterioration is reported as a negative change between classes in Ecological Status or Potential. The WFD assessment considers any activity that has the potential to have an impact on ecology (as defined by the BQEs) in terms of whether the activity could cause deterioration in the Ecological Status or Potential on a Water Body, or could prevent the Water Body from achieving its target Ecological Status or Potential. There are circumstances in which failure to achieve the environmental objectives can be justified under the WFD, these are:

- When failure to achieve good groundwater status, good ecological status (or good ecological potential) or to prevent deterioration in the status of a water body is the result of new modifications to the physical characteristics of a surface water body or alterations to the level of groundwater bodies; or
- When failure to prevent deterioration from high status to good status of a body of surface water is the result of new sustainable human development activities.

However, in order to justify deterioration under these circumstances, all of the conditions set out in Article 4.7 of the WFD must be met.

J1.2.12 Where new defences, or maintenance works to existing defences, may be required as a result of the SMP policy, they may have the potential to result in deterioration in current Ecological Status or Potential, or to affect the achievement of target Ecological Status or Potential. Such an affect could be due to contamination or more likely in the case of coastal defence works, hydromorphological. Therefore, to take account of the requirements of the WFD during policy making, where the policy has the potential to result in deterioration in current or target Ecological Status or Potential, the conditions set out in Article 4.7 of the WFD identified in **Table 1.4** will need to be assessed and documented for the relevant Water Body.

Table 1.4 Conditions for defending 'deterioration' in Ecological Status or Potential

Condition	Description
A	All practicable steps taken to mitigate adverse impacts on the status of the body of water;
B	The reasons for selecting the preferred SMP policies are Reasons of Overriding Public Interest and/or the benefits to the environment and to society of achieving the environmental objectives are outweighed by the benefits of the preferred MP policies to human health, to the maintenance of health and safety or to sustainable development;
C	The beneficial objectives served by the SMP policies cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option;
D	The preferred SMP policies do not permanently exclude or compromise the achievement of the objectives of the WFD in water bodies within the same RBD that are outside of the SMP area; and
E	There are no other overriding issues (e.g. designated sites, recommendations of the Habitats Regulations Assessment).

Mitigation Measures

J1.2.13 Mitigation measures are defined as actions which aim to minimise or cancel the adverse impact on the Ecological Status or Potential of the Water Body. By practicable steps, the WFD is referring to actions or measures which could be taken to mitigate adverse impacts. The way that the term 'practicable' is used in other legislation suggests that those 'mitigation measures' should:

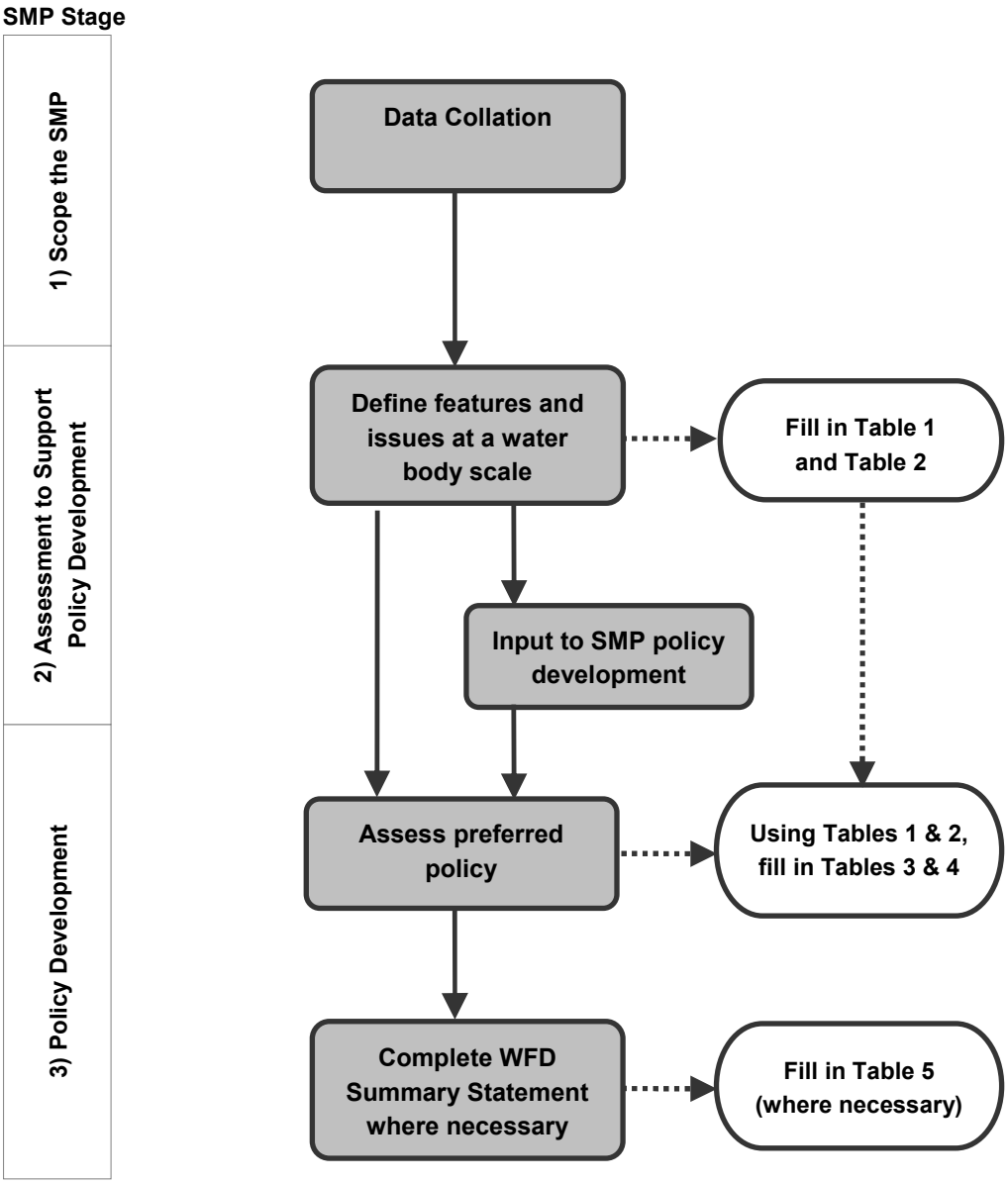
- Deliver the results for which they have been designed
- Be technically feasible
- Not lead to disproportionate costs; and
- Be compatible with new modification or sustainable human development activity.

J2 ASSESSMENT OF METHODOLOGY

J2.1.1 The methodology devised for this assessment follows the Guidance for the assessment of SMPs under the Water Framework Directive, which has been developed by the Environment Agency (Royal Haskoning, 2009). The process has been broken down into a series of clearly defined steps, broadly following the tasks and activities described within the Defra guidance on producing SMPs (Defra, 2006), to provide a transparent and accountable assessment of the SMP2 policies.

J2.1.2 The WFD assessment process for SMPs is shown in **Figure 2.1** and these actions undertaken with these steps are described in detail in the sections below. The results of these assessments are set out in **Section 3**.

Figure 2.1 Water Framework Directive assessment process for SMPs



J2.2 Scoping the SMP2 – Data collation

J2.2.1 All the Transitional and Coastal (TraC) water bodies present within the Isle of Wight SMP2 area were identified and their ID numbers, designation and draft classification details obtained from the Environment Agency.

J2.2.2 The generic Environmental Objectives set out below (based on Article 4.1 of the Directive and as described in **Table 1.1**) have been used for the assessment of the SMP.

- **WFD1:** No changes affecting high status sites.
- **WFD2:** No changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential.
- **WFD3:** No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies.
- **WFD4:** No changes that will cause failure to meet good groundwater status or result in a deterioration of groundwater status.

J2.2.3 The specific objectives for the water bodies within the Isle of Wight SMP2 area were also identified from the RBMP for the Isle of Wight RBD, which was obtained from the Environment Agency's website1. However, for some water bodies in the SMP2 area, the current overall status and objectives have not yet been assessed.

J2.2.4 The Environment Agency web-based 'Flood Map'2 was used to assess whether there are any landward freshwater bodies (FWBs) that have the potential to be influenced by SMP2 policies and should, therefore, be covered within this assessment. The names, ID numbers, designation and classification details for any such FWBs were obtained from the Environment Agency.

J2.2.5 Groundwater bodies (GWBs) that could potentially be impacted by SMP2 policies were also identified by reviewing the WFD compliance mapping for groundwater risk (known as River Basin Characterisation 2 (RBC2) and status assessment). Using the RBC2 mapping and the WFD status maps for saline intrusion obtained from the Environment Agency, the GWBs designated as being 'At Risk', 'Probably At Risk' or at 'Poor Status' within the SMP2 area were identified. The locations of groundwater abstractions with Source Protection Zones (SPZs) within the SMP2 area were also obtained from the Environment Agency's website.

J2.2.6 Any discrepancies between water body boundaries and SMP2 boundaries were examined and any locations where changes of the SMP2 boundary would be recommended to attain consistency with water body boundaries were identified.

J2.2.7 All international and national nature conservation designations were identified. The international sites, i.e. Natura 2000 designated sites (including Ramsar sites) and national sites (Sites of Special Scientific Interest (SSSIs)) were identified from the existing Habitats

[1] The draft RBMP is available at http://www.environment-agency.gov.uk/research/planning/33106.aspx

[2] The Environment Agency's Flood Map is available at http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&lang=_e&textonly=off&topic=floodmap

Regulations Assessment of the Isle of Wight SMP. It is also determined at this stage whether there were any additional investigations that could be recommended for the next round of SMP reviews to inform the WFD assessment, such as studies to address the zone of influence in terms of Biological Quality Elements (BQEs). For example, the impacts of changes in sediment transport may affect fish, as well as, benthic invertebrates, saltmarsh and seagrass.

J2.3 Defining features and issues

J2.3.1 For the SMP2, sections of the coast are considered with respect to their influence on (and interaction with) other areas of the SMP, and therefore a series of seven Policy Development Zones (PDZs), as illustrated in **Figure 3.1**, have been developed which incorporate specific sections of the coast. These sections of coastline have been considered with respect to their influence on, and interaction with, other areas of the SMP. Furthermore, each PDZ has been divided into Management Units (MANs), which themselves are divided into Policy Units (PUs). **Annex I** details the relevant coastal, transitional, freshwater and groundwater bodies that have been assessed for each policy unit and the corresponding SMP2 preferred policy option.

J2.3.2 In the main SMP2 document for each PDZ, there are summaries of the preferred SMP policy option and how this differs from the 'with present management' (WPM); these were used to identify how the SMP2 policies could affect the WFD features (i.e. BQEs of each water body). The physical parameters that could potentially be affected by SMP2 policies, and the BQEs present within each water body that are dependent on these parameters, were identified and are illustrated in **Assessment Table 1** (page 23) for each water body.

J2.3.3 The key features and issues identified in **Assessment Table 1** were then transferred into **Assessment Table 2** (page 24) and the water body classification, predicted ecological potential, relevant WFD Environmental Objectives (set out in **Section 2.1)**, relevant Protected Area Designations, and the relevant 'Mitigation Measures' from the South East RBMP were used to populate the **Assessment Table 2**.

J2.4 Assessment of SMP2 Policy against the Environmental Objectives

J2.4.1 The assessment of SMP2 policies against the Environmental Objectives was supported by a tabulated account based on an adaptation of the Policy Summary tables for each Policy Unit (PU) within the SMP2 report. Using the information on the water body features and issues defined in **Assessment Tables 1** and **2**, the potential impacts of each SMP policy were assessed at a PU level and summarised at a MAN level for the relevant water body and recorded in **Assessment Table 3** (page 36). In some places a water body may cross over more than one Management Unit, for example the Medina TraC sits within two Management Units (MAN1A and MAN1B). For each PU, the potential changes to the relevant physical and hydromorphological parameters that might occur as a result of the SMP policy were identified. The impacts of climate change on baseline processes were also taken into account when assessing all epochs. The assessment of deterioration with respect to the Directive considered the impact of any changes to the surface water body features (BQEs) that were identified in **Assessment Table 2**.

J2.4.2 The assessment of SMP2 policies also included consideration of the potential for impact upon the landward FWBs identified during the data collation phase as having the potential to be influenced by SMP2 policies (refer to **Section 2.1**). These could potentially be impacted where the SMP2 policy for a PU is No Active Intervention (NAI) or Managed

Realignment (MR) as these policy options could result in saline inundation of freshwater habitats and, hence, could potentially impact upon the freshwater biology.

J2.4.3 In addition, the assessment of the SMP2 policies in **Assessment Table 3** included consideration of the potential for impact upon GWBs. Particular attention was paid to PUs where the SMP2 policy is NAI or MR, as these policies could potentially result in the saltwater-freshwater interface moving landward, which, coupled with abstraction pressures, could result in saltwater intrusion and deterioration of the GWB. For these PUs, the extent of groundwater abstractions was identified through the use of Zone 3 (total catchment of the groundwater abstraction) of the SPZ. Where Zone 3 of an abstraction was found to extend to the coastline, or where it extended to the long term (100 years) predicted shoreline, it was considered that an SMP2 policy could potentially cause deterioration in the quality of the abstraction due to saline intrusion. Consideration was also given to the potential for SMP2 policies to lead to deterioration in Status or Potential of the TraC water bodies as a result of groundwater pollution.

J2.4.4 The outcomes of the assessment for each PU were then checked against the Environmental Objectives (as set out in **Section 2.1**). For each PU **Assessment Table 3** records whether the SMP2 policy has the potential to meet or contribute to the potential failure of the *Environmental Objectives*. Following the assessment of SMP2 policies for each PU, a summary of the achievement (or otherwise) of the Environmental Objectives was completed at the water body scale (**Assessment Table 4** – page 49).

J2.4.5 The relevant mitigation measures from the SE RBMP were considered when reviewing the SMP policies for the Isle of Wight. This is particularly important since the SMP is an important opportunity to implement some of the measures from the RBMP. **Assessment Table 4** summarises how many and which of the measures have been attained (or part attained) by the changes in SMP policies, whilst **Assessment Table 5** discusses in detail how the mitigation measures have been incorporated within the SMP. The Action Plan in the final SMP document must include a requirement for all schemes resulting from SMP2 policies to consider those mitigation measures listed in the SE RBMP Programme of Measures.

J2.4.6 Where it was identified that the *Environmental Objectives* would either not be met for one or more PUs within a water body or that there would be potential for deterioration in a water body, then the need for a Water Framework Directive 'Summary Statement' was recorded in the final column of **Assessment Table 4**. Summary Statements were then completed for each of the water bodies as deemed necessary from **Assessment Table 4** and are given in **Assessment Tables 5a** to **5e** (page 50). The Summary Statements address five questions, which are as follows:

1. Have all practicable mitigation measures (including the South East RBMP mitigation measures) been incorporated into the preferred SMP policies that affect this water body in order to mitigate the adverse impacts on the status of the water body? If not, then list mitigation measures that could be required.

2. Can it be shown that the reasons for selecting the preferred SMP policies are imperative reasons of overriding public interest (IROPI) and/or the benefits to the environment and to society of achieving the Environmental Objectives are outweighed by the benefits of the preferred SMP policies to human health, to the maintenance of health and safety or to sustainable development?

3. Have other significantly better options for the SMP policies been considered? Can it be demonstrated that those better environmental policy options which were discounted were done so on the grounds of being either technically unfeasible or disproportionately costly?

4. Can it be demonstrated that the preferred SMP policies do not permanently exclude or compromise the achievement of the objectives of the Directive in water bodies within the same River Basin District that are outside of the SMP2 area?

5. Can it be shown that there are no other over-riding issues that should be considered (e.g. designated sites, recommendations of the Appropriate Assessment)?

J3 RESULTS

J3.1 Scoping the SMP2 – Data Collation

Transitional and Coastal water bodies (TraC)

J3.1.1 There are ten TraC water bodies within the Isle of Wight SMP2 (**Figures 3.1**). These include three coastal water bodies (Solent, Isle of Wight East and Dorset/Hampshire) and seven transitional water bodies (Medina, Wootton Creek, Eastern Yar, Bembridge Harbour Lagoon, Old Mill Ponds, Western Yar and Newtown River). **Table 3.1** provides information on these ten water bodies in respect of designation and their Ecological Quality.

J3.1.2 **Table 3.1** illustrated that all but three of the water bodies are classified as heavily modified, with the Bembridge Harbour Lagoons and the Old Mill Ponds being AWBs and Newtown River being 'not designated as either an AWB or HMWB'. The Ecological Quality of the water bodies is described as moderate potential for all but three. The Isle of Wight East and Dorset/Hampshire coastal water bodies are described as having GEP, whilst Newtown River is Good Ecological Status.

J3.1.3 There are two transitional water bodies that are designated as sensitive areas under the Urban Waste Water Treatment Directive (UWWTD); these are the Medina and Newtown Rivers (Environment Agency, 2009a).

Table 3.1 TraC water bodies' hydromorphological and ecological status

Water body category	Water body ID and name	Designation	Ecological Potential / Status	Overall Objective	Reason for Designation	Relevant Mitigation Measures from the South East RBMP
Coastal	**Solent** GB6507-0515-0000	Heavily modified water body (HMWB)	Moderate Potential	Good Ecological Potential (GEP) by 2015	Coastal Protection, Flood Protection	• Managed realignment of defences; and • Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution.
	Isle of Wight East GB6507-0553-0000	HMWB	Good Potential	GEP by 2015	Coastal Protection, Flood Protection	• Remove obsolete structures; and • bank rehabilitation / reprofiling.
	Dorset / Hampshire GB6207-0555-0000	HMWB	Good Potential	GEP by 2015	Coastal Protection	None
Transitional	**Western Yar** GB520710101800	HMWB	Moderate Potential	GEP by 2027	Navigation, Structure	None
	Newtown River GB5207-1010-1700	Not Designated A/HMWB	Moderate Status	Good Ecological Status by 2027	-	None
	Medina GB5207-1010-1600	HMWB	Moderate Potential	GEP by 2027	Navigation	3 related to dredging
	Wootton Creek	HMWB	Moderate Potential	GEP by 2027	Coastal Protection,	• Preserve and where possible enhance

Water body category	Water body ID and name	Designation	Ecological Potential / Status	Overall Objective	Reason for Designation	Relevant Mitigation Measures from the South East RBMP
	GB5207-1010-1900				Structure	ecological value of marginal aquatic habitat, banks and riparian zone; • Managed realignment of flood defence; • Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution.
	Old Mill Ponds (GB5607-1011-6900)	AWB	Moderate Potential	Good Ecological Potential by 2027	Flood Protection Structure	• Operational and structural changes to locks, sluices, weirs, beach control, etc; • Remove obsolete structures.
	Eastern Yar GB5207-1010-2000	HMWB	Moderate Potential	GEP by 2027	Coastal Protection, Structure	• Operational and structural changes to locks, sluices, weirs, beach control, etc; and • Remove obsolete structure.
	Bembridge Harbour Lagoon GB5607-1011-7000	Artificial Water Body (AWB)	Moderate Potential	GEP by 2027	Flood Protection Structure	None

Freshwater bodies (FWBs)

J3.1.4 There are a number of low-lying areas within the Isle of Wight SMP area that are prone to coastal erosion and flooding, particularly on the northern coastline. Examination of the 1 in 1000 year flood area indicates that this extends for a significant area inland in certain areas (e.g. Western Yar Estuary and Eastern Yar River). The FWBs located within the 1 in 1000 year flood area are labelled on **Figure 3.2**, and listed in **Table 3.2** (refer to **Annex II** for the details of the FWBs that were scoped out).

J3.1.5 There are 35 FWBs on the Isle of Wight, 11 are rivers and 24 are artificial/heavily modified water bodies, but no freshwater lakes (Environment Agency, 2009a). Only 12 of these have been scoped into the assessment as having the potential to be affected by the SMP policies (refer to **Table 3.2** below). This is based on whether the freshwater body lies within Flood Zone 2, in that saline intrusion of the FWB will occur from a 1 in 1000 year flood. Nine of the 12 scoped FWBs are classified as heavily modified, of which one has Good Ecological Potential (Isle of Wight) and one Poor Ecological Potential (Lukely Brook), whilst the rest Moderate Ecological Potential. There are three FWBs that are not designated as AWBs or HMWBs: Dodnor Creek, Gurnard Luck and Little Thorness Stream, with all attaining moderate status. None of the FWBs that are relevant for this WFD assessment have been predicted to improve in status by 2015.

Figure 3.1 Map of TraC Water Bodies in Isle of Wight SMP area

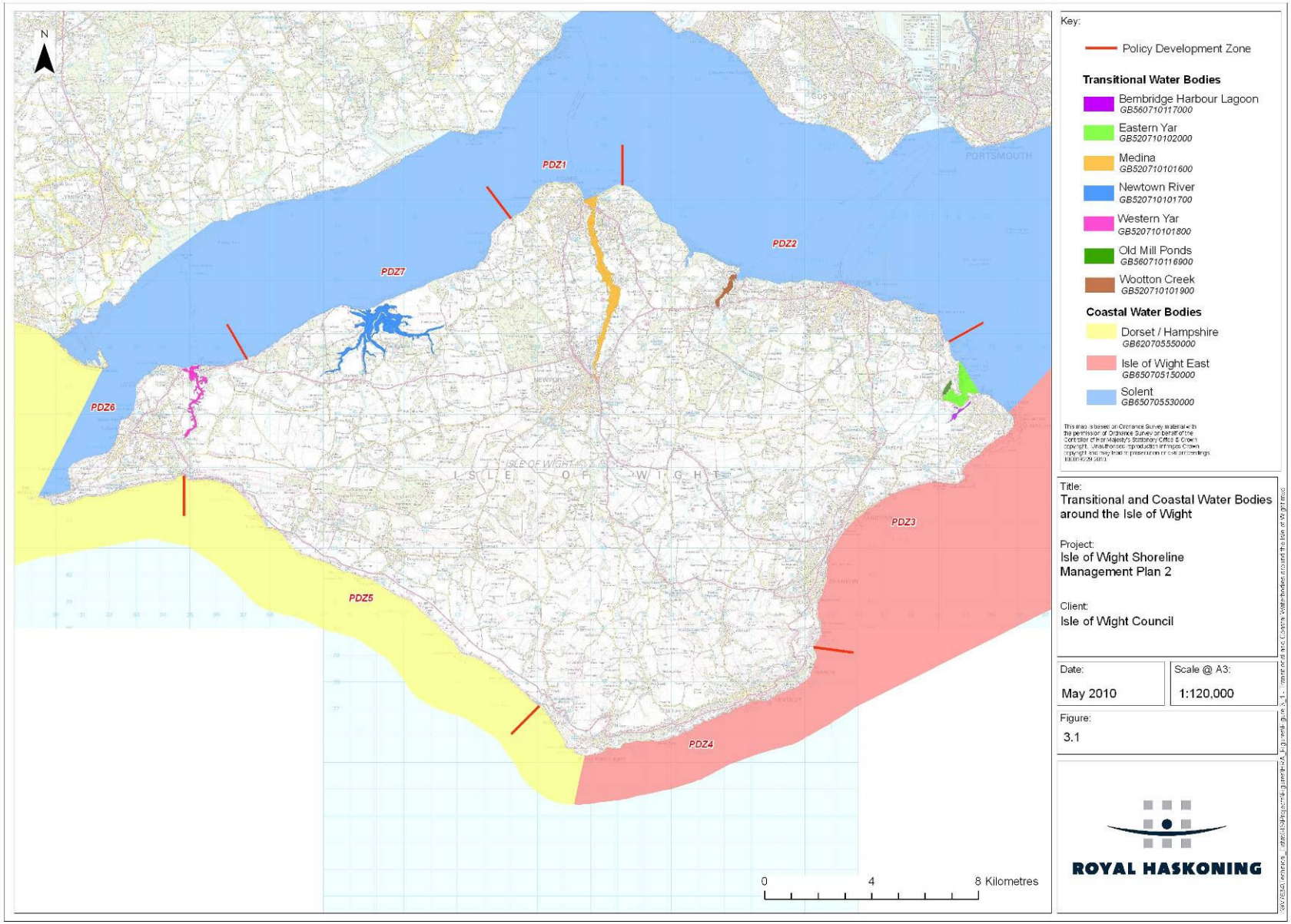
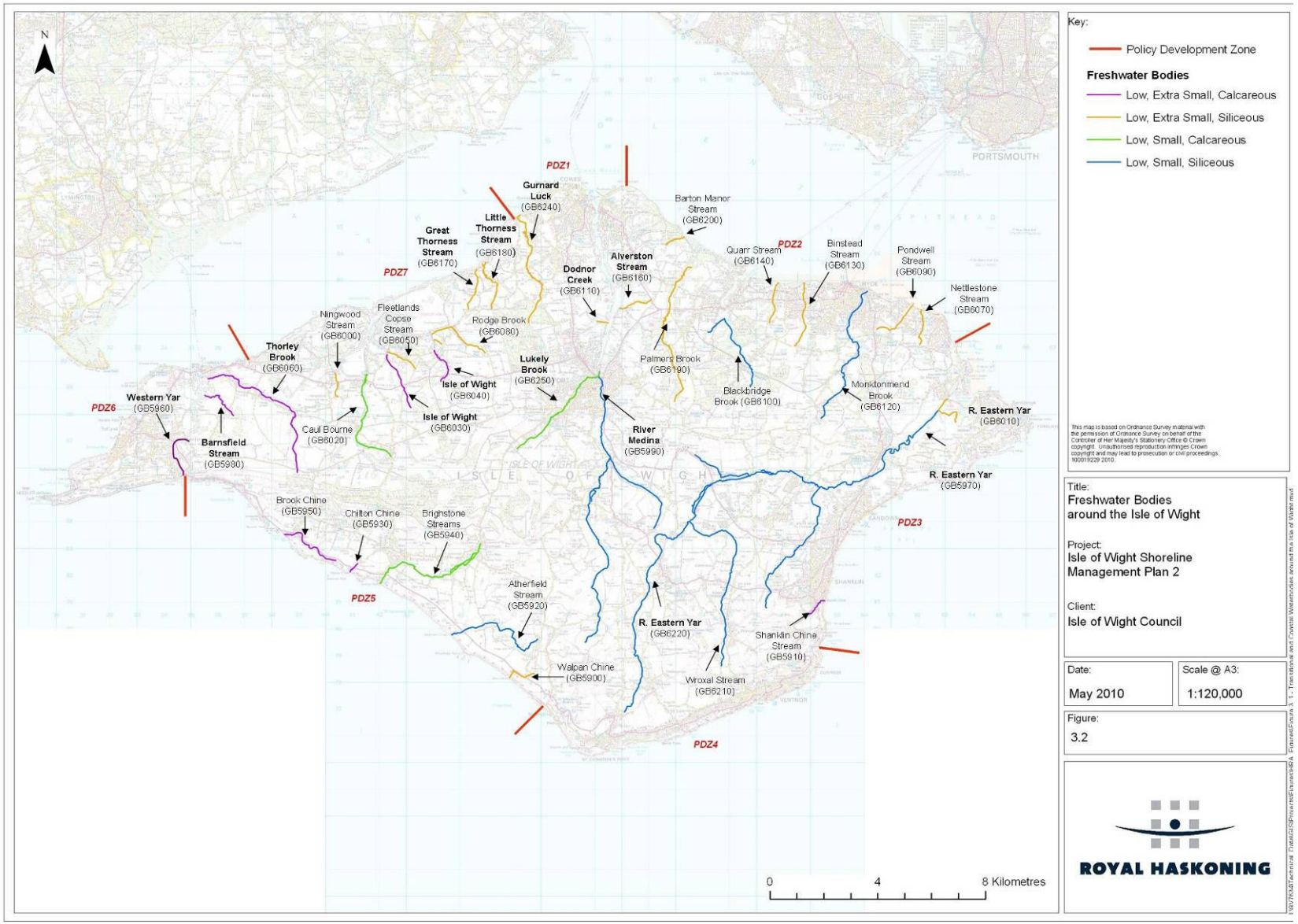


Figure 3.2 **Freshwater Bodies within the Isle of Wight SMP2 area, illustrating river catchment typology (altitude, size, geology). Names of the FWBs in BOLD indicates those within 1 in 1000 year flood zone in 2110.**



J3.1.6 There is one Drinking Water Protected Area (DrWPA) on the Isle of Wight, which is the Eastern Yar River Catchment and no surface water Safeguard Zone on the Island (Environment Agency, 2009a). Furthermore, there are two rivers that are designated under the Freshwater Fish Directive; these are the Eastern Yar (PDZ 3) and the Medina (PDZ 1).

Table 3.2 **Scoping of the FWBs (all are rivers within the Isle of Wight Catchment) within the 1 in 1000 year flood zone and, hence, have the potential to be impacted by policies in the Isle of Wight SMP2 area.** All Isle of Wight FWBs water ID starts with GB10710100 – the last four digits of the ID are given below.

Freshwater Body Name (ID number)	Hydromorph-ological Designation	Ecological Quality	Objective	Relevant Mitigation Measures from the South East RBMP
Scoped In – At risk of being tidally flooded with from a 1 in 1000 year flood zone				
Alverstone Stream (Medina) (GB6160)	Heavily Modified	Moderate Potential	GEP by 2027	• Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone
Dodnor Creek (GB6110)	Not Designated A/HMWB	Moderate Status	Good Ecological Status by 2027	• None
River Eastern Yar (GB5970, downstream: GB6010, GB6220)	Heavily Modified	GB5970 & GB6010 - Moderate Potential / GEP by 2027 – Good Potential	GEP by 2027, GB6220 - GEP by 2015	• Retain marginal aquatic and riparian habitats (channel alteration); • Operational and structural changes to locks, sluices, weirs, beach control, etc. • Structures or other mechanisms in place and managed to enable fish to access waters upstream; • Re-opening culverts; • Improve floodplain connectivity; • Preserve and, where possible, restore historic aquatic habitats; • Remove obsolete structure.
Barnsfield Stream (GB5980)	Heavily Modified	Moderate Potential	GEP by 2027	• None
River Medina (GB5990)	Heavily Modified	Moderate Potential	GEP by 2027	• Retain marginal aquatic and riparian habitats (channel alteration); • Operational and structural changes to locks, sluices, weirs, beach control, etc.; • Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone; • Structures or other mechanisms in place and managed to enable fish to access waters upstream; • Re-opening existing culverts; • Preserve and, where possible, restore historic aquatic habitats; • Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution; and • Remove obsolete structures.
Isle of Wight (GB6030 – off Newtown Harbour, GB6040 – off of	GB6030 & GB6040 - Heavily Modified *Remaining are*	Good Potential	GB6030, GB6040 - GEP by 2015	• None

Freshwater Body Name (ID number)	Hydromorph-ological Designation	Ecological Quality	Objective	Relevant Mitigation Measures from the South East RBMP
Newtown Harbour)	*unclassified*			
Thorley Brook GB6060)	Heavily Modified	Moderate Potential	GEP by 2027	• Retain marginal aquatic and riparian habitats (channel alteration); • Preserve, and where possible, enhance ecological value of marginal aquatic habitat, banks and riparian zone • Re-opening existing culverts.
Gurnard Luck (GB6240)	Not Designated AWB / HMWB	Moderate Status	Good Ecological Status by 2027	• None
Lukely Brook (GB6250)	Heavily Modified	Poor Potential	GEP by 2027	• Operational and structural changes to locks, sluices, weirs, beach control, etc.; • Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution; • Preserve and, where possible, restore historic aquatic habitats; • Re-opening existing culverts; • Flood bunds (earth banks, in place of floodwalls); • Set-back embankments; • Improve floodplain connectivity; • Structures or other mechanisms in place and managed to enable fish to access waters upstream; • Remove obsolete structures; • Preserve and, where possible, enhance ecological value of marginal aquatic habitat, banks and riparian zone; and • Retain marginal aquatic and riparian habitats (channel alteration).
Great Thorness Stream (GB6170)	Heavily Modified	Moderate Potential	GEP by 2027	• Retain marginal aquatic and riparian habitats (channel alteration).
Little Thorness Stream (GB6180)	Not Designated A/HMWB	Moderate Status	Good Ecological Status by 2027	• None
Western Yar (GB5960)	Heavily Modified	Moderate Potential	GEP by 2027	• Retain marginal aquatic and riparian habitats (channel alteration). • Preserve and, where possible, restore historic aquatic habitats; and • Re-opening existing culverts.

Groundwater bodies (GWBs)

J3.1.7 There are a total of four GWBs within Isle of Wight SMP2 area and no unproductive strata. These GWBs and their status are listed in **Table 3.3** below and are illustrated in **Figure 3.3**.

J3.1.8 Three of the major units (Central Downs Chalk, Southern Downs Chalk and Lower Greensand) supply water for agriculture and industry and are heavily abstracted for public water supply. All three of these GWBs are of Poor Status, whilst the Solent Group GWB, which is not abstracted from to the same degree, is in Good Status. The total of licensed

water abstraction on the Isle of Wight is about 78 Million Litres per day (68% groundwater and 32% surface water).

J3.1.9 All four GWBs are also protected as Drinking Water Protected Areas (DrWPAs) under the Groundwater Directive (2006/118/EC), though these are due to sensitivity to nutrients rather than saline intrusion. The South East River Basin Management Plan was referred to determine the status for saline intrusion, since GWBs designated as being 'At Risk', 'Probably At Risk' or at 'Poor Status' within the SMP2 area could be impacted by the SMP policies. None of the GWBs are designated as Poor Status, At Risk or Probably At Risk from saline intrusion, all are 'Good Status' meaning saline intrusion is not presently or regarded a future issue. Since there is no risk of saline intrusion into the GWBs, they have not been assessed within this assessment unless there are any coastal SPZs. There are two Groundwater Safeguard Zones on the Isle of Wight, both of which are reasonably near the coast – these are on the south coast of the Island; the larger of the two is above Ventnor and Bonchurch, whilst the smaller above Castlehaven, both of which are in PDZ 4. These are also the locations of groundwater abstractions with Source Protection Zones (SPZs) within the SMP2 area that are also on the south coast of the Island within PDZ 4. Therefore, the risk of SMP2 policies resulting in deterioration of the aquifer is low in all the PDZs except PDZ 4, which is assessed in **Assessment Table 3**.

Table 3.3 Groundwater bodies' status, risk of saline intrusion and pressures / risks

Water body ID and name	Overall Status	Status Objective	Risk of Saline Intrusion	Pressures / Risks
Central Downs Chalk (G3)	Poor	Good by 2027	Good (confidence: high)	Nutrients, pollutants and abstraction
Lower Greensand (G1)	Poor	Good by 2027	Good (confidence: low)	Nutrients, pollutants and abstraction
Solent Group (G5)	Good	Good by 2015	Good (confidence: low)	Nutrients
Southern Downs Chalk (G16)	Poor	Good by 2027	Good (confidence: low)	Nutrients, hazardous substances, abstraction and other artificial flow pressures.

Boundary issues

J3.1.10 Boundary issues within the Isle of Wight SMP2 assessment are reasonably complex, with three in discrepancies involving the coastal water bodies.

J3.1.11 The first boundary issue is for the margin between the Solent and Isle of Wight East coastal water bodies. The SMP boundary for between Policy Development Zones (PDZs) 2 and 3 do not align with this water body boundary, as illustrated in **Figure 3.4**. This matter was discussed during the development of the PDZs for the SMP2; however, the PDZ boundary was set based on the low-lying Eastern Yar valley that links the area surrounding Bembridge Harbour and the northern coastline of Sandown Bay, since the coastal management of the two is intrinsically linked. At a policy unit level, the water body boundary for these two TraCs lies within PU3B.2, rather than aligned to the SMP boundaries. This policy unit is a defended section of coastline with undefended sections either side (see **Figure 3.4**). It would therefore, have made no sense to have split the policy unit into two units so as to align with the water body boundaries. However, in the future there is a possibility of realigning this policy unit, since the policy for this unit is to Holding the Line

(HTL) for the first two epochs and then have a MR policy in line with the adjacent policy units (PU3B.3 and PU3B.4).

J3.1.12 The second boundary issue is for the margin between the Isle of Wight East and Dorset / Hampshire coastal water bodies. The SMP boundary for between Policy Development Zones (PDZs) 4 and 5 (and PU4B.3 and PU4B.2) do not align with this water body boundary, as illustrated in **Figure 3.5**. This SMP boundary has been determined due to coastal processes, as the long shore sediment transport around this headland changes from gravel and sand along the southern-western coastline, to larger sediments of shingle along the southern coastline of St. Catherine's Point to Shanklin Chine. However, since the water body boundary sits within an undefended section of the coastline, and which the policy is NAI for PDZ 5 and PU4B.3. It would be possible in future reviews of the SMP, to change the SMP boundaries marginally to account for the water body boundary, this is illustrated in **Figure 3.5**.

J3.1.13 The third boundary issue is for the margin between the Dorset / Hampshire and Solent coastal water bodies. The SMP boundary for between PDZs 5 and 6 do not align with this water body boundary, with PU6A.2 spanning across the two coastal water bodies, as illustrated in **Figure 3.6**. PDZ 6 encompasses Freshwater Bay around to the east of Yarmouth because of the low-lying Western Yar valley that intrinsically links the two coasts. A policy unit boundary could be added in at the Needles at the point where the Isle of Wight East coastal water becomes the Solent coastal water body. However, this is not necessary since the policy for PU6A.2 is NAI for all three epochs, therefore allowing natural coastal processes to continue to erode the coastline, thus having no effect on the WFD objectives for either of the water bodies.

Figure 3.3 Groundwater Bodies in the Isle of Wight SMP2 area

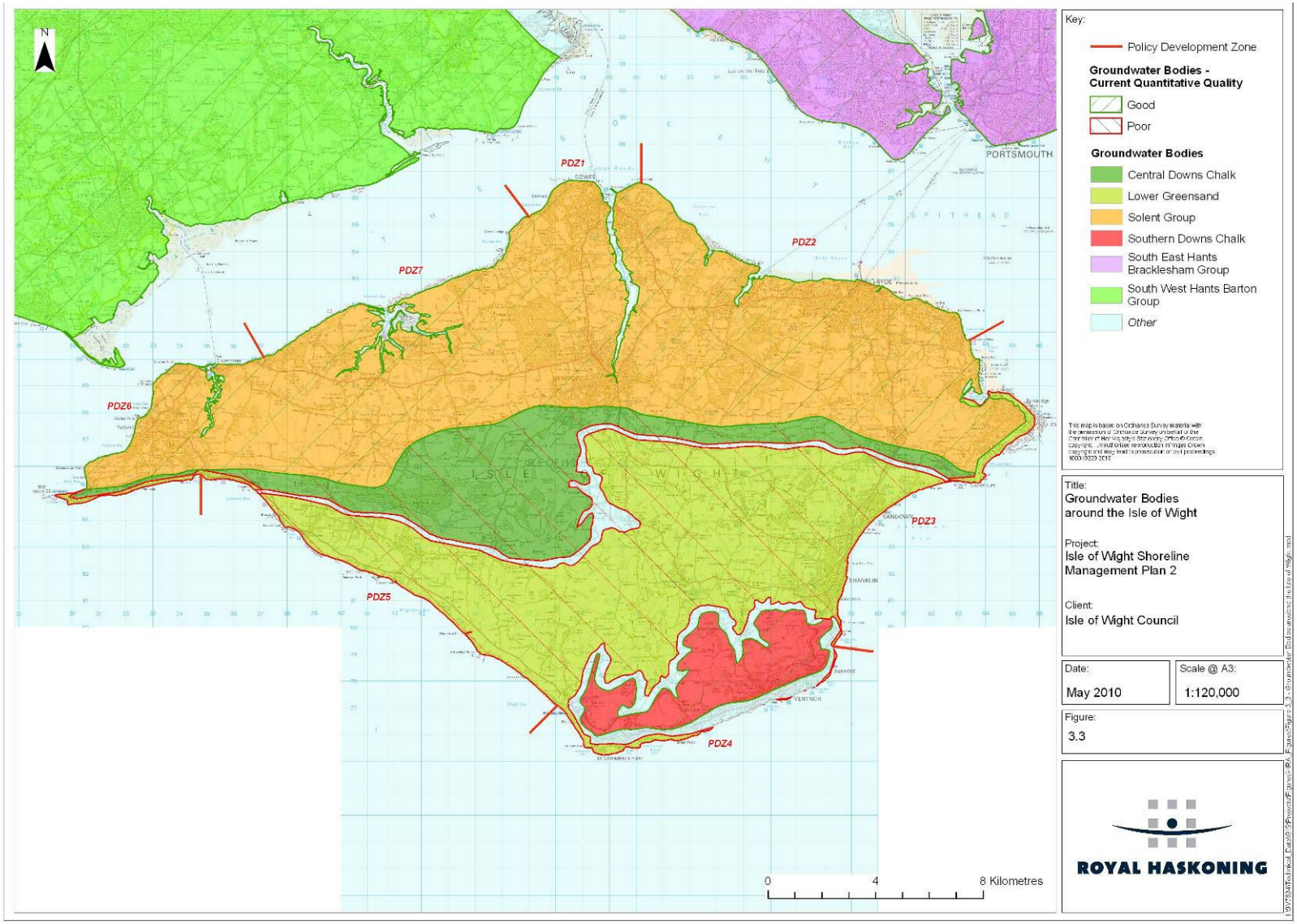


Figure 3.4 SMP2 PDZ boundary and water body boundaries at Horestone Point and Bembridge

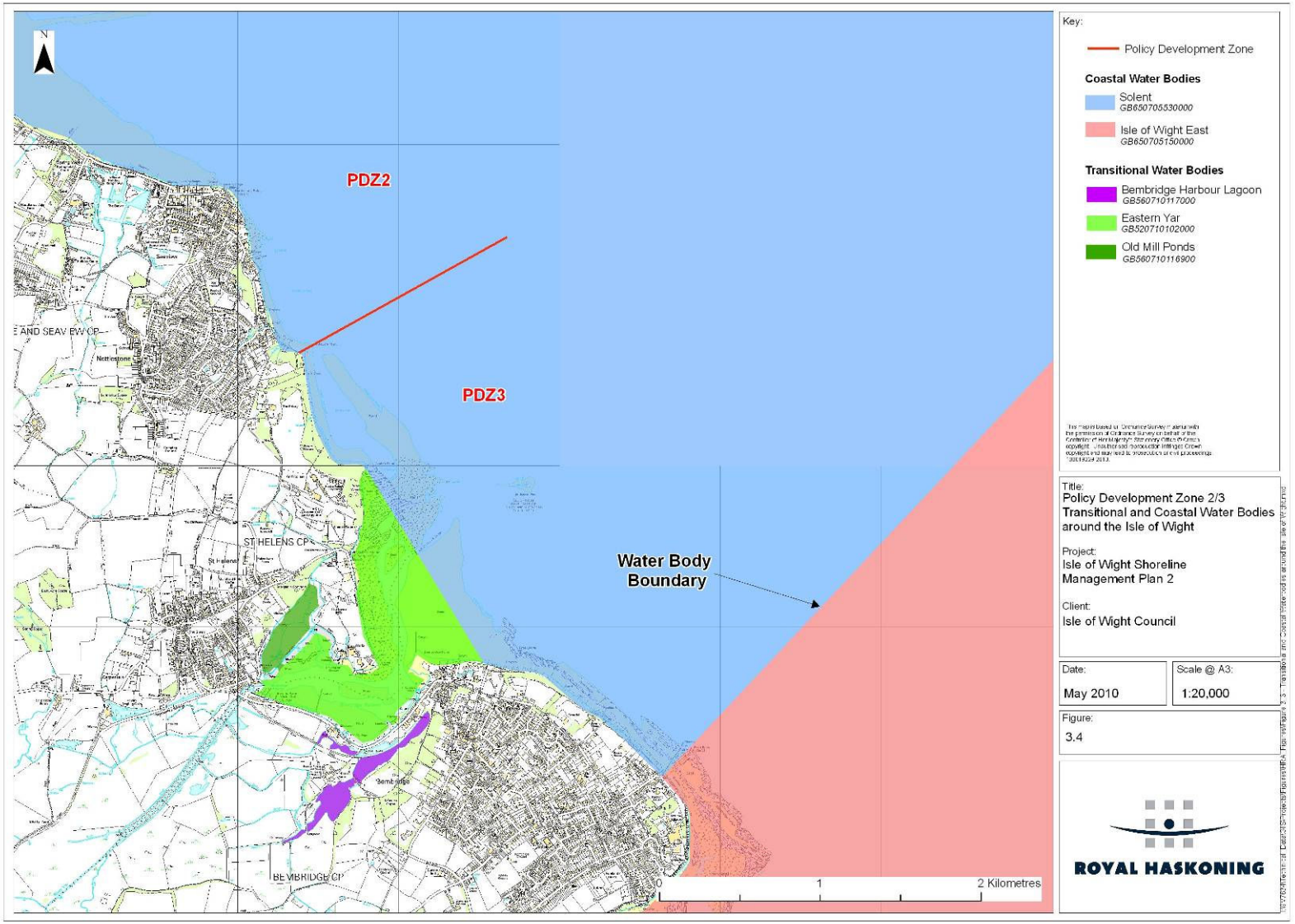


Figure 3.5 SMP2 PDZ boundary and water body boundaries at Blackgang Chine and St Catherine's Point

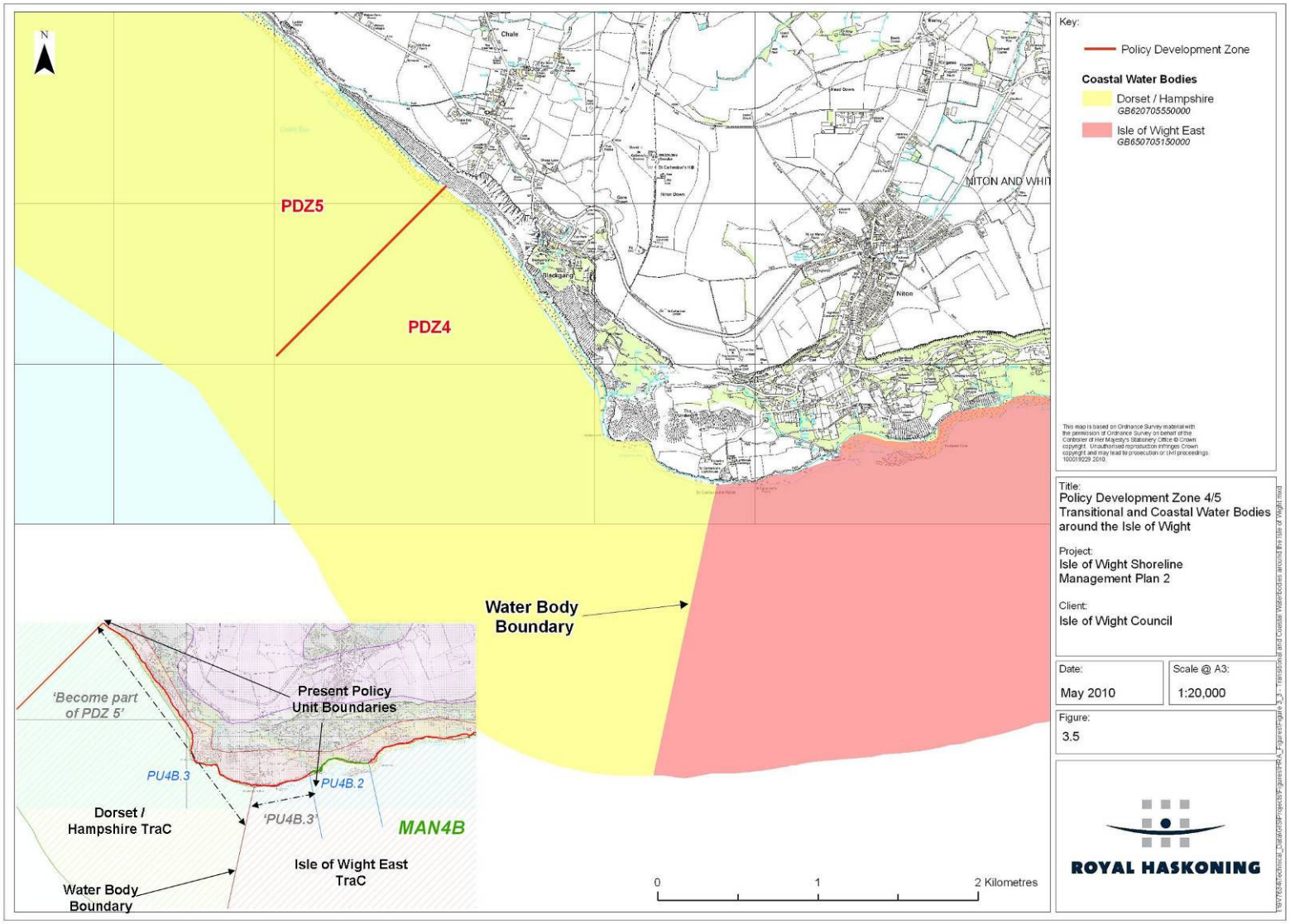
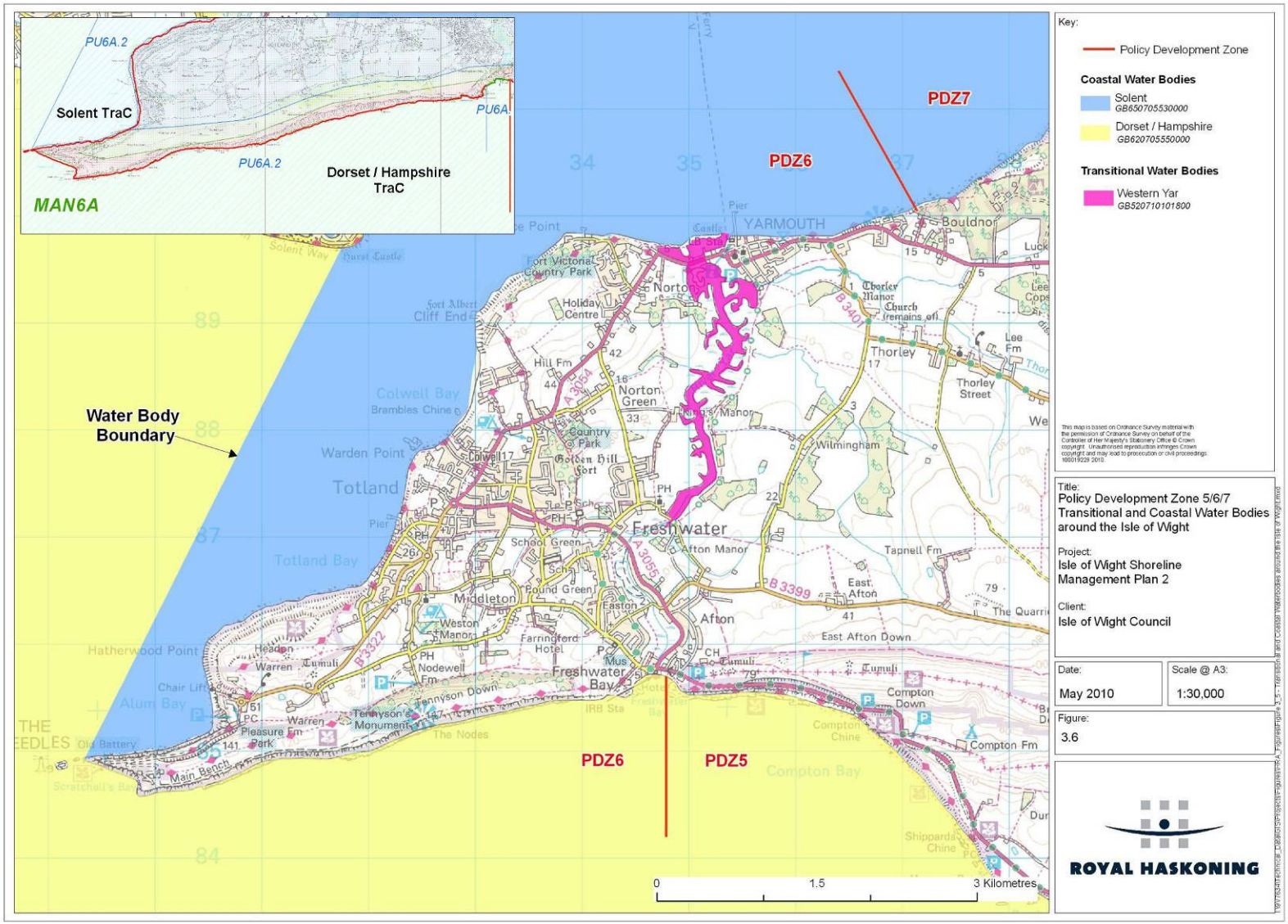


Figure 3.6 SMP2 PDZ boundary and water body boundaries at Freshwater Bay and The Needles



Nature Conservation Designation Sites

J3.1.14 There are a number of international and national nature conservation designations within the SMP area that have been assessed by the Habitats Regulations Assessment (**Appendix I** of this SMP). The Natura 2000 and Ramsar designated sites within the Isle of Wight SMP area are the:

- Solent and Southampton Water Special Protection Area (SPA) and Ramsar sites;
- Solent Maritime Special Area of Conservation (SAC);
- Briddlesford Copse SAC;
- Solent and Isle of Wight Lagoons SAC;
- South Wight Maritime SAC; and
- Isle of Wight Downs SAC.

J3.1.15 There are 17 Sites of Special Scientific Interest within the Isle of Wight SMP area that have the potential to be affected by the SMP policies; these are: Medina Estuary; King's Quay Shore; Ryde Sands and Wootton Creek; Briddlesford Copses; Brading Marshes to St. Helen's Ledges; Whitecliff Bay and Bembridge Ledges; Bembridge Down; Bonchurch Slips, Ventnor Downs, Compton Chine to Steephill Cove, Headon Warren and West High Down; Colwell Bay; Yar Estuary; Freshwater Marshes; Bouldnor and Hamstead Cliffs; Newtown Harbour; and Thorness Bay.

J3.2 Defining features and issues

J3.2.1 For the TraC water bodies in the Isle of Wight SMP2 area, the hydromorphological parameters that could potentially be affected by SMP2 policies and the BQEs that are dependent upon these are shown in **Assessment Table 1**. The key features and issues for each water body in the SMP2 area are then summarised in **Assessment Table 2**, together with the classification and Environmental Objectives for each TraC water body.

J3.2.2 There are three coastal water bodies around the Isle of Wight. The features and issues are largely the same for each of these coastal water bodies, though the extent to which each of the features is likely to be affected differs. This is mainly in part due to the differences in the geology and geomorphology of the coastline, which determine the type of habitats present. The Solent coastal water body, which covers the north side of the Isle of Wight, comprises a mix of intertidal rocky shores (colonised by an array of macroalgae), interspersed between rich intertidal mudflats and long expanses of sandflats. There are also a number of seagrass beds in the shallow subtidal regions of protected bays and occurrences of brackish and freshwater habitats (e.g. saltmarsh, grazing marsh and reed beds) in low-lying entrances to creeks and streams. Consequently, this water body has the potential to be affected by changes in salinity, turbidity, light levels and sediment loading as a result of SMP2 policies. The Isle of Wight East and Dorset / Hampshire coastal water bodies cover the southern side of the Isle of Wight, and are therefore characterised by high geologically important cliffs, at the foot of which there are extensive intensive biodiverse rocky shores and subtidal reefs. The difference between these two coastal water bodies is the presence of seagrass beds in the shallow subtidal around the Bembridge headland in the Isle of Wight East TraC, which are predominantly affected by changes in light attenuation, sediment loading and elevation. There is also a long sandy bay within the Sandown/Shanklin Bay, within which there will be benthic invertebrates that could be affected by changes in the beach water table. Within the Dorset / Hampshire TraC there

are internationally important sea caves within the chalk cliffs that harbour diverse and rare assemblages of macroalgae. Any changes in sediment loading that could cause abrasion and reduce light attenuation will affect these assemblages. There are also no angiosperms within this water body.

J3.2.3 The features and issues for the Transitional water bodies are similar to those for the coastal water bodies, though they are predominantly composed of mudflats and saltmarshes, with benthic/macroinvertebrates and angiosperms being the key BQEs, and with the added need to consider impacts on phytoplankton and the potential impacts for fish through changes to the heterogeneity of habitat and accessibility to nursery areas and migration routes.

J3.2.4 There are no High Status water bodies within the Isle of Wight SMP2, therefore the assessment of the Environmental Objective WFD1, which states that there should be no changes affecting high status sites (**Section 2.1**) is not applicable.

J3.2.5 SMP policies have the potential to impact upon the chemical status of surface water bodies where a policy of NAI or landward realignment is implemented at a location where there is historic contamination (e.g. historic landfill) in close proximity to the coastline. There are two historic sites with potential contamination issues within PDZ 1 along the Medina Estuary: Stag Lane and Fairlee Waste Water Treatment. Therefore, it is considered unlikely that policies within Isle of Wight SMP2 have the potential to impact upon the chemical status of water bodies other than in PDZ 1. Chemical status is therefore only been considered further within the relevant policy section (i.e. PDZ 1) of the assessment.

Assessment Table 1 **BQEs within TraC water bodies that could be affected by changes to hydromorphology as a result of relevant SMP policies (colour shading for each TraC water body is as used Table 3.1 and in Figure 3.1)**

Feature	Issues	Coastal Water Bodies			Transitional Water Bodies						
Biological Quality Element (BQE)	**Potential for change in physical or hydromorphological parameter**	Solent	Isle of Wight East	Dorset / Hampshire	Medina	Wootton Creek	Eastern Yar	Bembridge Harbour Lagoons	Old Mill Ponds	Western Yar	Newtown River
Phytoplankton	Residence time				✓	✓	✓	✓	✓	✓	✓
	Water depth				✓	✓	✓	✓	✓	✓	✓
	Thermal regime							✓	✓		
	Turbidity				✓	✓	✓	✓	✓	✓	✓
Macroalgae	Episodicity (at low end of velocity spectrum)										
	Salinity				✓	✓	✓	✓	✓	✓	✓
	Abrasion (associated to velocity)	✓	✓	✓							
Angiosperms	Inundations (tidal regime)	✓	✓		✓	✓	✓	✓	✓	✓	✓
	Sediment loading	✓	✓		✓	✓	✓	✓	✓	✓	✓
	Land elevation	✓	✓		✓	✓	✓	✓	✓	✓	✓
	Salinity							✓	✓		
	Abrasion (associated to velocity)	✓	✓		✓	✓	✓	✓	✓	✓	✓
	Light	✓	✓		✓	✓	✓	✓	✓	✓	✓
Benthic/macro invertebrates	Beach water table (TraC)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Groundwater connectivity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Availability of leaf litter/organic debris										
	Connectivity with riparian zone										
Fish	Heterogeneity of habitat (substrate, provision of shelter)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Continuity for migration routes					✓					
	Substrate conditions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Presence of macrophytes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Accessibility to nursery areas (elevation of saltmarsh, connectivity with shoreline/riparian zone)	✓	✓	✓	✓	✓	✓		✓	✓	✓

✓ = Applies to water body **?** = Might apply and hence included

Assessment Table 2 **Water Framework Directive Features and Issues for TraC water bodies in the Isle of Wight SMP2 (colour shading for each TraC water body is as used Table 3.1 and in Figure 3.1)**

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
Solent (Coastal)	Macroalgae	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to control structures or defences may result in changes in wave and current dynamics and subsequent changes in abrasion patterns.	**Classification:** HMWB - moderate ecological potential **Predicted Ecological Potential:** Good Potential by 2027 **Environmental Objectives:** • **WFD2:** No changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential. • **WFD3:** No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. • **WFD4:** No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status. **Protected Area Designation:** Bathing Water Directive (BWD), Natura 2000 (Habitats and/or Birds Directive),	Programme of Measures from the RBMP that could be considered in SMP development or in schemes resulting from SMP policies: • Managed realignment of defences; • Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution; and • Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone.
	Angiosperms	There is potential for changes in the frequency of tidal inundations, sediment loading, land elevation and abrasion (associated to velocity) which may impact upon angiosperms.		
	Benthic/macro invertebrates	SMP2 policies have the potential to cause changes in the beach water table and/or the groundwater connectivity upon which invertebrates are dependent.		
	Fish	Potential impacts on fish due to changes in substrate conditions and/or accessibility to nursery areas.		

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
			Nitrates Directive (ND), Shellfish Water Directive (SWD), Urban Waste Water Treatment Directive (UWWTD)	
Medina (Transitional)	Macroalgae	There is potential for SMP2 policies to result in changes in water depth and turbidity, which could potentially impact upon phytoplankton populations in this relatively small and enclosed water body.	**Classification:** HMWB **-** moderate ecological potential **Predicted Ecological Potential:** Good Potential by 2027 **Environmental Objectives:** • **WFD2**: No changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential. • **WFD3**: No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. • **WFD4**: No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status. **Protected Area Designation:** Freshwater Fish Directive (FFD),	Programme of Measures from the RBMP that could be considered in SMP development or in schemes resulting from SMP policies: • No measures that are relevant to the SMP. There are three mitigation measures, all of which are in place and relate to dredging.
	Angiosperms	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to natural control points, control structures or defences may result in changes in wave and current dynamics and subsequent changes in abrasion patterns.		
	Benthic/macro invertebrates	There is potential for changes in the frequency of tidal inundations, sediment loading, land elevation and abrasion (associated to velocity) which may impact upon angiosperms.		
	Fish	Invertebrates have the potential to be impacted by SMP2 policies through changes to groundwater connectivity.		

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
			Natura 2000 (Habitats and/or Birds Directive), ND, SWD, UWWTD	
Wootton Creek (Transitional)	Phytoplankton	There is potential for SMP2 policies to result in changes in water depth and turbidity, which could potentially impact upon phytoplankton populations in this relatively small and enclosed water body.	**Classification:** HMWB – moderate ecological potential **Predicted Ecological Potential:** Good Potential by 2027 **Environmental Objectives:** • WFD2: No changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential. • WFD3: No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. • WFD4: No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status.	Programme of Measures from the RBMP that could be considered in SMP development or in schemes resulting from SMP policies: • Managed realignment of defences; • Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution; and • Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone.
	Macroalgae	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to natural control points, control structures or defences may result in changes in wave and current dynamics and subsequent changes in abrasion patterns.		
	Angiosperms	There is potential for changes in the frequency of tidal inundations, sediment loading, land elevation and abrasion (associated to velocity) which may impact upon angiosperms.		
	Benthic/macro invertebrates	Invertebrates have the potential to be impacted by SMP2 policies through changes to groundwater connectivity.		
	Fish	SMP2 policies have the potential to result in changes to the heterogeneity of habitat, substrate conditions and accessibility to nursery areas and, hence, could potentially impact upon fish.		
Eastern Yar (Transitional)	Phytoplankton	There is potential for SMP2 policies to result in changes in water depth and turbidity, which	**Classification:** HMWB – moderate ecological potential	Programme of Measures from the RBMP that could be considered in

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
		could potentially impact upon phytoplankton populations in this relatively small and enclosed water body.	**Predicted Ecological Potential:** Good Potential by 2027 **Environmental Objectives:** • **WFD2:** No changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential. • **WFD3:** No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. • **WFD4:** No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status. **Protected Area Designation:** BWD, Drinking Water Protected Area (DWPA), FFD, Natura 2000 (Habitats and/or Birds Directive), ND	SMP development or in schemes resulting from SMP policies: • Changes to beach control; • Retain marginal aquatic and riparian habitats (channel alteration); • Operational and structural changes to locks, sluices, weirs, beach control, etc. • Structures or other mechanisms in place and managed to enable fish to access waters upstream and downstream of the impounding works; • Re-opening existing culverts; and • Remove obsolete structure.
	Macroalgae	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to natural control points, control structures or defences may result in changes in wave and current dynamics and subsequent changes in abrasion patterns.		
	Angiosperms	There is potential for changes in the frequency of tidal inundations, sediment loading, land elevation and abrasion (associated to velocity) which may impact upon angiosperms.		
	Benthic/macro invertebrates	Invertebrates have the potential to be impacted by SMP2 policies through changes to groundwater connectivity.		
	Fish	SMP2 policies have the potential to result in changes to the heterogeneity of habitat, substrate conditions and accessibility to nursery areas and, hence, could potentially impact upon fish.		
Bembridge Harbour Lagoon (Transitional)	Phytoplankton	There is potential for SMP2 policies to result in changes in water depth and turbidity, which could potentially impact upon phytoplankton populations in this relatively small and enclosed	**Classification:** Artificial – moderate ecological potential **Predicted Ecological Potential:** Good	Programme of Measures from the RBMP that could be considered in SMP development or in schemes resulting from SMP policies:

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
		water body.	Potential by 2027 **Environmental Objectives:** • **WFD2:** No changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential. • **WFD3:** No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. • **WFD4:** No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status. **Protected Area Designation:** Natura 2000 (Habitats and/or Birds Directive), and ND	• There are no mitigation measures in the RBMP for this water body.
	Macroalgae	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to natural control points, control structures or defences may result in changes in wave and current dynamics and subsequent changes in abrasion patterns.		
	Angiosperms	There is potential for changes in the frequency of tidal inundations, sediment loading, land elevation and abrasion (associated to velocity) which may impact upon angiosperms.		
	Benthic/macro invertebrates	Invertebrates have the potential to be impacted by SMP2 policies through changes to groundwater connectivity.		
	Fish	SMP2 policies have the potential to result in changes to the heterogeneity of habitat, substrate conditions and accessibility to nursery areas and, hence, could potentially impact upon fish.		
Isle of Wight East (Coastal)	Macroalgae	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to control structures or defences may result in changes in wave and current dynamics and subsequent changes in abrasion patterns.	**Classification:** HMWB – good ecological potential **Predicted Ecological Potential:** Good Potential by 2015	Programme of Measures from the RBMP that could be considered in SMP development or in schemes resulting from SMP policies: • Bank rehabilitation / reprofiling

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
	Angiosperms	There is potential for changes in the frequency of tidal inundations, sediment loading, land elevation and abrasion (associated to velocity) which may impact upon angiosperms.	**Environmental Objectives:** • **WFD2:** No changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential. • **WFD3:** No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. • **WFD4:** No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status. **Protected Area Designations:** BWD, Natura 2000 (Habitats and/or Birds Directive), ND, SWD, and UWWTD	(already in place); and • Remove obsolete structure (already in place).
	Benthic/macro invertebrates	SMP2 policies have the potential to cause changes in the beach water table and/or the groundwater connectivity upon which invertebrates are dependent.		
	Fish	SMP2 policies have the potential to result in changes to the heterogeneity of habitat, substrate conditions and accessibility to nursery areas and, hence, could potentially impact upon fish.		
Dorset/Hampshire (Coastal)	Macroalgae	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to control structures or defences may result in changes in wave and current dynamics and subsequent changes in abrasion patterns.	**Classification:** HMWB – good ecological potential **Predicted Ecological Potential:** Good Potential by 2015 **Environmental Objectives:** • **WFD2:** No changes that will cause	Programme of Measures from the RBMP that could be considered in SMP development or in schemes resulting from SMP policies: • There are no mitigation measures in the RBMP for this water body.
	Benthic/macro	SMP2 policies have the potential to cause		

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
	invertebrates	changes in the beach water table and/or the groundwater connectivity upon which invertebrates are dependent.	failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential. • **WFD3:** No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. • **WFD4:** No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status. **Protected Area Designations:** BWD, Natura 2000 (Habitats and/or Birds Directive), ND, and SWD.	
	Fish	SMP2 policies have the potential to result in changes to the heterogeneity of habitat, substrate conditions and accessibility to nursery areas and, hence, could potentially impact upon fish.		
Western Yar (Transitional)	Phytoplankton	There is potential for SMP2 policies to result in changes in water depth and turbidity, which could potentially impact upon phytoplankton populations in this relatively small and enclosed water body.	**Classification:** HMWB – moderate ecological potential **Predicted Ecological Potential:** Good Potential by 2027 **Environmental Objectives:** • **WFD2:** No changes that will cause failure to meet surface water Good Ecological Status or Potential or	Programme of Measures from the RBMP that could be considered in SMP development or in schemes resulting from SMP policies: • There are no mitigation measures in the RBMP for this water body.
	Macroalgae	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to natural control points, control structures or		

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
		defences may result in changes in wave and current dynamics and subsequent changes in abrasion patterns.	result in a deterioration of surface water Ecological Status or Potential. • **WFD3:** No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. • **WFD4:** No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status. **Protected Area Designations:** Nature 2000 (Habitats and/or Birds Directive), ND, SWD.	
	Angiosperms	There is potential for changes in the frequency of tidal inundations, sediment loading, land elevation and abrasion (associated to velocity) which may impact upon angiosperms.		
	Benthic/macro invertebrates	Invertebrates have the potential to be impacted by SMP2 policies through changes to groundwater connectivity.		
	Fish	SMP2 policies have the potential to result in changes to the heterogeneity of habitat, substrate conditions and accessibility to nursery areas and, hence, could potentially impact upon fish.		
Newtown River(Transitional)	Phytoplankton	There is potential for SMP2 policies to result in changes in water depth and turbidity, which could potentially impact upon phytoplankton populations in this relatively small and enclosed water body.	**Classification:** Not designated A/HMWB – moderate ecological status. **Predicted Ecological Status:** Good Status by 2027 **Environmental Objectives:** • **WFD2:** No changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or	Programme of Measures from the RBMP that could be considered in SMP development or in schemes resulting from SMP policies: • There are no mitigation measures in the RBMP for this water body.
	Macroalgae	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to natural control points, control structures or defences may result in changes in wave and current dynamics and subsequent changes in		

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
		abrasion patterns.	Potential. • **WFD3:** No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies. • **WFD4:** No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status. **Protected Area Designations:** Nature 2000 (Habitats and/or Birds Directive), ND, SWD, UWWTD.	
	Angiosperms	There is potential for changes in the frequency of tidal inundations, sediment loading, land elevation and abrasion (associated to velocity) which may impact upon angiosperms.		
	Benthic/macro invertebrates	Invertebrates have the potential to be impacted by SMP2 policies through changes to groundwater connectivity.		
	Fish	SMP2 policies have the potential to result in changes to the heterogeneity of habitat, substrate conditions and accessibility to nursery areas and, hence, could potentially impact upon fish.		
Old Mill Ponds (Transitional)	Phytoplankton	There is potential for SMP2 policies to result in changes in water depth and turbidity, which could potentially impact upon phytoplankton populations in this small and enclosed water body.	**Classification:** Not designated A/HMWB – moderate ecological status. **Predicted Ecological Status:** Good Status by 2027 **Environmental Objectives:** • **WFD2:** No changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential. • **WFD3:** No changes which will	Programme of Measures from the RBMP that could be considered in SMP development or in schemes resulting from SMP policies: • Operational and structural changes to locks, sluices, weirs, beach control, etc.; and • Remove obsolete structures.
	Macroalgae	Potential changes to macroalgae through changes in abrasion (associated to velocity) as a result of SMP policies. For example, changes to natural control points, control structures or defences may result in changes in wave and current dynamics and subsequent changes in abrasion patterns.		
	Angiosperms	There is potential for changes in the frequency		

Feature		Issue	Water body Classification and Environmental Objectives	Opportunity to deliver mitigation measures from the Programme of Measures &/or recommendations on preferred policy
Water Body (Policy Development Zones/Policy Units)	**Biological Quality Element**	**Changes to BQE physical and/or hydromorphological dependencies**		
		of tidal inundations, sediment loading, land elevation and abrasion (associated to velocity) which may impact upon angiosperms.	permanently prevent or compromise the Environmental Objectives being met in other water bodies. • **WFD4:** No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status. **Protected Area Designations:** Nature 2000 (Habitats and/or Birds Directive).	
	Benthic/macro invertebrates	Invertebrates have the potential to be impacted by SMP2 policies through changes to groundwater connectivity.		
	Fish	SMP2 policies have the potential to result in changes to the heterogeneity of habitat, substrate conditions and accessibility to nursery areas and, hence, could potentially impact upon fish.		

J3.3 Assessment of SMP2 Policy against the Environmental Objectives

J3.3.1 **Assessment Table 3** below expands on the assessment of the SMP2 policies, indicating whether there is potential for environmental objectives to be compromised at a PU scale. Further to this, an assessment of the likelihood and effect of potential failure at the water body scale is made in **Assessment Table 4**, as well as summarising the South East RBMP mitigation measures that have been attained by the SMP policies. Both **Assessment Tables 3** and **4** identify potential for failure and consequently track the decisions that have been made within the SMP to meet conditions required to defend any later failure. The process enables key potential areas of concern to be flagged up and the essential need to refer to the South East RBMP Programme of Measures during strategy or scheme level planning.

J3.3.2 The potential for the policies to affect freshwater bodies (both designated as FWBs or not) should highlight the possible issues in defending those FWBs from tidal inundation and flooding through sea level rise.

Environmental Objective WFD1

J3.3.3 WFD1 is only applicable to High Status water bodies. None of the TraC water bodies in the Isle of Wight SMP2 area are classified as at High Status. Therefore, the potential of SMP2 policies to meet or fail WFD1 has not been considered further in this assessment.

Environmental Objective WFD2

J3.3.4 Four of the seven Policy Development Zones (PDZs) were identified as having potential to contribute to a failure to meet Environmental Objective WFD2 (no changes that will cause failure to meet surface water Good Ecological Status or Potential or result in a deterioration of surface water Ecological Status or Potential). There are two PDZs (PDZ 2 and 6) where the SMP2 policy of HTL could result in the loss of intertidal rocky foreshores, because as existing outcrops are submerged, the hard defences prevent erosion from exposing new rock outcrop, which potentially could impact upon macroalgae. Where there are SMP2 policies of HTL in the estuaries (PDZs 1, 2, 3, 6 and 7), there could be changes in the hydrodynamics and tidal elevation leading to increased abrasion and changes in substrate conditions, which could potentially impact upon the macroalgae, phytoplankton, angiosperms (e.g. saltmarsh and seagrass), benthic/macro invertebrates and fish BQEs (as identified in **Assessment Table 2**), as well as the loss of saltmarsh habitats and estuarine mudflats from sea level rise. However, all of the estuaries are HMWBs, with the exception of Newtown River which is 'not designated either an AWB or HMWB'. The intent of future management for these estuaries is in line with the present management, and in many cases (PDZ 1, 2 and 6) the intent is to improve the overall water body through NAI or MR where there have previously been maintained defences. Therefore, deterioration in Ecological Potential is not considered likely, however, the HTL policies will still mean the SMP2 policies have the potential to prevent the water body from attaining Good Ecological Potential. The policy of HTL within the Eastern Yar at Embankment Road has the potential to impede the migration of fish with the present configuration of sluices and therefore contribute to the failure of Good Ecological Potential. Though it should be noted, that by having a HTL policy the environmental objectives of the River Eastern Yar FWB will be maintained, since there will be no permanent change in the extent of the freshwater BQEs.

Assessment Table 3 **WFD Assessment of SMP Policy for the Isle of Wight SMP2 (colour shading refers to the shaded water bodies in Table 3.1 and Figure 3.2)**

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
PDZ1	**West of Gurnard to East Cowes**	**Solent (Coastal)** **<u>Relevant Management Units:</u>** **MAN 1A (outer part)** (Gurnard Luck to Cowes Parade)	PU1A.1	Gurnard Luck	HTL	NAI	NAI	At Gurnard Luck there is ongoing erosion along the frontage. HTL will maintain the defence and later NAI will not preclude private maintenance of defences. As sea level rises the intertidal area will be lost. However, the intertidal here is very mobile with sands and gravels dominating; there is limited benthos and macroalgae present. NAI has the potential to impact the FWB Gurnard Luck (GB6240) south of Gurnard Holiday village through changes to salinity, inundations and the presence of macrophytes due to saline inundation, which would impact on the freshwater BQEs. However, this would be ensuring the area is more sustainable, and providing the adaptation is done so as to allow macrophytes to adapt to saline inundation, the policy will not result in the failure to meet Good Ecological Status. A sewage network pumping station (water company) on Marsh Road lies within the Flood Zone 2 boundaries and is therefore at risk from flooding and potentially causing contamination of the Solent coastal water body. At Gurnard Cliff NAI will continue to allow the cliff to erode naturally. Between Gurnard and Cowes Parade the defence of the road, the Parade and properties requires HTL policy. This will lead to loss of intertidal along this frontage. However there will be limited effect on benthos and macroalgae and is **unlikely to contribute to the deterioration of Moderate Ecological Potential or attaining Good Ecological Potential by 2015**.	**N/A**	✓	✓	✓
			PU1A.2	Gurnard Cliff	NAI	NAI	NAI		**N/A**	✓	✓	✓
			PU1A.3	Gurnard to Cowes Parade	HTL	HTL	HTL		**N/A**	✓	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
		Medina (Transitional) **<u>Relevant Management Units:</u>** **MAN 1A (part)** (West and East Cowes) **MAN 1B** (Central Medina)	PU1A.4	West Cowes	HTL	HTL	HTL	The Medina Estuary extends 6.8km from its tidal limit at Newport Harbour northwards to Cowes and East Cowes. It lies in a narrow shallow valley with relatively steep sides. Sediment build up has formed characteristic mudflats covering 66 hectares which support a large number of species, including shellfish, algae and locally and regionally important species of worm, also important sources of food for fish and bird populations. The proposed policies for this water body are HTL or NAI. HTL is necessary to defend properties and business along the estuary. Where NAI is proposed this is to allow the estuary to return to as natural a state as possible, though it will not preclude the maintenance of private defences (a course of action to be expected). The central section of the estuary is moderately defended either with private or public defences, with the eastern side of the Medina being less defended than the west. NAI for the most of the central estuary will therefore allow the migration of the riparian banks with increasing sea levels, ensuring there is little coastal squeeze of the saltmarsh and mudflats. However, as sea levels rise coastal squeeze will occur where the defence line is held. The estuary has lost 10ha of saltmarsh (an angiosperm) since the 1940s due to development, dredging and to a lesser extent through natural processes. Further saltmarsh and intertidal mudflats will be lost due to coastal squeeze where policy is to maintain the defences. BQEs such as benthic invertebrates, macroalgae and fish could be affected. There are a number of historic and current contamination risks along the Medina Estuary, where SMP policy could affect the	**N/A**	**x**	✓	✓
			PU1B.1	Central Medina – NW	NAI	NAI	NAI		**N/A**	✓	✓	✓
			PU1B.2	West Medina Mills	HTL	HTL	HTL		**N/A**	**x**	**x**	✓
			PU1B.3	Central Medina – SW	NAI	NAI	NAI		**N/A**	✓	✓	✓
			PU1B.4	Newport Harbour	HTL	HTL	HTL		**N/A**	**x**	✓	✓
			PU1B.5	Central Medina – East	NAI	NAI	NAI		**N/A**	✓	**x**	✓
			PU1A.5	East Cowes	HTL	HTL	HTL		**N/A**	**x**	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								achievement of the WFD objectives for surface water bodies. West Medina Mills has a policy of HTL to protect the important wharf and associated business. An NAI policy would cause contamination issues due to historic contamination associated with dock and wharf activities at West Medina Mills and the Stag Lane landfill site. There is a closed Waste Water Treatment plant (Fairlee) on the eastern bank of the Medina which falls under the NAI policy. The area is presently undefended, though there is a small risk of flooding up to Little Copse, and depending on the works there could contamination of the Medina River. However, since there are presently no defences there it is unlikely that there is a risk of contamination and therefore unlikely to fail the WFD objective. **Hence, deterioration in surface water Ecological Potential of the transitional water body (Medina) is unlikely since previously defended areas are no longer going to be defended; however, attaining Good Ecological Potential by 2027 will still be affected by a moderate proportion of defences being held.** In addition, NAI within the central east and west Medina has the potential to impact the lower reaches of the landward FWBs of 'Dodnor Creek' (in PU1B.2) and 'Alverstone Stream' (PU1B.5) through changes in salinity and inundations, which would impact on the freshwater BQEs. Alverstone Stream is currently protected from extended saline intrusion from defences that hold the Island Harbour Marina, whilst Dodnor Creek protected with a managed sluice. A policy of NAI is unlikely to affect environmental objectives of the Alverstone Stream, since the Marina is likely to maintain their defences and therefore there				

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								will be no increased saline intrusion. A NAI policy will mean that tidal flooding will occur within Dodnor Creek ('not designated a HMWB') and there will be losses of the freshwater BQEs around the lower reaches of the stream. However, this will be returning it to a more natural state of equilibrium. The head of the Medina Estuary is defended to protect the community of Newport, and therefore also prevents saline intrusion of the lower reaches of the River Medina FWB. Therefore the HTL will ensure that WFD objective for this FWB is not compromised because of the SMP policy, thus ensuring that **the SMP2 is not the reason for any failure to meet Good Ecological Potential for the Medina FWB**.				
		Solent (Coastal) **Relevant Management Units:** **MAN 1A (part)** East Cowes Outer Esplanade	PU1A.6	East Cowes Outer Esplanade	HTL	NAI	NAI	HTL will occur until the end of the present defences' effective life, following this it is proposed that NAI to occur. In the short term coastal squeeze will therefore begin to occur but in the longer term NAI should allow the coast to roll back naturally here. The BQEs in the wider water body will not be affected. There are no FWBs in this policy unit.	**N/A**	✓	✓	✓
PDZ2	**East Cowes to Seagrove**	**Solent (Coastal)** **Relevant**	PU2A.1	Osborne Bay	NAI	NAI	NAI	The intertidal areas along this stretch of coastline are dominated by intertidal sand and mudflats, interspersed with areas of rocky foreshores and shingle spits, with a few small areas of coastal grazing marsh. Subtidal seagrass beds can be found in Osborne	**N/A**	✓	✓	✓
			PU2A.2	Woodside	NAI	NAI	NAI		**N/A**	✓	✓	✓

Policy Development Zone	Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
				2025	2055	2105		WFD1	WFD2	WFD3	WFD4
	Management Units: **MAN 2A** Osborne Bay to Woodside						Bay. The creek at King's Quay consists of estuarine habitats. The NAI policy along the Osborne Bay and Woodside frontage is anticipated to result over time in the failure of the cliffs and slopes behind the frontage. The shoreline will be allowed to roll back and further development of habitat can be expected. Therefore, **deterioration in Ecological Potential of the TraC (Solent) water body as a result of the SMP2 policy is considered unlikely**.				
	Wootton Creek (Transitional) **Relevant Management Units:** **MAN 2B (part)** Wootton Creek	PU2B.1	Western Wootton Creek	NAI	NAI	NAI	Wootton Creek consists of estuarine habitats ranging from freshwater swamp, brackish reed beds, saltmarshes, shingle spits and intertidal mudflats and that are used as feeding grounds for Brent geese and other water birds and waders. The offshore areas are used regularly as winter feeding grounds for grebes, sea duck and divers and for terns during the summer. Where NAI is proposed this should allow natural processes to roll the shore back. However, maintenance of private defences are not precluded and where homes and river frontages are present these will no doubt be defended in the short term at least. Where there are HTL policies for all three epochs (for the community of Wootton Bridge), coastal squeeze will result in intertidal habitats being lost in the creek with sea level rise. BQEs would therefore be affected by this including fish, macroalgae, minimal amounts of angiosperms (saltmarsh) and benthic invertebrates. **This could result in the Ecological Potential of these two TraCs (Wootton Creek and Solent) water bodies from failing to meet Good Ecological Potential by 2027**.	N/A	✓	✓	✓
		PU2B.2	South-west Wootton Creek	HTL	HTL	HTL		N/A	x	✓	✓
		PU2B.3	Old Mill Pond	MR	MR	MR		N/A	✓	✓	✓
		PU2B.4	South-east Wootton Creek	HTL	HTL	HTL		N/A	x	✓	✓
		PU2B.5	Eastern Wootton Creek	NAI	NAI	NAI		N/A	✓	✓	✓

Policy Development Zone	Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
				2025	2055	2105		WFD1	WFD2	WFD3	WFD4
							Managed realignment is proposed for the frontage at the Old Mill Pond. The overall aim is to try to return this part of the creek to tidal conditions. This however, will take time and very careful management of changes to salinity, velocity of the water and geomorphology, as though this would be the sustainable and beneficial policy option, there could be negative affects on the BQEs (especially angiosperms, benthic invertebrates and fish) if not managed correctly. If the MR is carried out successfully the BQEs will not be adversely affected.				
		Solent (Coastal) **<u>Relevant Management Units:</u>** **MAN 2B (part)** Fishbourne Ferry Terminal to Binstead **MAN 2C** Ryde to Seagrove Bay	PU2B.6	Fishbourne Ferry Terminal	HTL	HTL	HTL	Where there are HTL policies for all three epochs for the ferry terminal and for the first two epochs in the outer Eastern Creek, coastal squeeze will result in intertidal habitats being lost in the creek with sea level rise. BQEs would therefore be affected by this including fish, macroalgae and benthic invertebrates. **This has the potential to result in the Ecological Potential of this coastal water body from failing to meet Good Ecological Potential by 2015.**	**N/A**	**x**	✓	✓
			PU2B.7	Outer Eastern Creek	HTL	HTL	MR		**N/A**	**x**	✓	✓
			PU2B.8	Quarr and Binstead	NAI	NAI	NAI	The Quarr and Binstead frontage continues with cliffs backing intertidal sand and mudflats. Without defences, continued cliff erosion is likely at Quarr and continuing re-activations of landslides are likely at Binstead. In addition, small areas of the narrow low-lying valleys at Quarr and Binstead could become inundated as sea-levels rise because they possess very little natural upper beach protection and rely upon defences. Their tidal prisms would probably be too small to maintain permanent inlets so brackish lagoons or marshes subject to periodic inundation would be most likely to form. No BQEs will be	**N/A**	✓	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								adversely affected by the NAI policy for all three epochs for this frontage.				
			PU2C.1	Ryde	HTL	HTL	HTL	The rest of this frontage from Ryde to Seagrove Bay has a proposed policy of HTL for all three epochs due to the built up environment requiring sea defences to protect the communities and assets from tidal flooding and coastal erosion. Sea level rise has the potential to lead to loss of intertidal sandflat areas and also increased depth of subtidal areas. There are large seagrass beds (angiosperms) along this frontage. These beds needs shallow subtidal areas in order to flourish. They support an array of benthos, fish and are favoured as bird feeding grounds. If the intertidal were lost there would be an initial increase in the amount of shallow subtidal area, but with further sea level rise this could be expected to actually decrease in area as depths increase. However, since the area is a sediment sink and the Ryde sands spit will continue to rise in pace with sea level rise, it is likely that the seagrass beds would migrate landwards. Therefore, the BQEs such as macroalgae, fish and invertebrates are unlikely to be affected. However, along policy unit 2C.4 there are rocky intertidal shores inhabited by diverse communities of macroalgae, below which there are seagrass beds. The HTL policy will mean coastal squeeze of these rocky shores as coastal erosion process would not be allowed to expose further expanses of rocky shore and the depth of water would increase with potential for loss of seagrass bed area. Therefore, BQEs such as macroalgae and angiosperms are likely to be affected. **This could result in the**	**N/A**	✓	✓	✓
			PU2C.2	Appley and Puckpool	HTL	HTL	HTL		**N/A**	✓	✓	✓
			PU2C.3	Springvale to Seaview (Including the Duver)	HTL	HTL	HTL		**N/A**	✓	✓	✓
			PU2C.4	Seagrove Bay	HTL	HTL	HTL		**N/A**	x	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								Ecological Potential of this TraC (Solent) water body from failing to meet Good Ecological Potential by 2027.				
PDZ3	Seagrove to Luccombe	**Solent (Coastal)** **<u>Relevant Management Units:</u>** **MAN 3A (part)** Priory Bay[3]	PU3A.1	Priory Bay (part)	NAI	NAI	NAI	There are a variety of coastal habitats within this PDZ from intertidal rocky shores with seagrass beds (angiosperms) in the shallow subtidal to long stretches of sandy beaches and soft slumping maritime cliffs. The frontage along Priory Bay consists of rocky shore and sand, backed by woodland. The policy of NAI will ensure natural coastal processes will continue to erode the coastline and allow landward migration with sea level rise. **Therefore, it is unlikely there will be deterioration in Ecological Potential for the two TraCs (Solent and Eastern Yar) as a result of the policy in PU3A.1.**	**N/A**	✓	✓	✓
		Eastern Yar (Transitional)	PU3A.1	Priory Bay (part)	NAI	NAI	NAI		**N/A**	✓	✓	✓
		<u>Relevant Management Units:</u> **MAN 3A (part)** Priory Bay and The Duver	PU3A.2	The Duver	HTL	HTL	MR	The proposed policy at The Duver is one of HTL in epochs 1 and 2, and then moving towards realignment in the third epoch. Bembridge Harbour mouth consists of two sand and shingle spits backed by sand dunes and with extensive seagrass beds (angiosperms) around the entrance. The Duver is a sand spit which protects Bembridge Harbour behind it. The rationale behind the MR is to allow the spit to act more naturally by realigning the current defences landward. Once undefended it is possible that although the spit will be eroded from both sides it will begin to roll back naturally and continue to be fed by sediment from Priory Bay. This will have to be monitored carefully as without the spit the defences backing Bembridge, the Harbour will become exposed. Allowing the spit to evolve	**N/A**	✓	✓	✓

[3] Refer to **Figure 3.4** and paragraph **J3.1.11** for boundary issue

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								more naturally will also ensure that the shallow subtidal seagrass beds can move landward in time as sea levels rise and the depth of water deepens.				
		Old Mill Pond (Transitional) **<u>Relevant Management Units:</u>** **MAN 3A (part)** Priory Bay to Embankment Road	PU3A.2	The Duver	HTL	HTL	MR	The Old Mill Ponds is an area of intertidal saltmarsh (angiosperms) that is protected by a causeway along the south-east edge and The Duver sand spit along the north-east edge. Bembridge Harbour, including the Old Mill Ponds is an accreting system and is expected to maintain the existing habitat extent of the intertidal area with sea level rise. A HTL policy is therefore not expected to affect the functioning of the Old Mill Pond, or the associated BQEs (i.e. saltmarsh, benthic invertebrates and fish). **Therefore, it is unlikely there the SMP2 policy around the Old Mill Ponds will cause either deterioration in Ecological Potential for this TraCs water body.**	**N/A**	✓	✓	✓
			PU3A.3	St Helens	HTL	HTL	HTL		**N/A**	✓	✓	✓
		Eastern Yar (Transitional) **<u>Relevant Management Units:</u>** **MAN 3A (part)** St Helens and Embankment Road	PU3A.3	St Helens	HTL	HTL	HTL	Within the harbour and beyond (up the flood plain of the River Yar to Brading) are a variety of habitats, including vegetated shingle, saltmarsh, mudflats, saline lagoons and reedbeds. This area supports large numbers of over wintering wildfowl and waders. The frontage at St Helens and Embankment Road needs to be maintained in order to protect a vast area of hinterland from tidal flooding within the second epoch. Freshwater habitat is also at risk if the line of defence along Embankment Road is not maintained. Investigations into the options for the Eastern Yar Strategy have demonstrated that Bembridge Harbour is an accreting system (supported by the need to regularly dredge the	**N/A**	x	✓	✓
			PU3A.4	Embankment Road	HTL	HTL	HTL		**N/A**	x	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								entrance), and that over time, the HTL policy would not cause the loss of intertidal mudflats and saltmarsh with sea level rise (Environment Agency, 2009b). The harbour inlet is still in a state of adjustment following reclamation of the Yar River in the 1880s and is continuing to accrete and possibly warp up, keeping pace with sea level rise. It is therefore not expected that the BQEs within the Harbour would be affected. However, the HTL policy (all three epochs) means that the Eastern Yar Estuary is not functioning naturally or sustainably in the long term and inhibits clear migration for fish species up the Eastern Yar River, which impedes the objectives of the Freshwater Fish Directive. Therefore, even though some of the BQEs within Bembridge Harbour are not expected to be adversely affected (i.e. angiosperms and benthic invertebrates), fish will continue to be, and thus the SMP2 policy has the potential to prevent the TraC from attaining Good Ecological Potential.				
		Bembridge Harbour Lagoon (Transitional) **<u>Relevant Management Units:</u>** **MAN 3A (part)** Embankment Road	PU3A.4	Embankment Road	HTL	HTL	HTL	The River Eastern Yar's water levels are managed with a set of sluice gates that enter Bembridge Harbour in the north-west corner, upstream of the sluice the river is a FWB and therefore **a HTL policy will ensure that the Environmental Objectives for the River Eastern Yar FWB are not compromised**. This is also the case for the Bembridge Lagoons TraC that exists landward of the Embankment Road. These brackish lagoons are sensitive to salinity changes and diffuse pollution and support an internationally diverse biological community, with species such as the starlet sea anemone *Nematostella vectensis*. The BQEs of this water body will be maintained in with a HTL policy and it	**N/A**	✓	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								is **unlikely there will be deterioration in the Ecological Potential of the TraCs as a result of the policy in PU3A.4**.				
		Eastern Yar (Transitional) **<u>Relevant Management Units:</u>** **MAN 3A (part)** Bembridge Point	PU3A.5	Bembridge Point	MR	HTL	HTL	The frontage at Bembridge Point includes the south-eastern spit that protects the opposite side of the harbour to The Duver. The existing line of defence will not be maintained in the first epoch but a new line of defence to protect property etc will be put in place by the second epoch. This will allow the coastline to undergo more natural coastal processes around the spit, particularly in the 1st and 2nd epochs. In the 3rd epoch, there may be coastal squeeze against the aligned defences. Therefore, in the **short to medium term the SMP2 policy is unlikely to result in deterioration in the Ecological Potential of the Solent TraC.**	**N/A**	✓	✓	✓
		Solent (Coastal) **<u>Relevant Management Units:</u>** **MAN 3B (part)** Bembridge and Land End	PU3B.1	Bembridge	NAI	NAI	NAI	Bembridge Point to Whitecliff Bay comprises diverse Chalk and limestone rocky intertidal ledges, with a number of large lagoons supporting seagrass beds, kelps and red algae communities. The policy of a combination of HTL and MR along the Lane End to Foreland frontage may not necessarily keep up with sea level rise. There is potential for there to be coastal squeeze and thus loss of the rocky intertidal ledges, as well as the extent of the seagrass beds being affected with increasing depths of the surrounding subtidal areas. The benthic invertebrate, fish, macroalgae and angiosperms (seagrass) BQEs could therefore be affected in the short to medium term until the coastline adjusts to more natural coastal processes and soft coastal management strategies. **However, it is unlikely that this will affect the overall potential to meet Good Ecological**	**N/A**	✓	✓	✓
			PU3B.2	Lane End	HTL	HTL	MR		**N/A**	✓	✓	✓

Policy Development Zone	Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
				2025	2055	2105		WFD1	WFD2	WFD3	WFD4
							Potential for the Solent TraC water body by 2027.				
	Isle of Wight East (Coastal) **<u>Relevant Management Units:</u>** **MAN 3B (part)** Foreland to Whitecliff Bay **MAN 3C** Culver Cliff to Luccombe	PU3B.3	Foreland	MR	MR	MR	As stated above Bembridge Point to Whitecliff Bay comprises diverse Chalk and limestone rocky intertidal ledges. The policy combination of HTL and MR for the Foreland and Foreland Fields frontages may not necessarily keep up with sea level rise. There is potential for there to be coastal squeeze and thus loss of the rocky intertidal ledges, as well as the extent of the seagrass beds being affected with increasing depths of the surrounding subtidal areas. The benthic invertebrate, fish, macroalgae and angiosperm (seagrass) BQEs could therefore be affected in the short to medium term until the coastline adjusts to more natural coastal processes and soft coastal management strategies. **However, as on the Bembridge and Lane End frontage it is unlikely that this will affect the overall potential to meet Good Ecological Potential for the Isle of Wight East TraC water body by 2015.** The eroding maritime cliffs from Whitecliff Bay around to Yaverland are of geological importance for their exposed rock sequences. A NAI policy along this frontage will ensure that coastal processes continue to erode back both the rock sequences and the species they support, **therefore maintaining contribution to Good Ecological Potential for the Isle of Wight East coastal water body**. The coastline from Yaverland to Luccombe Chine comprises protected sandy beaches, with the subtidal clay exposures and mudstone reefs that support faunal turf communities. The	**N/A**	✓	✓	✓
		PU3B.4	Foreland Fields	HTL	HTL	MR		**N/A**	✓	✓	✓
		PU3B.5	Whitecliff Bay	NAI	NAI	NAI		**N/A**	✓	✓	✓
		PU3C.1	Culver Cliff and Red Cliff	NAI	NAI	NAI		**N/A**	✓	✓	✓
		PU3C.2	Yaverland and Eastern Yar Valley	HTL	HTL	HTL		**N/A**	✓	✓	✓
		PU3C.3	Sandown and Shanklin	HTL	HTL	HTL		**N/A**	✓	✓	✓
		PU3C.4	Luccombe	NAI	NAI	NAI		**N/A**	✓	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								frontage of Shanklin and Sandown needs to remain defended to protect the important coastal communities from tidal flooding and coastal erosion. The HTL policy may cause a loss of the sandy intertidal area through sea level rise but the subtidal clay exposures and the mudstone reefs should remain unaffected. In addition, the NAI policy intention for Luccombe should not affect the BQEs. The BQEs for this water body as a whole are not likely to be affected; hence it is **unlikely there will be deterioration in the Ecological Potential of the Isle of Wight East TraC water body as a result of the SMP2 policy**.				
PDZ4	Luccombe to Blackgang	**Isle of Wight East (Coastal)** **<u>Relevant Management Units:</u>** **MAN 4A** Dunnose to Bonchurch **MAN 4B (part)** St Lawrence Undercliff to Castlehaven	PU4A.1	Dunnose	NAI	NAI	NAI	The frontage from Luccombe to Castlehaven is a mixture of NAI and HTL. Where the policy is NAI the coastal cliffs will carry on eroding. However where the HTL policy is in place (in order to protect people and property etc) the cliffs will not evolve naturally. At Ventnor and Bonchurch coastal habitats here are already squeezed between town infrastructure and sea defences, with only small sections of cliff habitat remaining. The HTL policy will continue to prevent the natural erosion of the coastal cliff line and further exposure of the nearshore reefs. BQEs associated with the nearshore reefs should not be affected, but BQEs associated with the ever decreasing intertidal along this water body may be affected in the long term. As at Ventnor and Bonchurch, the policy of HTL at Castlehaven could affect the intertidal BQEs, however, this is a small section of coast and unlikely to have an overall significant effect, particularly since a MR policy will be reviewed for the third epoch if possible, which	**N/A**	✓	✓	✓
			PU4A.2	Ventnor & Bonchurch (Monk's Bay to Steephill Cove)	HTL	HTL	HTL		**N/A**	✓	✓	✓
			PU4B.1	St. Lawrence Undercliff	NAI	NAI	NAI		**N/A**	✓	✓	✓
			PU4B.2	Castlehaven	HTL	HTL	MR		**N/A**	✓	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								is when there would be most effects on the BQEs. **Overall, even though the SMP2 policy for PU4A.2 has the potential to affect the local BQEs it is unlikely to affect the coastal water body as a whole and therefore, there is unlikely to be any deterioration in the Ecological Potential of the Isle of Wight East TraC water body as a result of the SMP2 policy**. Furthermore, there is potential here for the frontages with NAI to encroach into the frontages with a hold the line policy as the cliffs erode and sea levels rise on either side of those frontages with maintained sea defences. There are two SPZs close to coast above Ventnor (PU4A.2) and Castlehaven (PU4B.2), which could be at risk of saline intrusion. However, since the SMP2 policies for these sections of coast are HTL thus preventing erosion of the cliff landward towards the SPZs, **the risk of SMP2 policies resulting in deterioration of the aquifer is low**.				
		Dorset / Hampshore (Coastal) **<u>Relevant Management Units:</u>** **MAN 4B (part)** ST. Cather	PU4B.3	St. Catherine's and Blackgang	NAI	NAI	NAI	This area of coastline comprises high coastal cliffs with rocky intertidal foreshore and subtidal rocky reefs at the foot of the cliffs. The intertidal and subtidal reefs provide for a diverse habitat, in particular for macroalgae, which provide food sources and shelter for fish. The frontage from St. Catherine's to Blackgang has a policy of NAI, which allows the coastal cliffs to carry on eroding naturally and the BQEs will not be adversely affected, **therefore maintaining contribution to Good Ecological Potential for the Dorset / Hampshire TraC water body**.	**N/A**	✓	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
PDZ5	**Blackgang to beginning of Freshwater Bay**	**Dorset / Hampshore (Coastal)** **Relevant Management Units:** **MAN 5** Central Chale Bay to Afton Down	PU5.1	Central Chale Bay to Afton Down	NAI	NAI	NAI	The intertidal area along this frontage is formed from landslide debris and exposed clay bedrock, and sandstone and chert boulders that provide a diverse range of intertidal habitats and are of high marine conservation interest. The subtidal harbours a range of rocky reef types, including sandstone, clay/mudstone, greensand and chalk bedrock, which support diverse red algal communities and kelp beds. There are also large ecologically important littoral sea caves in the chalk cliffs around Compton Chine that host rare algal species specific to this type of habitat. The policy of NAI will allow the cliffs to naturally evolve and the BQEs will not be adversely affected, **therefore maintaining contribution to Good Ecological Potential for the Dorset / Hampshire TraC water body**.	**N/A**	✓	✓	✓
PDZ6	**Freshwater Bay to Port la Salle**	**Dorset / Hampshore (Coastal)** **Relevant Management Units:** **MAN 6A (part)** Freshwater Bay to Needles	PU6A.1	Freshwater Bay	HTL	HTL	HTL	The coastline from Freshwater Bay and around the north side of the Needles includes an extensive tide-exposed chalk reef that supports a diverse range of species both in the intertidal and subtidal, whilst the cliffs above support ecologically important chalk plants (e.g. lowland heath and acid grasses) and invertebrates. The reefs are some of the most important subtidal chalk reefs in Britain, with the only known Chalk subtidal caves in the UK. As for other sections of coastline on the Isle of Wight this frontage is a mixture of NAI so allowing the cliffs to evolve and erode naturally and also HTL in order to protect communities and important infrastructure. Again the potential for the frontages	**N/A**	✓	✓	✓
			PU6A.2 (part)	Tennyson Down, Alum Bay and Headon Warren	NAI	NAI	NAI		**N/A**	✓	✓	✓

Policy Development Zone	Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
				2025	2055	2105		WFD1	WFD2	WFD3	WFD4
							that are allowed to erode to outflank those that are protected exists. A HTL policy at Freshwater Bay has the potential to affect some of the BQEs within the Dorset / Hampshire coastal water body such as invertebrates within the subtidal sediments and macroalgae on the subtidal reefs. However, the overall effect is unlikely to deteriorate the TraC water body as a whole, because it is such a small area that is defended, **therefore the SMP2 policy is unlikely to cause any changes to the Dorset / Hampshire TraC's present quality of Good Ecological Potential**.				
		Solent (Coastal) **<u>Relevant Management Units:</u>** **MAN 6A (part)** Needles to Alum Bay **MAN 6B** Totland to Norton **MAN 6C (part)** Norton Spit	PU6A.2 (part)	Tennyson Down, Alum Bay and Headon Warren	NAI	NAI	NAI	Where the HTL policy is in place for this PDZ within the Solent TraC (PU's 6B.1, 6B.3 and 6B.5) the already narrow tide-exposed reef will become more sub-tidal and not be replaced by new intertidal over time. This is really only a risk at Totland and Colwell, as at Fort Albert and Fort Victoria and Norton the aim is to allow the coastline to develop naturally in the long term once the life of the defences have exceeded. The BQEs could therefore be only adversely affected along Totland and Colwell in the medium to long term as the sea levels start to significantly rise and completely submerge any intertidal reefs. The overall policy along this frontage will result in several increasingly fragmented stretches of defences separated by lengths of rapidly retreating coastal cliffs. **This could result in the Ecological Potential of this TraC (Solent) water body from failing to meet Good Ecological Potential by 2027**.	**N/A**	✓	✓	✓
			PU6B.1	Totland and Colwell	HTL	HTL	HTL		**N/A**	**x**	✓	✓
			PU6B.2	Central Colwell Bay	NAI	NAI	NAI		**N/A**	✓	✓	✓
			PU6B.3	Fort Albert	HTL	HTL	NAI		**N/A**	**x**	✓	✓
			PU6B.4	Fort Victoria Country Park	NAI	NAI	NAI		**N/A**	✓	✓	✓
			PU6B.5	Fort Victoria and Norton	HTL	NAI	NAI		**N/A**	✓	✓	✓
			PU6C.1	Norton Spit (part)	HTL	HTL	HTL		**N/A**	✓	✓	✓

Policy Development Zone	Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
				2025	2055	2105		WFD1	WFD2	WFD3	WFD4
	Western Yar (Transitional) **<u>Relevant Management Units:</u>** **MAN 6C (part)** Norton Spit to Alum Bay **MAN 6B** Totland to Norton **MAN 6C (part)** Norton Spit to Port la Salle	PU6C.1	Norton Spit (part)	HTL	HTL	HTL	The HTL policy for all three epochs at Norton Spit will ensure that the nature of the sheltered nature of the estuary is maintained, thus protecting the BQEs landward of the spit (i.e. macrophytes). Seaward of the spit is a sandy single intertidal area, with a vegetated shingle upper foreshore, which is being maintained by the groynes themselves.	N/A	✓	✓	✓
		PU6C.2	Western Yar Estuary - west	NAI	NAI	NAI	The Westen Yar is a wide-bottomed valley type estuary with relatively steeply sloping margins which has extensive saltmarsh (angiosperm) and mudflats. The mouth of the estuary is protected by Norton Spit, which is presently defended from overtopping and migrating landwards by wooden groynes. There are three FWBs leading into the estuary, the Western Yar, Thorley Brook and Barnfields Stream. There is a combination of HTL policy to protect the community of Yarmouth and its important infrastructure links with the mainland and NAI policy to allow the estuary to develop more naturally. The saltmarsh habitats within the estuary are likely to be sensitive to future climate change and sea-level rise unless vertical accretion can compensate. Where there are HTL policies within the estuary, i.e. at the Causeway and around Yarmouth to Port la Salle there will be coastal squeeze as the sea levels rise, which will affect the BQEs of the Western Yar TraC (i.e. benthic invertebrates, angiosperms and fish, since natural migration inland will not be able to occur. The HTL policy will however ensure that **the environmental objectives of the Western Yar estuary are not compromised**, since with sea level rise the lower and upper levels of the FWB would be flooded right back	N/A	✓	✓	✓
		PU6C.3	The Causeway	HTL	HTL	HTL		N/A	x	✓	✓
		PU6C.4	Western Yar Estuary - east	NAI	NAI	NAI		N/A	✓	✓	✓
		PU6C.5	Thorley Brook and Barnfields Stream	HTL	NAI	NAI		N/A	✓	x	✓
		PU6C.6	Yarmouth to Port la Salle	HTL	HTL	HTL		N/A	x	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								to the source at Freshwater Bay. The policy of NAI at Thorley Brook and Barnfields Stream (PU6C.5) in the second and third epochs will allow saline intrusion up these FWBs rather than to continue to unsustainably hold tidal flooding by the defences that are presently there. The HTL policy in the first epoch will be to allow the gradual management of the flood levels so that there is an adaptation of habitats is gradual over time. Even though there will be saline intrusion into previously freshwater habitats of the FWBs, the SMP2 will however help in attaining some of the environmental objectives of the Thorley Brook and Barnfields Stream FWBs, in particular the former; these include 're-opening existing culverts' and 'preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone'. Overall, the SMP2 policies will have an affect on some of the BQEs within the Western Yar TraC, though with the NAI policy at Thorley Brook and Barnfields Stream the estuary will be able **to adapt more naturally with climate change and help to attain the environmental objectives of the Western Yar TraC to ensure its meets surface water Good Ecological Potential by 2027**.				
PDZ7	**Port la Salle to west of Gurnard**	**Solent (Coastal)** **<u>Relevant Management Units:</u>**	PU7.1	Bouldnor Copse and Hamstead	NAI	NAI	NAI	The coastline from Bouldnor Copse to Hamstead comprises geologically important soft cliffs with the intertidal area littered with debris from semi-circular landslides and exposed clay bedrock. The NAI policy will ensure that coastal processes continue to erode these cliffs and supplying sediment downdrift, so as to maintain morphological features elsewhere within the coastal water body, such as the spits at the mouth of Newtown	**N/A**	✓	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
		MAN 7 (part)						Estuary. **Therefore, the SMP2 policy will not therefore cause any detrimental changes to the Solent TraC that would result in it not meeting Good Ecological Potential 2015.**				
		Newtown River (Transitional) **<u>Relevant Management Units:</u>** **MAN 7 (part)**	PU7.2	Newtown Estuary	NAI	NAI	NAI	Newtown Harbour comprises a number of tidal creeks leading to a number of freshwater creeks and streams (though these will not be affected by changes in 1 in 1000 year flood zone from the present to 2110). The estuary area includes extensive areas of estuarine mudflat, saltmarsh, coastal grazing marsh and saline lagoons that support internationally important overwintering and breeding bird species. The BQEs within the estuary include macroalgae, benthic invertebrates, angiosperms (saltmarsh, coastal grazing marsh and seagrass beds) and fish. The policy of NAI for the entirety of the estuary will ensure that **the SMP policy, neither deteriorates the Moderate Ecological Status of the Newtown Estuary TraC, nor will it cause failure to meet Good Ecological Status in 2027.**	**N/A**	✓	✓	✓
		Solent (Coastal) **<u>Relevant Management Units:</u>** **MAN 7 (part)**	PU7.3	Thorness Bay and southern Gurnard Bay	NAI	NAI	NAI	Thorness Bay and southern Gurnard Bay comprise considerable areas of soft maritime cliffs with large expanses of intertidal sand and shingle interspersed with rocky outcrops or ledges composed of Bembridge Limestone. There are also two small areas of brackish marsh (one known as Thorness Marshes), which are at the coastal margins of Little Thorness Stream and Great Thorness Stream, both FWBs; the former of Moderate Ecological Status and the latter of Moderate Ecological Potential. The policy of NAI will ensure natural coastal processes continue to erode the coastline, supplying both important sediment to the	**N/A**	✓	✓	✓

Policy Development Zone		Water Body and Relevant Management Units	Policy Unit		Policy Plan			WFD Assessment of Deterioration	Environmental Objectives met?			
					2025	2055	2105		WFD1	WFD2	WFD3	WFD4
								sandy foreshores and exposing further ledges for macroalgae and their associated communties to colonise in pace with sea level rise. As sea levels rise, the extent of saline intrusion up the FWBs will increase, though at a gradual rate so that BQEs can adapt over time. **Therefore, the SMP2 policy will not cause any detrimental changes to the Solent TraC that would result in it not meeting Good Ecological Potential 2015. In addition, the environmental objectives of the two FWBs will not be prevented as a result of the NAI policy.**				

Environmental Objective WFD3

J3.3.5 There are no freshwater lakes within the SMP2 area, though there are a number of rivers that lie within the 1 in 1000 year zone. The saline intrusion to these rivers will increase over the next 100 years as sea levels rise and tidal flooding is able to extend further upstream. There are two PDZs that have the potential to fail to meet Environmental Objective WFD3 (no changes which permanently prevent or compromise the Environmental Objectives being met in other water bodies). The first is in PDZ one, where there are two FWBs (Dodnor Creek and Alverstone Stream) that flow into the Medina Estuary, though only the environmental objectives of Dodnor Creek are likely to be affected by the NAI policy. Dodnor Creek is on the west bank and is protected by council maintained defences and a sluice system. The policy of NAI will allow the Dodnor Creek to be restored to the natural tidal state before the defences and sluices were in place, enabling greatly improved passage of migratory fish, though the freshwater BQEs (macrophytes) will be affected in the short term until the system adapts to brackish environment in the lower reaches.

J3.3.6 The second PDZ that will affect FWBs is within the Western Yar Estuary (PDZ6), where there is currently a sluice at Thorley Brook, which retains upstream freshwater levels. The SMP2 policy of HTL in the first epoch, followed by NAI in the second and third epochs means managing the gradual saline intrusion of the existing sluice system, which would allow the natural realignment of the channel, and result in habitat creation (e.g. intertidal sand and mud flats and saltmarsh), though significant habitat loss of freshwater BQEs. This will result in permanent change to Thorley Brook and Barnsfield Stream, however it would be restoring the Western Yar estuary and the lower reaches of these FWBs to the natural tidal state before the defence at Yarmouth Mill was in place. It would also enable greatly improved passage for migrating fish, and therefore will facilitate the Environmental Objectives for the Western Yar transitional water body to be met.

Environmental Objective WFD4

J3.3.7 SMP2 policies for all seven PDZs meet Environmental Objective WFD4 (no changes that will cause failure to meet good groundwater status or result in a deterioration of groundwater status). All four of the Ground Water Bodies (GWBs) on the Isle of Wight have been classified as at Good Status and there is no current evidence of saline intrusion to groundwater bodies. Any abstractions within these groundwater bodies are located a significant distance from the coast which, together with the seaward direction of groundwater flow, means that the risk of deterioration in status due to SMP policy is considered to be low. The only GWB that has Special Protection Zones close to the coast is within PDZ 4 for the Southern Chalk Downs GWB, however, the SMP2 policy for the proximate seaward frontage is HTL, and therefore ensures that coastal erosion over the next 100 years will not result in saline intrusion from encroaching cliffs.

Water Framework Directive Summary Statements

J3.3.8 A water body by water body summary of achievement (or otherwise) of the Environmental Objectives for the SMP2 policies is shown in **Assessment Table 4**. This table indicates that completion of a Water Framework Directive Summary Statement is necessary for five of the water bodies. These Summary Statements can be found in **Tables 5a** to **5e**.

Assessment Table 4 **Summary of achievement of WFD Environmental Objectives and RBMP Mitigation Measures for each water body in the Isle of Wight SMP2 area (colour shading relates to the shaded water bodies in Table 3.1 and Figure 3.2)**

Water body (and relevant PDZ)	**Environmental Objectives met?**				**WFD Summary Statement required?**	**Achievement of Any South East RBMP Mitigation Measures?**	**Details on how the specific South East RBMP Mitigation Measures have been attained**
	WFD1	**WFD2**	**WFD3**	**WFD4**			
Solent (coastal) (PDZs 1, 2, 3, 6 & 7)	N/A	**x** (PDZ 2, PDZ 6)	✓	✓	**Yes** – Environmental Objective WFD2 may not be met in PDZs 2 and 6 under SMP2 policies.	**Yes (partly)** – there were three relevant mitigation measures for this water body. These were partly attained at some scale.	• **Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution** - Lane End (**PU3B.2**) near Bembridge. HTL for the short to medium with the view to gradually reduce the influence of hard defences and implement soft engineering solutions to protect the landward assets. • **Managed realignment of flood defence -** not wholly incorporated but NAI at Gurnard Luck (**PU1A.1**) will result in the flooding the lower reaches of small valley, thereby creating mudflat and saltmarsh habitats. • **Preserving and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone -**. Gurnard Luck (**PU1A.1**) will result in the flooding the lower reaches of small valley, thereby enhancing the ecological value of mudflat (benthic invertebrates) and saltmarsh (angiosperm) habitats.
Medina (transitional) (PDZ 1)	N/A	**x** (PDZ 1)	**x** (PDZ 1)	✓	**Yes** – Environmental Objectives WFD2 and WFD3 may not be met in PDZ1 under SMP2 policies.	There were no relevant measures to the SMP2.	N/A
Wootton Creek (transitional) (PDZ 2)	N/A	**x** (PDZ 2)	✓	✓	**Yes** – Environmental Objective WFD2 may not be met in PDZ2	**Yes (partly)** - Two out of the three relevant mitigation	• **Managed realignment of defences** - MR of the sluices at Wootton Bridge with the Old Mill Pond (**PU2B.3**). This policy will allow saline intrusion further up the creek into

Water body (and relevant PDZ)	**Environmental Objectives met?**				**WFD Summary Statement required?**	**Achievement of Any South East RBMP Mitigation Measures?**	**Details on how the specific South East RBMP Mitigation Measures have been attained**
	WFD1	**WFD2**	**WFD3**	**WFD4**			
					under SMP2 policies.	measures for this water body have been attained by the revision in SMP policy.	the Old Mill Pond, thus enhancing the existing poor quality mudflats and saltmarsh habitats (benthic invertebrate, saltmarsh and fish BQEs) by allowing regular tidal inundation. • **Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone** - MR polic at Wootton Bridge with the Old Mill Pond (**PU2B.3**). • **Removal of hard bank reinforcement / revetment, or replacement with soft engineering solution** – Not considered within the SMP2. Specific mitigation measure for implementation in individual schemes resulting from SMP2 policies.
Eastern Yar (transitional) (PDZ 3)	N/A	**x** (PDZ 3)	✓	✓	**Yes** – Environmental Objectives WFD2 and WFD3 may not be met in PDZ2 under SMP2 policies.	**Yes (partly)** - Only two out of the six relevant mitigation measures for this water body were partly attained.	• **Changes to beach control** – MR of The Duver in the 3rd epoch (**PU3A.2**) will allow more natural functioning of the spit and sand dunes. • **Retain marginal aquatic and riparian habitats (channel alteration)** – not considered. • **Operational and structural changes to locks, sluices, weirs, beach control, etc.** – Considered for the MR of Embankment Road (**PU3A.4**) but was not implemented (refer to Assessment Table 5d). • **Structures or other mechanisms in place and managed to enable fish to access waters upstream and downstream of the impounding works** - the

Water body (and relevant PDZ)	Environmental Objectives met?				WFD Summary Statement required?	Achievement of Any South East RBMP Mitigation Measures?	Details on how the specific South East RBMP Mitigation Measures have been attained
	WFD1	WFD2	WFD3	WFD4			
							culverts under Embankment Road were a consideration but it was not practicable. . • **Re-opening existing culverts** – the culverts under Embankment Road were a consideration but it was not practicable . • **Remove obsolete structure** – not considered but must be considered when implementing individual schemes resulting from SMP2 policies.
Old Mill Ponds	N/A	✓	✓	✓	**No** - not necessary as delivery of Environmental Objectives is likely to be supported by the proposed SMP policies.	**No** - There are two relevant mitigation measures for this water body. Neither has been implemented within the SMP2 policies.	• **Operational and structural changes to locks, sluices, weirs, beach control, etc.** – the causeway will continue to be defended, which will retain the Old Mill Ponds as they are at present. No plan to change the sluices or weirs. When the defences need to be maintained at the end of the 1st epoch the project level must consider this mitigation measure to ensure sufficient fish can pass through into the Old Mill Ponds. • **Remove obsolete structures** – must be considered when old defences are maintained.
Bembridge Harbour Lagoon (transitional) (PDZ 3)	N/A	✓	✓	✓	**No** - not necessary as delivery of Environmental Objectives is likely to be supported by the proposed SMP policies.	There were no relevant measures to the SMP2 for this water body.	N/A

Water body (and relevant PDZ)	**Environmental Objectives met?**				**WFD Summary Statement required?**	**Achievement of Any South East RBMP Mitigation Measures?**	**Details on how the specific South East RBMP Mitigation Measures have been attained**
	WFD1	**WFD2**	**WFD3**	**WFD4**			
Isle of Wight East (coastal) (PDZs 3 & 4)	N/A	✓	✓	✓	**No** - not necessary as delivery of Environmental Objectives is likely to be supported by the proposed SMP policies.	N/A - There are two relevant mitigation measures for this water body, though both are already in place.	• **Bank rehabilitation / reprofiling (already in place)**. • **Remove obsolete structure (already in place)**.
Dorset/Hampshire (coastal) (PDZs 4, 5 & 6)	N/A	✓	✓	✓	**No** - not necessary as delivery of Environmental Objectives is likely to be supported by the proposed SMP policies.	There were no relevant measures to the SMP2 for this water body.	N/A
Western Yar (transitional) (PDZ 6)	N/A	**x** (PDZ 3)	**x** (PDZ 6)	✓	**Yes** – Environmental Objectives WFD2 and WFD3 may not be met in PDZ2 under SMP2 policies.	There were no relevant measures to the SMP2 for this water body. **Yes** - There were however, three mitigation measures for Thorley Brook FWB (GB6060) that have been attained by the SMP2 policies.	• **Retain marginal aquatic and riparian habitats (channel alteration)** - MR/NAI policy at Thorley Brook and Barnfields Stream (**PU6C.5**) will result in a more natural functioning riparian system, particularly in the transition between the freshwater aspects of these two small rivers and the brackish nature of the Eastern Yar estuary. • **Preserve, and where possible, enhance ecological value of marginal aquatic habitat, banks and riparian zone** – MR/NAI policy at Thorley Brook and Barnfields Stream (**PU6C.5**) will result in the flooding the lower reaches of the valley floor of these two rivers, thereby enhancing the historic ecological value of marginal aquatic habitat, mainly of saltmarsh and grazing marsh

Water body (and relevant PDZ)	**Environmental Objectives met?**				**WFD Summary Statement required?**	**Achievement of Any South East RBMP Mitigation Measures?**	**Details on how the specific South East RBMP Mitigation Measures have been attained**
	WFD1	**WFD2**	**WFD3**	**WFD4**			
							(angiosperms) habitats. • **Re-opening existing culverts** - MR/NAI policy at Thorley Brook and Barnfields Stream (**PU6C.5**) will open up the existing culvert to allow the slow gradual saline inundation until the valley naturally floods without any culvert or defences in the medium to long term.
Newtown River (transitional) (PDZ 7)	N/A	✓	✓	✓	**No** - not necessary as delivery of Environmental Objectives is likely to be supported by the proposed SMP policies.	There were no relevant measures to the SMP2 for this water body.	N/A

Table 5a **WFD Summary Statement for the Solent coastal water body (colour shading relates to the shaded water bodies in Table 3.1 and Figure 3.2)**

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
Solent	Have all practicable mitigation measures been incorporated into the preferred SMP policies that affect this water body in order to mitigate the adverse impacts on the status of the water body? If not, then list mitigation measures that could be required.	**Mitigation measures incorporated into SMP policies:** • The proposed action in the South East RBMP for "managed realignment of flood defence" has been considered and though not incorporated into SMP2 policies along the length of this coastal water, the policy of NAI at Gurnard Luck (PU1A.1) in the epochs 2 and 3 will result in the flooding the lower reaches of small valley, thereby creating mudflat and saltmarsh habitats. This policy, however, needs to be investigated further, and therefore, the **Action Plan** in the final SMP document must include a specific programme of actions for investigations, monitoring and consultation to improve the predictions and feasibility of intertidal developments, whilst best maintaining the community of Gurnard. This policy would also be incorporating the proposed action of "preserving and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone" that is set out in the South East RBMP. • Another proposed action in the South East RBMP for this coastal water body is the "removal of hard bank reinforcement / revetment, or replacement with soft engineering solution". This option has been proposed for Lane End (PU3B.2) near Bembridge, which covers part of this coastal water body. The intention is to HTL for the short to medium with the view to gradually reduce the influence of hard defences and implement soft engineering solutions to protect the landward assets. • Finally, there are areas of coastline that are presently defended and the SMP2 policy is to defend until the end of the life of the defences, and from then on to allow natural coastal processes to prevail, which would therefore benefit the BQEs (such as macroalgae, benthic invertebrates and angiosperms). For example, this is the case at East Cowes Outer Esplanade and around into Osborne Bay (PDZs 1 and 2), along the Quarr and Binstead frontage (PDZ 3), and from Fort Victoria to Norton (PDZ 6). • Specific and generic mitigation measures for implementation of individual schemes resulting from SMP2 policies (i.e. how NAI will proceed at Dodnor Creek) will need to be considered when those schemes go through the planning process, and any environmental issues (including assessment under WFD) regarding the detail of scheme implementation will be dealt with at this time. This should include consideration of any suitable measures in the RBMP that are relevant to individual schemes (e.g. improvements to fish passage, increasing in-channel morphological diversity, use of soft engineering solutions etc). The Action Plan in the final SMP document must include a requirement for all schemes resulting from SMP2 policies to consider those mitigation measures listed in the South East RBMP Programme of Measures.
	Can it be shown that the reasons for selecting the preferred SMP policies are	The policy of maintaining the defences (i.e. HTL) at Fishbourne, Seagrove Bay, Totland and Colwell Bay, and Fort Albert are required to preserve the integrity of residential property and infrastructure (ferry and road), which

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
	reasons of overriding public interest (ROPI) and/or the benefits to the environment and to society of achieving the Environmental Objectives are outweighed by the benefits of the preferred SMP policies to human health, to the maintenance of health and safety or to sustainable development?	are reasons of overriding public interest and benefits. Refer to the 'Policy Statements' for further detail on the economic viability (cost/benefit analysis) and sustainability of the preferred SMP policies can be found in **Appendix H** (Economics Appraisal / Sensitivity Testing) **of this SMP2 document**.
	Have other significantly better options for the SMP policies been considered? Can it be demonstrated that those better environmental policy options which were discounted were done so on the grounds of being either technically unfeasible or disproportionately costly?	There are no significantly better environmental policy options available, since policies of no active intervention or managed realignment along the frontages at Fishbourne, Seagrove Bay, Totland and Colwell Bay and Fort Albert would result in the loss of the communities from coastal erosion rather than coastal flooding, as well as the nationally important transport link to the mainland. Advancing the line is unrealistic, unnecessary and it would be working against the natural processes at work in these areas, thus resulting in further intertidal loss (i.e. rocky shores and mudflats). As part of the SMP process various policy packages were developed for each PDZ and were fully appraised against SMP Objectives (which includes an objective on adaptation through supporting and enhancing nature conservation value of the Medina). Further detail on the Policy Development and Appraisal can be found in **Appendix E** and the Preferred Policy Appraisal can be found in **Appendix G of this SMP2 document**.
	Can it be demonstrated that the preferred SMP policies do not permanently exclude or compromise the achievement of the objectives of the Directive in water bodies within the same River Basin District that are outside of the SMP2 area?	The Environment Agency Flood Map application and Groundwater maps have been consulted to check for landward freshwater and groundwater bodies that potentially could be impacted by SMP2 policies. It is considered unlikely that any groundwater bodies will be impacted as a result of the SMP2 policies as there is no current evidence of saline intrusion (see **Assessment Table 3** and **Section J3.3**). There are no SMP2 policies within this water body that have the potential to affect landward FWBs. SMP2 policies for PDZs in the adjacent TraC water bodies (Isle of Wight East, Dorset / Hampshire, Western Yar, Newtown River, Bembridge Harbour Lagoon, Eastern Yar, Medina and Wootton Creek) have also been assessed within this report for potential to cause deterioration in Ecological Status / Potential.
	Can it be shown that there are no other over-riding issues that should be considered (e.g. designated sites, recommendations of the Appropriate	This water body includes part of the Solent Maritime SAC and Solent and Southampton SPA and Ramsar sites and Ryde Sands and Wootton Creek SSSI, and several classes of UKBAP habitat (in particular, mudflats and saltmarsh). The intent of the SMP2 policy within PDZs 2 and 6 within this water body is to defend the integrity the Fishbourne ferry link, Ryde and the surrounding communities, and Totland and Colwell Bay, whilst allowing

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
	Assessment)?	the coastline to develop naturally where there are high nature conservation interests or it is not economically feasible to maintain defences. The SMP2 policies have the potential to result in some degree of losses, and only marginal gains, of designated habitat and this has been assessed within the Habitats Regulations Assessment in **Appendix I of this SMP2**.

Table 5b WFD Summary Statement for the Medina transitional water body (colour shading relates to the shaded water bodies in Table 3.1 and Figure 3.2)

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
Medina	Have all practicable mitigation measures been incorporated into the preferred SMP policies that affect this water body in order to mitigate the adverse impacts on the status of the water body? If not, then list mitigation measures that could be required.	**Mitigation measures incorporated into SMP policies:** • More knowledge is needed to confirm the likelihood of the possible loss of mudflat and saltmarsh habitat in PDZ1. Therefore, the **Action Plan in the final SMP document** will include a specific programme of actions for monitoring, consultation and studies to improve predictions of intertidal developments and understanding of the impact of loss of foreshore from flood defence on habitats. The increased knowledge will inform the timing, location and extent of possible realignments to optimise defence sustainability and to compensate for the expected deterioration of intertidal habitats. • The proposed action in the South East River Basin Management Plan (RBMP) for "managed realignment of flood defence" needs to be investigated further within the Medina Estuary, based on the findings of the possible loss of mudflat and saltmarsh (for example, a possible site for MR could be south of the sewage works on the eastern bank to allow the widening of the estuary). However, the SMP has incorporated this objective to some degree by having a NAI policy for much of the central eastern and western banks of the Medina to allow natural migration of the estuary where there is room to do so (i.e. within the confinements of the natural topography of the valley). In particular, the SMP policy would result in the realignment of the mouth of Dodnor Creek, which is currently defended, though this would result in failing the environmental objectives of this FWB because of the resulting permanent change in morphology, even if it is back to its natural state. • A second proposed action in the South East RBMP for "removal of hard bank reinforcement / revetment, or replacement with soft engineering solutions" should be considered for where the SMP policy is NAI, so that when defences have exceeded their life that they are removed rather than left to deteriorate further and continue to impede natural processes. • Specific mitigation measures for implementation of individual schemes resulting from SMP2 policies (i.e. how NAI will proceed at Dodnor Creek) must be considered when those schemes go through the planning

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
		process, and any environmental issues (including assessment under WFD) regarding the detail of scheme implementation will be dealt with at this time. This must include consideration of the suitable measures in the South East RBMP that are relevant to individual schemes (e.g. improvements to fish passage, increasing in-channel morphological diversity, use of soft engineering solutions etc; refer to Assessment Table 2 for the applicable measures for this water body). The **Action Plan in the final SMP document** must include a requirement for all schemes resulting from SMP2 policies to consider those mitigation measures listed in the South East RBMP Programme of Measures.
	Can it be shown that the reasons for selecting the preferred SMP policies are reasons of overriding public interest (ROPI) and/or the benefits to the environment and to society of achieving the Environmental Objectives are outweighed by the benefits of the preferred SMP policies to human health, to the maintenance of health and safety or to sustainable development?	The policy of maintaining the defences around Cowes, East Cowes and Newport Harbour is required to protect important communities, nationally important infrastructure (e.g. ferry link with the mainland, historic landfill sites), commercial assets (e.g. West Medina Mills Wharf), and recreational (e.g. Island Harbour Marina, Cowes Yacht Club) and heritage assets. This is necessary to ensure the continued role of these two communities at the either end of the Medina Estuary. Refer to the 'Policy Statements' for further detail on the economic viability (cost/benefit analysis) and sustainability of the preferred SMP policies can be found in **Appendix H** (Economics Appraisal / Sensitivity Testing) **of this SMP2 document**.
	Have other significantly better options for the SMP policies been considered? Can it be demonstrated that those better environmental policy options which were discounted were done so on the grounds of being either technically unfeasible or disproportionately costly?	There are no significantly better environmental policy options available – NAI would immediately cease to defend Cowes and East Cowes, particularly as the present defences need to be enhanced to protect the communities from any future coastal flooding. This would also be case for Newport, which is the commercial centre for the Isle of Wight. ATL at the entrance to the estuary is a possibility and was considered. However, this is technically difficult, would require increasing flood defence management, cause the loss intertidal and subtidal habitat and would potentially change the hydrodynamics and morphology of the Medina Estuary, thus affecting the BQEs to a greater degree than a HTL policy. As part of the SMP process various policy packages were developed for each PDZ and were fully appraised against SMP Objectives (which includes an objective on adaptation through supporting and enhancing nature conservation value of the Medina). Further detail on the Policy Development and Appraisal can be found in **Appendix E** and the Preferred Policy Appraisal can be found in **Appendix G of this SMP2 document**.
	Can it be demonstrated that the preferred SMP policies do not permanently exclude or compromise the achievement of the objectives of the Directive in water bodies	The Environment Agency Flood Map application and Groundwater maps have been consulted to check for landward freshwater and groundwater bodies that potentially could be impacted by SMP2 policies. It is considered unlikely that any groundwater bodies will be impacted as a result of the SMP2 policies as there is no current evidence of saline intrusion (see **Assessment Table 3** and **Sections J3.1** and **J3.3**). There is the

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
	within the same River Basin District that are outside of the SMP2 area?	potential for impacts on Dodnor Creek, a freshwater creek, if a policy of NAI is implemented. However, the mitigation measures documented above should help to minimise any impacts on these water bodies, and by allowing the opening up of the entrance of this FWB to the estuary it is reverting to a more natural and sustainable environment. There will be no effect on the River Medina FWB, since the HTL policy at Newport Harbour will ensure that saline intrusion further upstream does not occur, however any maintenance works to these structures around Newport Harbour, including any sluices must be done so in accordance with the South East RBMP mitigation measures to ensure Good Ecological Potential can be attained by 2027. SMP2 policies for PDZs in the adjacent TraC water body (Solent) have also been assessed within this report for potential to cause deterioration in Ecological Status / Potential.
	Can it be shown that there are no other over-riding issues that should be considered (e.g. designated sites, recommendations of the Appropriate Assessment)?	This water body includes part of the Solent Maritime SAC, Solent and Southampton Water SPA and Ramsar site and the Medina Estuary SSSI and mudflats that are a UK Biodiversity Action Plan habitat. The intent of the SMP2 policy is to allow the estuary to develop naturally, whilst defending the integrity of nationally and regionally important communities, infrastructure and commercial assets. The SMP2 policies have the potential to result in some degree of losses, and only marginal gains, of designated habitat and this has been assessed within the Habitats Regulations Assessment in **Appendix I of this SMP2**.

Table 5c **WFD Summary Statement for the Wootton Creek transitional water body (colour shading relates to the shaded water bodies in Table 3.1 and Figure 3.2)**

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
Wootton Creek	Have all practicable mitigation measures been incorporated into the preferred SMP policies that affect this water body in order to mitigate the adverse impacts on the status of the water body? If not, then list mitigation measures that could be required.	**Mitigation measures incorporated into SMP policies:** • The proposed action in the South East RBMP for "managed realignment of flood defence" has been considered and incorporated into SMP2 policies, with the MR of the sluices at Wootton Bridge with the Old Mill Pond (PU2B.3). This policy would allow saline intrusion further up the creek into the Old Mill Pond, thus enhancing the existing poor quality mudflats and saltmarsh habitats by allowing regular tidal inundation. This policy, however, needs to be investigated further, and therefore, the **Action Plan in the final SMP document** will include a specific programme of actions for modelling studies, monitoring and consultation to improve the predictions of intertidal developments. This policy will also be incorporating the proposed action of "preserving and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone" that is set out in the South East RBMP. • The third proposed action in the South East RBMP for this transitional water body is the "removal of hard

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
		bank reinforcement / revetment, or replacement with soft engineering solution". This option has not been considered within the SMP2 but rather must be a specific mitigation measure for implementation, where possible, of individual schemes resulting from SMP2 policies (i.e. for the community of Wootton Bridge), and must be considered when those schemes go through the planning process. Any environmental issues (including assessment under WFD) regarding the detail of scheme implementation will be dealt with at this time. The **Action Plan in the final SMP document** must include a requirement for all schemes resulting from SMP2 policies to consider those mitigation measures listed in the South East RBMP Programme of Measures.
	Can it be shown that the reasons for selecting the preferred SMP policies are reasons of overriding public interest (ROPI) and/or the benefits to the environment and to society of achieving the Environmental Objectives are outweighed by the benefits of the preferred SMP policies to human health, to the maintenance of health and safety or to sustainable development?	The policy of maintaining the defences around Wootton Bridge is required to protect the community and assets of Wootton. The policy of HTL is also necessary to protect the transport link (A road) between Newport, East Cowes and Ryde. Refer to the 'Policy Statements' for further detail on the economic viability (cost/benefit analysis) and sustainability of the preferred SMP policies can be found in **Appendix H** (Economics Appraisal / Sensitivity Testing) **of this SMP2 document**.
	Have other significantly better options for the SMP policies been considered? Can it be demonstrated that those better environmental policy options which were discounted were done so on the grounds of being either technically unfeasible or disproportionately costly?	There are no significantly better environmental policy options available – NAI would cease to defend the village of Wootton. Advancing the line is unrealistic, unnecessary and it would be working against the natural processes at work along estuary, thus resulting in further intertidal habitat loss. As part of the SMP process various policy packages were developed for each PDZ and were fully appraised against SMP Objectives (which includes an objective on adaptation through supporting and enhancing nature conservation value of the Medina). Further detail on the Policy Development and Appraisal can be found in **Appendix E** and the Preferred Policy Appraisal can be found in **Appendix G of this SMP2 document**.
	Can it be demonstrated that the preferred SMP policies do not permanently exclude or compromise the achievement of the objectives of the Directive in water bodies within the same River Basin District that are outside of the SMP2 area?	The Environment Agency Flood Map application, Groundwater maps and the South East RBMP have been consulted to check for landward freshwater and groundwater bodies that potentially could be impacted by SMP2 policies. It is considered unlikely that the Solent Group GWB will be impacted as a result of the SMP2 policies as there is no current evidence of saline intrusion (see **Assessment Table 3** and **Section J3.3**). There is also no potential for impacts on Blackbridge Brook, the freshwater water body that flows into the Old Mill Pond, since the Old Mill pond currently experiences some degree of saline intrusion, since there are saltmarsh habitats extending

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
		up beyond Firestone Copse (part of Briddlesford Copse SAC and SSSI), which is beyond the current and future (2110) 1 in 1000 year flood zone. SMP2 policies for PDZs in the adjacent TraC water body (Solent) have also been assessed within this report for potential to cause deterioration in Ecological Status / Potential.
	Can it be shown that there are no other over-riding issues that should be considered (e.g. designated sites, recommendations of the Appropriate Assessment)?	This water body includes part of the Solent and Southampton Water SPA and Ramsar site, Ryde Sands and Wootton Creek SSSI, The Old Mill Pond Wootton Site of Important Nature Conservation (SINC), and adjacent to the Briddlesford Copse SAC and Briddlesford Copses SSSI, as well as several classes of UKBAP habitat (in particular mudflats). The intent of the SMP2 policy is to allow the estuary to develop as naturally as possible, whilst defending the integrity of Wootton village. There will be mudflat habitat lost due to coastal squeeze, as sea levels rise where there are defences protecting the community of Wootton. This habitat loss would need to be compensated for by securing habitat through the Southern Regional Habitat Creation Programme (RHCP). The habitat improvement and gains within the Old Mill Pond could contribute to the compensation requirements if approved by Natural England. This has been assessed within the Habitats Regulations Assessment in **Appendix I of this SMP2**.

Table 5d WFD Summary Statement for the Eastern Yar transitional water body (colour shading relates to the shaded water bodies in Table 3.1 and Figure 3.2)

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
Eastern Yar	Have all practicable mitigation measures been incorporated into the preferred SMP policies that affect this water body in order to mitigate the adverse impacts on the status of the water body? If not, then list mitigation measures that could be required.	**Mitigation measures incorporated into SMP policies:** • The only South East RBMP mitigation measure implemented within the SMP2 is the managed realignment of The Duver in the third epoch and the MR of Bembridge Point in the first epoch. This will allow the The Duver to naturally realign and evolve in response to change in the estuary and sea level rise in the long term, by eroding back and accreting sediments along the foreshore, and for Bembridge Point to erode back naturally in the short to medium term. This will allow the entrance to Bembridge Harbour to develop more naturally and ensure the continued accretion of sediments within the harbour. This action is in accordance with the proposed action in the South East RBMP of “changes to beach control”. • The proposed action in the South East RBMP for “operational and structural changes to locks, sluices, weirs” was considered during the SMP2 policy planning process and examined in detail through the Eastern Yar Flood and Erosion Management Strategy. However, there is no possibility within SMP2 to change the water level management of the Eastern Yar valley by such means, as this would cause the loss

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
		of a vast area (629 hectares) of internationally designated freshwater habitat. • Specific mitigation measures for the maintenance of individual schemes resulting from SMP2 policies (i.e. how HTL will proceed at Bembride Point) must be considered when those schemes go through the planning process, and any environmental issues (including assessment under WFD) regarding the detail of scheme implementation will be dealt with at this time. This must include consideration of any suitable measures in the RBMP that are relevant to individual schemes (e.g. use of soft engineering solutions, removal of obsolete structures, etc). The **Action Plan in the final SMP document** must include a requirement for all schemes resulting from SMP2 policies to consider those mitigation measures listed in the South East RBMP Programme of Measures, and which are listed in Assessment Tables 2 and 4.
	Can it be shown that the reasons for selecting the preferred SMP policies are reasons of overriding public interest (ROPI) and/or the benefits to the environment and to society of achieving the Environmental Objectives are outweighed by the benefits of the preferred SMP policies to human health, to the maintenance of health and safety or to sustainable development?	The policy of hold the line of existing defences within Bembridge Harbour in PDZ 3 is required to protect the communities at St Helens, maintain the brackish saltmarsh dominated habitat of the Old Mill Ponds (Transitional), access along Embankment Road to the community of Bembridge and to maintain the freshwater habitats of Brading Marshes that are of international importance for providing breeding, feeding and roosting for internationally important wildfowl and wetland birds. Furthermore, by holding the line at Embankment Road it prevents the tidal flooding of the middle and upper reaches of the Eastern Yar valley, which would have severe flooding implications for the communities of Brading and Sandown. Therefore, it is undoubtedly clear that the HTL policy has been selected for reasons of overriding public interest, as well as for the natural environment.
	Have other significantly better options for the SMP policies been considered? Can it be demonstrated that those better environmental policy options which were discounted were done so on the grounds of being either technically unfeasible or disproportionately costly?	There are no significantly better options available - as part of the SMP process various policy packages were developed for each PDZ and were fully appraised against SMP Objectives (which includes an objective on adaptation through supporting and enhancing nature conservation value of the Medina). Further detail on the Policy Development and Appraisal can be found in **Appendix E** and the Preferred Policy Appraisal can be found in **Appendix G of this SMP2 document**. Furthermore, the flood defence for the Eastern Yar valley has been studied in detail in the Eastern Yar Flood and Erosion Management Strategy. A managed realignment option may not be technically unfeasible and would certainly allow the valley to revert to a more natural and sustainable state, however, it would be disproportionately costly to provide both damage costs to flooded properties and to find compensation for 629 hectares of freshwater habitats.
	Can it be demonstrated that the preferred SMP policies do not permanently exclude or compromise the achievement of the	The Environment Agency Flood Map application, groundwater maps and the South East RBMP have been consulted to check for landward freshwater and groundwater bodies that could be impacted by the SMP2 policies. It is considered unlikely that any groundwater bodies (i.e. the Solent Group, Central Downs Chalk and Lower Greensand GWBs) will be impacted as a result of the SMP2 policies as there is no current evidence of

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
	objectives of the Directive in water bodies within the same River Basin District that are outside of the SMP2 area?	saline intrusion since they are designated as 'Good Status' (see **Assessment Table 3** and **Sections J3.1** and **J3.3**). The preferred policy of HTL ensures that the environmental objectives of the two FWBs (River Eastern Yar – GB5970 and GB6010) and transitional water body of Bembridge Harbour Lagoon (landward of Embankment Road) are maintained. The policy intention of HTL along Embankment Road is that the River Eastern Yar valley beyond the sluices at Bembridge Harbour (at the north-western end) will remain fresh water, and that the Old Mill Ponds and Bembridge Lagoons remain transitional (via the sluices at the south-western end). The likelihood of the river valley flooding from the sea will increase over the three epochs due to sea level rise and increased storminess. At present there is no specific policy within the River Eastern Yar water body that could lead directly to the possibility of saline intrusion into the river valley. However, this policy will need to be monitored to ensure that the valley remains freshwater landward of its freshwater sluice if its moderate ecological potential is not to deteriorate or its ability to gain Good Ecological Potential by 2027 is prevented. Decisions will need to be made over time regarding this FWB and whether the sluice can remain where it is and Embankment Road can be raised by 2030 (when it is predicted to be at risk of overtopping) or whether it will need to be moved further inland as roll back along this frontage continues as sea levels rise. SMP2 policies for PDZs in the adjacent TraC water bodies (Solent, Old Mill Pond, Bembridge Harbour Lagoons) have also been assessed within this report for potential to cause deterioration in Ecological Status / Potential.
	Can it be shown that there are no other over-riding issues that should be considered (e.g. designated sites, recommendations of the Appropriate Assessment)?	This water body includes part of the Solent and Southampton SPA and Ramsar site and Brading Marshes and St. Helen's Ledges SSSI, and several classes of UKBAP habitat. The intent of the SMP2 policy is to defend the integrity of the communities of St Helen's, Bembridge, Brading and Sandown, as well as transport links and very importantly the nature conservation value of the Brading Marshes landward of Bembridge Harbour. The losses and gains of designated habitat as a result of this policy are discussed in detail in the Habitats Regulations Assessment in **Appendix I of this SMP document**.

Table 5e **WFD Summary Statement for the Western Yar transitional water body (colour shading relates to the shaded water bodies in Table 3.1 and Figure 3.2)**

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
Western Yar	Have all practicable mitigation measures been incorporated into the preferred SMP policies that affect this water body in order	**Mitigation measures incorporated into SMP policies:** • There are no specific mitigation measures for this transitional water body within the South East RBMP. However, more knowledge is needed to confirm the likelihood of the possible loss of mudflat and saltmarsh habitat in PDZ6 as a result of the HTL policies at The Causeway and around Yarmouth, and the MR/NAI

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
	to mitigate the adverse impacts on the status of the water body? If not, then list mitigation measures that could be required.	combination policy at Thorley Brook and Barnfields Stream. Therefore, the **Action Plan in the final SMP document** will include a specific programme of actions for monitoring, consultation and studies to improve predictions of intertidal developments and understanding of the impact of loss and gain of intertidal foreshore on flood defence and habitats. The increased knowledge will inform the timing, location and extent of the saline intrusion up the lower reaches of Thorley Brook and Barnfields Stream and thus optimise defence sustainability and to compensate for the expected deterioration of intertidal habitats and loss of freshwater habitats. • Specific mitigation measures for the maintenance of individual schemes resulting from SMP2 policies will need to be considered when those schemes go through the planning process, and any environmental issues (including assessment under WFD) regarding the detail of scheme implementation will be dealt with at this time. This should include consideration of any suitable measures in the RBMP that are relevant to individual schemes (e.g. use of soft engineering solutions, removing obsolete structures, etc), even though there are no specific mitigation measures for this water body within the South East RBMP. The **Action Plan in the final SMP document** must include a requirement for all schemes resulting from SMP2 policies to consider those mitigation measures listed in the South East RBMP Programme of Measures.
	Can it be shown that the reasons for selecting the preferred SMP policies are reasons of overriding public interest (ROPI) and/or the benefits to the environment and to society of achieving the Environmental Objectives are outweighed by the benefits of the preferred SMP policies to human health, to the maintenance of health and safety or to sustainable development?	The policy of hold the line of existing defences at The Causeway in PDZ 6 is required to protect the communities and transport links (A and B roads) of Freshwater through to Freshwater Bay from tidal flooding, as well as the loss of Freshwater Marshes on the landward side of the defences. The hold the line policy for around Yarmouth to Port la Salle is to ensure that the community of Yarmouth and its nationally important transport link to the mainland are maintained, as well as protecting the tourism and heritage assets of the town. Therefore, it is undoubtedly clear that the HTL policy has been selected for reasons of overriding public interest, as well as for the natural environment. Within the Estuary, the plan supports the need for no active intervention and removal of existing defences to allow the limited areas of low lying land to flood, so as to address the impact of sea level rise on designated habitat - i.e. IROPI and benefits to sustainable development. Refer to the 'Policy Statements' for further detail on the economic viability (cost/benefit analysis) and sustainability of the preferred SMP policies can be found in **Appendix H** (Economics Appraisal / Sensitivity Testing) **of this SMP2 document**.
	Have other significantly better options for	There are no significantly better options available - as part of the SMP process various policy packages were developed for each PDZ and were fully appraised against SMP Objectives (which includes an objective on

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
	the SMP policies been considered? Can it be demonstrated that those better environmental policy options which were discounted were done so on the grounds of being either technically unfeasible or disproportionately costly?	adaptation through supporting and enhancing nature conservation value of the Medina). Further detail on the Policy Development and Appraisal can be found in **Appendix E** and the Preferred Policy Appraisal can be found in **Appendix G of this SMP2 document**. A managed realignment option may not be technically unfeasible at The Causeway and would allow the Western Yar valley to revert to a more natural and sustainable state. However, it would result in the creation of an island if there were to be a combined breach at Freshwater Bay. This option would however, be disproportionately costly to provide both damage costs to flooded properties, access to the newly formed island and to find compensation for the lost freshwater habitats at Freshwater Marshes. The MR/NAI policy combination at Thorley Brook and Barnfields Stream could feasibly remain a HTL policy. A HTL policy would be financially unsustainable in the long term, not to mention unsustainable from an environmental perspective. The costs of maintaining the defences against sea level rise to protect coastal grazing marsh and freshwater habitats from tidal flooding is likely to be higher than the compensation for flooding adjacent Grade 3 and 4 agricultural land and mitigation/compensation for the loss of intertidal habitats within the estuary as a result of HTL.
	Can it be demonstrated that the preferred SMP policies do not permanently exclude or compromise the achievement of the objectives of the Directive in water bodies within the same River Basin District that are outside of the SMP2 area?	The Environment Agency Flood Map application, groundwater maps and the South East RBMP have been consulted to check for landward freshwater and groundwater bodies that could be impacted by the SMP2 policies. It is considered unlikely that the Isle of Wight Solent Group GWB will be impacted as a result of the SMP2 policies as there is no current evidence of saline intrusion since they are designated as 'Good Status' (see **Assessment Table 3** and **Sections J3.1** and **J3.3**). The preferred policy of HTL ensures that the environmental objectives of the Western Yar (Headwater) are maintained. The policy combination of the SMP2 will have a permanent effect on Thorley Brook and Barnfields Stream FWBs, since they will result in saline intrusion in the lower reaches of the FWBs causing habitat loss of extensive areas of freshwater habitats. However, the policy combination does follow the mitigation measure stated in the South East RBMP of "re-opening existing culverts" particularly as the both these freshwater bodies have been designated heavily modified water bodies due to urbanisation and flood protection. SMP2 policies for PDZs in the adjacent TraC water body (Solent) have also been assessed within this report for potential to cause deterioration in Ecological Status / Potential.
	Can it be shown that there are no other	This water body includes part of the Solent and Southampton SPA and Ramsar site, Yar Estuary SSSI, and

Water body	WFD Summary Statement checklist	A brief description of decision making and reference to further documentation within the SMP
	over-riding issues that should be considered (e.g. designated sites, recommendations of the Appropriate Assessment)?	several classes of UKBAP habitat, importantly intertidal mudflat and saltmarsh. The intent of the SMP2 policy is to defend the integrity of the communities of Yarmouth and Freshwater, as well as transport links and importantly the natural and sustainable evolution of the Western Yar estuary. The losses and gains of designated habitat as a result of this policy are discussed in detail in the Habitats Regulations Assessment in **Appendix I of this SMP document**.

J4 DISCUSSIONS AND CONCLUSIONS

J4.1.1 The WFD assessment of the SMP2 policies for each PDZ (**Assessment Table 3**) and the water body summary of achievement of WFD Environmental Objectives (which includes what RBMP mitigation measures have been attained; **Assessment Table 4**) identified that there is potential that Environmental Objectives WFD2 and/or WFD3 may not be met in five of the TraC water bodies (Solent, Medina Estuary, Wootton Creek, Eastern Yar and Western Yar) within the Isle of Wight SMP2 area. As a result, Water Framework Directive Summary Statements have been completed for these five water bodies.

J4.1.2 However, it must be noted that this assessment is based upon a precautionary approach where it has been determined that there is potential for SMP2 policies to result in deterioration of Ecological Status or Potential of a water body and hence potential for failure to meet WFD Environmental Objectives. Therefore, a precautionary check has been made against the conditions outlined in Article 4.7 of the Directive. The Summary Statements outline the reasons behind selecting the preferred SMP2 policy and any mitigation measures that have been incorporated into policies (which are also shown in Assessment Table 4), or that must be included in the SMP2 Action Plan so that all strategy or schemes must incorporate the relevant South East RBMP mitigation measures to ensure that Good Ecological Potential/Status is achieved by either 2015 or 2027 at the latest.

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Glossary

Abbreviation	Term
AWB	Artificial Water Body
BQE	Biological Quality Element
DrWPA	Drinking Water Protected Area
EU	European Union
FWB	Freshwater Body
GEP	Good Ecological Potential
GWB	Groundwater Body
HMWB	Heavily Modified Water Body
HTL	Hold the Line
IROPI	Imperative Reasons of Overriding Public Interest
MAN	Management Unit
MR	Managed Realignment
NAI	No Active Intervention
PDZ	Policy Development Zone
PU	Policy Unit
RBC2	River Basin Characterisation 2
RBD	River Basin District
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SMP	Shoreline Management Plan
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Special Site of Scientific Interest
TAG	WFD UK Technical Advisory Group
TraC	Transitional and Coastal Water Bodies
UKBAP	United Kingdom Biodiversity Action Plan
UWWTD	Urban Waste Water Treatment Directive
WFD	Water Framework Directive
WPM	With Present Management

Isle of Wight Shoreline Management Plan 2:

Appendix J – Water Framework Directive Assessment (Supporting Annexes)

Isle of Wight Council

December 2010
Final Report
9V8288 / 03

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Project name	Isle of Wight Shoreline Management Plan 2
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Drafted by	Jacky Lavender and Dr Elizabeth Jolley	
Checked by	Dr Elizabeth Jolley	
Date/initials check	ECJ	05.07.10
Approved by	Dr Helen Dangerfield	
Date/initials approval	HRD	08.07.10

ANNEX J-I: SMP2 POLICY UNITS AND RELEVANT WATER BODIES

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Annex J-I Table 1 **The water body types within each of the Policy Development Zones (PDZs), Management Areas (MANs) and Policy Units (PUs) for the Isle of Wight SMP2. For each Policy Unit there preferred policy is given for each of the three epochs.**

SMP2 Policies				Preferred Policy			Water Body Type			
PDZ	**MAN**	**PU**	**Policy Name**	**2025**	**2055**	**2105**	**Coastal**	**Transitional**	**Freshwater**	**Groundwater**
1	**MAN1A**	**PU1A.1**	Gurnard Luck	HTL	NAI	NAI	Solent		Gurnard Luck	Solent Group
		PU1A.2	Gurnard Cliff	NAI	NAI	NAI	Solent			Solent Group
		PU1A.3	Gurnard to Cowes Parade	HTL	HTL	HTL	Solent			Solent Group
		PU1A.4	West Cowes	HTL	HTL	HTL	Solent	Medina		Solent Group
		PU1A.5	East Cowes	HTL	HTL	HTL	Solent	Medina		Solent Group
		PU1A.6	East Cowes Outer Esplanade	HTL	NAI	NAI	Solent			Solent Group
	MAN1B	**PU1B.1**	Central Medina NW	NAI	NAI	NAI	Solent	Medina		Solent Group
		PU1B.2	West Medina Mills	HTL	HTL	HTL	Solent	Medina		Solent Group
		PU1B.3	Central Medina SW	NAI	NAI	NAI	Solent	Medina	Dodnor Creek	Solent Group
		PU1B.4	Newport Harbour	HTL	HTL	HTL	Solent	Medina	Lukely Brook, River Medina	Solent Group

SMP2 Policies				Preferred Policy			Water Body Type			
PDZ	**MAN**	**PU**	**Policy Name**	**2025**	**2055**	**2105**	**Coastal**	**Transitional**	**Freshwater**	**Groundwater**
		PU1B.5	Central Medina East	NAI	NAI	NAI	Solent	Medina	Alverston Stream (Medina)	Solent Group
2	**MAN2A**	**PU2A.1**	Osborne Bay	NAI	NAI	NAI	Solent			Solent Group
		PU2A.2	Woodside	NAI	NAI	NAI	Solent			Solent Group
	MAN2B	**PU2B.1**	Western Wootton Creek	NAI	NAI	NAI	Solent	Wootton Creek		Solent Group
		PU2B.2	South-west Wootton Creek	HTL	HTL	HTL	Solent	Wootton Creek		Solent Group
		PU2B.3	Old Mill Pond	MR	MR	MR	Solent	Wootton Creek		Solent Group
		PU2B.4	South-east Wootton Creek	HTL	HTL	HTL	Solent	Wootton Creek		Solent Group
		PU2B.5	Eastern Wootton Creek	NAI	NAI	NAI	Solent	Wootton Creek		Solent Group
		PU2B.6	Fishbourne Ferry Terminal	HTL	HTL	HTL	Solent			Solent Group
		PU2B.7	Outer Eastern Creek	HTL	HTL	MR	Solent			Solent Group
		PU2B.8	Quarr and Binstead	NAI	NAI	NAI	Solent			Solent Group
	MAN2C	**PU2C.1**	Ryde	HTL	HTL	HTL	Solent			Solent Group
		PU2C.2	Appley and Puckpool	HTL	HTL	HTL	Solent			Solent Group

SMP2 Policies				Preferred Policy			Water Body Type			
PDZ	MAN	PU	Policy Name	2025	2055	2105	Coastal	Transitional	Freshwater	Groundwater
		PU2C.3	Springvale to Seaview	HTL	HTL	HTL	Solent			Solent Group
		PU2C.4	Seagrove Bay	HTL	HTL	HTL	Solent			Solent Group
3	**MAN3A**	**PU3A.1**	Priory Bay	NAI	NAI	NAI	Solent	Eastern Yar		Solent Group
		PU3A.2	St Helens Duver	HTL	HTL	MR	Solent	Eastern Yar		Solent Group
		PU3A.3	St Helens	HTL	HTL	HTL	Solent	Eastern Yar		Solent Group
		PU3A.4	Embankment Road	HTL	HTL	HTL	Solent	Eastern Yar, Bembridge Harbour Lagoon		Solent Group, Lower Greensand
		PU3A.5	Bembridge Point	NAI	NAI	NAI	Solent	Eastern Yar		Solent Group, Lower Greensand
	MAN3B	**PU3B.1**	Bembridge	NAI	NAI	NAI	Solent	Eastern Yar		Solent Group, Lower Greensand
		PU3B.2	Lane End	HTL	HTL	MR	Solent, Isle of Wight East			Solent Group, Lower Greensand
		PU3B.3	Foreland	MR	MR	MR	Isle of Wight East			Solent Group, Lower Greensand
		PU3B.4	Foreland Fields	HTL	HTL	MR	Isle of Wight East			Solent Group, Lower Greensand
		PU3B.5	Whitecliff Bay	NAI	NAI	NAI	Isle of Wight East			Solent Group, Lower Greensand

SMP2 Policies				Preferred Policy			Water Body Type			
PDZ	MAN	PU	Policy Name	2025	2055	2105	Coastal	Transitional	Freshwater	Groundwater
	MAN3C	PU3C.1	Culver Cliff & Red Cliff	NAI	NAI	NAI	Isle of Wight East			Solent Group, Lower Greensand, Central Downs Chalk
		PU3C.2	Yaverland and Eastern Yar Valley	HTL	HTL	HTL	Isle of Wight East			Lower Greensand
		PU3C.3	Sandown and Shanklin	HTL	HTL	HTL	Isle of Wight East			Lower Greensand
		PU3C.4	Luccombe	NAI	NAI	NAI	Isle of Wight East			Lower Greensand, Southern Downs Chalk
4	MAN4A	PU4A.1	Dunnose	NAI	NAI	NAI	Isle of Wight East			Lower Greensand, Southern Downs Chalk
		PU4A.2	Ventnor & Bonchurch	HTL	HTL	HTL	Isle of Wight East			Lower Greensand, Southern Downs Chalk
	MAN4B	PU4B.1	St Lawrence Undercliff	NAI	NAI	NAI	Isle of Wight East			Lower Greensand, Southern Downs Chalk
		PU4B.2	Castlehaven	HTL	HTL	MR	Isle of Wight East			Lower Greensand, Southern Downs Chalk
		PU4B.3	St Catherines and Blackgang	NAI	NAI	NAI	Isle of Wight East, Dorset/Hampshire			Lower Greensand, Southern Downs Chalk
5	MAN5	PU5.1	Central Chale Bay to Compton Bay	NAI	NAI	NAI	Dorset/Hampshire			Lower Greensand, Central Downs Chalk,
6	MAN6A	PU6A.1	Freshwater Bay	HTL	HTL	HTL	Dorset/Hampshire			Lower Greensand, Central Downs Chalk,
		PU6A.2	Tennyson Down, Alum Bay and Headon Warren	NAI	NAI	NAI	Dorset/Hampshire, Solent			Lower Greensand, Central Downs Chalk, Solent Group

SMP2 Policies				Preferred Policy			Water Body Type			
PDZ	**MAN**	**PU**	**Policy Name**	**2025**	**2055**	**2105**	**Coastal**	**Transitional**	**Freshwater**	**Groundwater**
	MAN6B	**PU6B.1**	Totland and Colwell	HTL	HTL	HTL	Solent			Solent Group
		PU6B.2	Central Colwell Bay	NAI	NAI	NAI	Solent			Solent Group
		PU6B.3	Fort Albert	HTL	HTL	NAI	Solent			Solent Group
		PU6B.4	Fort Victoria Country Park	NAI	NAI	NAI	Solent			Solent Group
		PU6B.5	Fort Victoria and Norton	HTL	NAI	NAI	Solent			Solent Group
	MAN6C	**PU6C.1**	Norton Spit	HTL	HTL	HTL	Solent	Western Yar		Solent Group
		PU6C.2	Western Yar Estuary - west	NAI	NAI	NAI	Solent	Western Yar		Solent Group
		PU6C.3	The Causeway	HTL	HTL	HTL	Solent	Western Yar	Western Yar	Solent Group
		PU6C.4	Western Yar Estuary - east	NAI	NAI	NAI	Solent	Western Yar		Solent Group
		PU6C.5	Thorley Brook and Barnfields Stream	HTL	MR	NAI	Solent	Western Yar	Thorley Brook, Barnsfield Stream	Solent Group
		PU6C.6	Yarmouth to Port la Salle	HTL	HTL	HTL	Solent	Western Yar	Thorley Brook	Solent Group
7	**MAN7**	**PU7.1**	Bouldnor Copse and Hamstead	NAI	NAI	NAI	Solent			Solent Group
		PU7.2	Newtown Estuary	NAI	NAI	NAI	Solent	Newtown River		Solent Group

SMP2 Policies				Preferred Policy			Water Body Type			
PDZ	MAN	PU	Policy Name	2025	2055	2105	Coastal	Transitional	Freshwater	Groundwater
		PU7.3	Thorness Bay and southern Gurnard Bay	NAI	NAI	NAI	Solent		Great Thorness Stream, Little Thorness Stream	Solent Group

ANNEX J-II: SCOPED OUT FRESHWATER BODIES

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Annex J-II Table 1 **Fresh Water Bodies (all are rivers – there are no lakes) within the Isle of Wight Catchment that were scoped out of the WFD Assessment based on the 1 in 1000 year flood zone for 2110.** All Isle of Wight FWBs water ID starts with GB10710100 – the last four digits of the ID are given below.

Freshwater Body Name (ID number)	Hydromorphological Designation	Ecological Quality	Comments
Scoped Out – Not at risk of saline intrusion from a 1 in 1000 year flood			
Ningwood Stream (GB6000)	Heavily Modified	Moderate Potential	Hydrology – high
Caul Bourne (GB6020)	Heavily Modified	Moderate Potential	High Ammonia, Copper and Zinc pollutants. Macro-invertebrates – good;
Brook Chine (GB5950)	Heavily Modified	Moderate Potential	No information available
Fleetlands Copse Stream (GB6050)	Heavily Modified	Moderate Potential	Hydrology – high
Brighstone Streams (GB5940)	Not Designated A/HMWB	Good Status	Macro-invertebrates – good; Morphology – good; Hydrology – not high.
Barton Manor Stream (GB6200)	Not Designated A/HMWB	Moderate Status	
Rodge Brook (GB6080)	Not Designated A/HMWB	Poor Status	Fish – poor; macro-invertebrates – moderate; Hydrology – high; Morphology – good. 3 measures
Blackbridge Brook (GB6100)	Heavily Modified	Moderate Potential	
Atherfield Stream (GB15920)	Heavily Modified	Moderate Potential	
Chilton Chine (GB5930)	Not Designated A/HMWB	Moderate Status	
Walpan Chine (GB5900)	Heavily Modified	Moderate Potential	
Monktonmend Brook (GB6120)	Heavily Modified	Moderate Potential	
Nettlestone Stream (GB6070)	Not Designated A/HMWB	Moderate Status	
Pondwell Stream (GB6090)	Heavily Modified	Moderate Potential	0 measures
Quarr Stream (GB6140)	Heavily Modified	Moderate Potential	0 measures
Binstead Stream (GB6130)	Heavily Modified	Moderate Potential	0 measures
Palmers Brook (GB6190)	Not Designated A/HMWB	Moderate Status	Macroinvertebrates – Good. Hydrology – high. Morphology – Good. *3 measures*
Shanklin Chine Stream (GB5910)	Heavily Modified	Moderate Potential	0 measures
Wroxall Stream (GB6210)	Not Designated A/HMWB	Moderate Status	1 measure

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ANNEX J-III: CSG REVIEW COMMENTS

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Annex J-III Table 1 CSG Review Comments June 2010

Client Steering Group and Interested Parties Document Review

Document Title:	Appendix J – WFD Assessment	Project No.:	IWSMP2	To be returned to:	jenny.jakeways@iow.gov.uk
General Comments:		Reviewer:	All	Organisation:	IWCAHES, Environment Agency,

Environment Agency: Need to be consistent with □itigation□ion of 'water body' as it changes within the report.
No comments from an RHCP perspective.
I have reviewed this from the WFD process point of view rather than from the technical perspective of the impact of the policies on the ecology for which I am not qualified. The procedures outlined in the WFD assessment guidance appear to have been followed. It is however clear from the series of Table 5s that the Section 6 Action Plan will be extremely important in specifying the requirement for all schemes resulting from SMP2 policies to consider those mitigation measures listed in the SE RBMP. As has been stated the assessment has been precautionary but it is important that WFD environmental objectives are properly considered at the detailed planning stage of individual schemes implementing the SMP2 policies.

In addition I have concerns about how the Mitigation Measures identified in the River Basin Plan have been dealt with in this document. I would like them included early in the document (Assessment Table 2- see attached) and then discussed in Assessment Table 5. I am disappointed with the summary statement in tables 5 "The Action Plan in the final SMP document should include a requirement for all scheme resulting from SMP2 policies to consider those mitigation measures listed in the South East RBMP Programme of Measures". I thought this was the purpose of the Appendix J document.

Ljolley: The WFD assessment does take into consideration the mitigation measures from the SE RBMP, these were originally listed in Table 3.1 for the TraC water bodies and discussed in Assessment Table 5. The relevant mitigation measures have also been added to Assessment Table 2 so that any future reader can clearly see how important the mitigation measures are, as well as Table 3.2 (FWBs) and Assessment Table 4 – which now shows a summary of which measures have been attained. Where it has been necessary to proposed mitigation measures to be taken forward at a lower-tier level (e.g. strategy level) or where more research is required where we have been unable to change the policy these will be stated and may be put in the SMP Action Plan. This will be for mitigation measures that could not be implemented in an obvious way, for example, the MR policy at Thorley Brook and Barnsfield (PU6C.5), MR of Wootton Creek (PU2B.3), both of which is in line with the mitigation measures by opening up existing culverts to enhance ecological value).

Assessment Table 3 is where the majority of the assessment takes place. However I did find it confusing which water body was being referred to. After a while the colour coding on the left looked like it referred to each water body. However for clarity could the name of the water body be introduced to this table –
Ljolley: Amended and made more clear to the reader.

Page No.	Paragraph	Line	Comment	Name	Organisation	Date	IWCCE Response	Name	Date
	Foreword		Should this say, 'They key contact for the Water Framework Directive Assessment is…'	Emily Allison	Environment Agency	03-Jun-10	Changed	Ljolley	5-Jul-10
2	Table1.1	Type	Physico' not 'Phyiso'	Jim Whatley	Environment Agency	03-Jun-10	Changed	Ljolley	17-Jun-10
4	5 (J1.2.12)	7	Add 'set out in Article 4.7 of the WFD' after 'conditions' in order to link this para to the one above	Jim Whatley	Environment Agency	03-Jun-10	Changed	Ljolley	17-Jun-10
4	J1.2.11		First bullet point is long. Can it be broken up?	Emily Allison	Environment Agency	03-Jun-10	Changed	Ljolley	17-Jun-10
7	J2.2.7	5	Impacts of changes in sediment transport will affect FISH, plus benthic invertebrates, saltmarsh and seagrass . Please add these BQEs to statement.	SRJ	Environment Agency		Added	Ljolley	17-Jun-10
7	J2.3		This section defines the features and issues. Could the Mitigation measures for individual water bodys listed in the River Basin Plan be incorperated into Assessment Table 2 (refer to example layout).	SRJ	Environment Agency		Added in the Mitigation Measures – although these were already listed in Tables 3.1 and 3.2	Ljolley	5-Jul-10

Page No.	Paragraph	Line	Comment	Name	Organisation	Date	IWCCE Response	Name	Date
7	J2.4.1	5	"For each PU, the potential changes….. were identified". This statement is not correct. Assessment tables 2 and 3 DO NOT assess the impact of each PU. They only make a general statement per Water body.	SRJ	Environment Agency		Assessment Table 2 – assesses for each water body. Assessment Table 3 does however make an assessment at a PU level but summarises it at a Mangement Unit Level for each relevant water body- i.e. where the same effect occurs along a frontage because of the policy is the same it is more clear to summarise. Changed text in J2.4.5 and table to make this clearer.	Ljolley	5-Jul-10
8	J2.4.1		This section describes the □itigation process. Could additional detail on when the mitigation measures are being discussed be included in this section. Suggest include text □itigatio to □itigation measures in paragraph J2.4.5 as assessment takes place in Table 5	SRJ	Environment Agency		Added	Ljolley	17-Jun-10
9	J3.1.1	4	Old mill Ponds (near Bembridge) IS included in this description as a transitional waterbody. However is has been missed out of all the other tables (Table 3.1 p9, Assessment Table 1p22,Assessment Table 4.etc) (refer to map for location)	SRJ	Environment Agency		Changed	Ljolley	17-Jun-10
12	Fig 3.2	N/a	Ningwood Stream should have number 6000 not 6060	Jim Whatley	Environment Agency	03-Jun-10	Changed in Figure	Ljolley	17-Jun-10
12	Fig 3.2	N/a	The bolded names on the map do not match all of those on the table 3.2 eg. Newtown creek area WBs and 6220 Eastern Yar	Jim Whatley	Environment Agency	03-Jun-10	Figure Changed	Ljolley	17-Jun-10

Page No.	Paragraph	Line	Comment	Name	Organisation	Date	IWCCE Response	Name	Date
14	J3.1.8	6	Not sure consented discharges to rivers are relevant to groundwater	Lucy Roberts	Environment Agency	08-Jun-10	Removed sentence	Ljolley	17-Jun-10
14	J3.1.9	10	Should be 'Safeguard' zones	Lucy Roberts	Environment Agency	08-Jun-10	Changed	Ljolley	17-Jun-10
14	Table 3.3	N/a	Table description should relate to Groundwater and not TraCs	Lucy Roberts	Environment Agency	08-Jun-10	Changed	Ljolley	17-Jun-10
15	2	5	headland' rather than 'headline'	Jim Whatley	Environment Agency	03-Jun-10	Changed	Ljolley	17-Jun-10
17	Fig3.4		Old mill Ponds water body is not included / highlighted on map	SRJ	Environment Agency		Added	Ljolley	5-Jul-10
21	J3.2.2	3	Whereas… not a sentence	Rloader (IWCAHES)		10-Jun-10	Changed	Ljolley	17-Jun-10
21	J3.2.3	2	composed of	Rloader (IWCAHES)		10-Jun-10	Changed	Ljolley	17-Jun-10
23	Assess Table 2	N/a	I see that the table is missing the column to identify WFD restoration or mitigation measures that have the potential to be designed into SMP policy from the Programme of Measures. SMPs were considered as an important opportunity to implement some of the specific measures in the plan. Were these considered as I can't see it in the outline of the methodology at J2.3?	Jim Whatley	Environment Agency	03-Jun-10	Added in the text in J2.3.3 and J2.3.4 to clearly show that the mitigation measures from the SE RBMP have been considered. They were in Table 3.1, though have since been added into Table 3.2, Assessment Table 2 and 4.	Ljolley	5-Jul-10
30	Rt column	N/a	Colour coding for Medina TraC does not match earlier colour coding from here to end of document	Jim Whatley	,	03-Jun-10	Checked colours and made amends where necessary. Added in Text to make clearer.	Ljolley	5-Jul-10
33	PDZ2 WFD Assessment of deterioration	4	typo – Osborne	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10

Page No.	Paragraph	Line	Comment	Name	Organisation	Date	IWCCE Response	Name	Date
33	PDZ2 WFD Assessment of deterioration	7	typo – over time	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10
34	2		Would saltmarsh be affected by this coastal squeeze? Saltmarsh not mentioned in this PU assessment.	SRJ	Environment Agency		Only minimal amounts found in Wootton Creek – these are under angiosperms and have been considered. Text amended where necessary.	Cearlie	18-Jun-10
34	WDF Assessment of Deterioration, para 3		typo – management **of** changes to salinity	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10
36 and 37	2 and 1		There are extensive Seagrass beds around entrance to Benbridge Harbour. Please include Seagrass in this PU assessment.	SRJ	Environment Agency		Added into assessment	Ljolley	5-Jul-10
37	WDF Assessment of Deterioration	10	typo – over time	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10
39	WDF Assessment of Deterioration, para 2		typo – from in	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10
40	WDF Assessment of Deterioration, para 2	12	typo – **e**ffects	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10

Page No.	Paragraph	Line	Comment	Name	Organisation	Date	IWCCE Response	Name	Date
44	PU7.1WDF Assessment of Deterioration	1	comprises, not comprises of	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10
44	PU7.2WDF Assessment of Deterioration	1	comprises, not comprises of	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10
45	1	4	Saltmarsh should also be included as a Biological Element.However, at present it has not yet been assessed	SRJ	Environment Agency		Saltmarsh is an angiosperm and is not always mentioned as saltmarsh, will amend text so clear	Ljolley	5-Jul-10
45	PU7.3WDF Assessment of Deterioration	1	comprise, not comprise of	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10
45	PU7.3WDF Assessment of Deterioration, para 2	7	Remove one 'therefore'	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10
49	1	3	Add ref to Gurnard Luck (PU1A.1)	Jim Whatley	Environment Agency	03-Jun-10	Added	Ljolley	5-Jul-10
49	WDF Assessment of Deterioration, 3rd bullet point	5	typo – Osborne	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10

Page No.	Paragraph	Line	Comment	Name	Organisation	Date	IWCCE Response	Name	Date
50	1	3	Replace 'should' with 'must'.(Likewise on all other Table 5s) This is a very important point and should also be made in the main document Secion 2.4.3 also referring to the Section 6 Action plan.	Jim Whatley	Environment Agency	03-Jun-10	Replaced should with must. Also this point has been emphasised in Sections J2.4.3 and J3.3.1.	Ljolley	5-Jul-10
57	2	N/a	Does this bullet also refer to the other SE RBMP mitigation action of 'Remove obsolete structure' which is not mentioned.	Jim Whatley	Environment Agency	03-Jun-10	Yes this does – Addition of those measures from the RBMP has been added to Assessment Table 4.	Ljolley	5-Jul-10
58	Brief description…	2	typo – studie**d**	Rloader	IWCAHES	10-Jun-10	Changed	Cearlie	18-Jun-10
61	Brief description…	2	policy. Though this seems – replace . with,	Rloader	IWCAHES	10-Jun-10	Changed to 'policy. A HTL policy would be…'	Ljolley	5-Jul-10
61	J4.1.1		Need to include water body "Old Mill pond" in text	SRJ	Environment Agency		Included in the 'Eastern Yar' water body	Ljolley	5-Jul-10

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