

# **John Willment Marine Ltd**

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## **Universal Marina – Additional Berthing Pontoons**

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Harbour Works Consent  
Environmental information to inform any required Habitats  
Regulations Assessment by the Competent Authority

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Compiled by Dr P Tossell, Lymington Technical Services Ltd

## Contents

1. Introduction	2
2. European Sites Potentially Impacted	3
3. Piling and Pontoons	10
4. Berthing	12
5. Hydrodynamics	13
6. Pressures on Protected Areas	13
6.1 Solent Maritime SAC	13
6.1.1 Construction	14
6.1.2 Operation	17
6.2 Solent & Southampton Water SPA and Ramsar	18
6.2.1 Construction	18
6.2.2 Operation	20
7. Summary Assessment of Potential Impacts on Designated Sites	20
7.1 Construction	20
7.2 Operation	24
8. Construction Environmental Management Plan	27

## **1. Introduction**

John Willment Marine Ltd (JWM) operate Universal Marina on the River Hamble. The marina has undergone significant improvements since 2006 and is now a prestigious marina operation on the river.

It is proposed to alter the existing marina layout by removing one jetty and increasing the available berth lengths. The marina will also extend out to the J line (over the full length).

JWM have applied to the River Hamble Harbour Authority (RHHA) for a Harbour Works Licence to undertake the works.

As the works are not directly connected with, or necessary for, the conservation management of a habitat site, consideration is required as to whether the works are likely to have a significant effect on the habitat site. This is known as 'LSE' and is determined under a Habitats Regulations Assessment (HRA).

The HRA process can be divided into 3 main stages –

Stage 1 – Screening for likely significant effects (LSEs) – whether the works will have a significant effect on a European Site

Stage 2 – Appropriate Assessment (AA). This applies if a LSE is identified in Stage 1

Stage 3 – Mitigation and alternative solutions. If adverse effects are identified during the AA then alterations and mitigation must be provided to fully cancel any adverse effects.

The well documented Court of Justice of the European Union (CJEU) decision in the People Over Wind (Sweetman vs Coillte Teoranta) case (C323/17) determined that inclusion of any mitigation measures for the works (at the application stage) presupposed that there would have been a LSE. As such, a full HRA would have been required.

In practical terms, this has meant that applications can no longer include potential mitigation at the initial application stage. This has caused general frustration and wider concern regarding the legality of many strategic mitigation projects designed to protect existing habitats.

Stage 1 Screening is undertaken by the applicant and this information is presented in this document.

Stage 2 Appropriate Assessment by a 'Competent Authority', for this application the RHHA (as part of Hampshire County Council) is the Competent Authority.

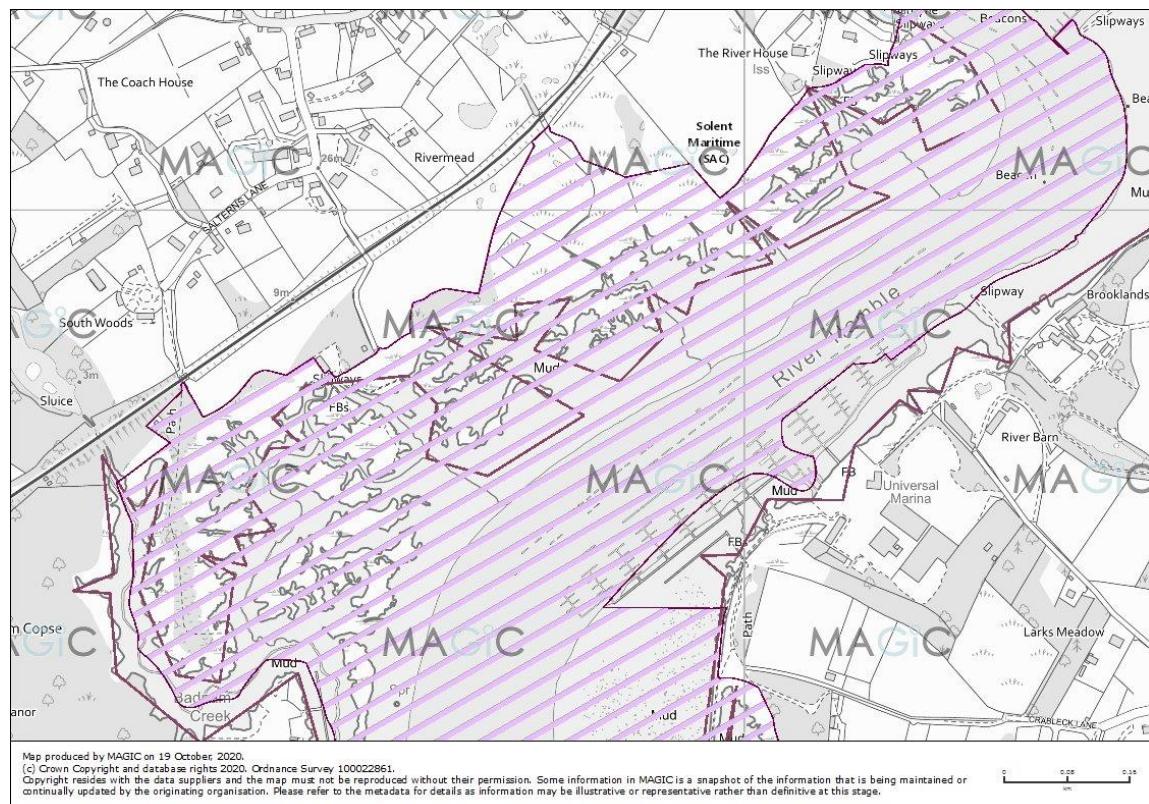
For marine works (such as this application) The Conservation of Habitats and Species Regulations 2017, Provision 103 Marine Works, states:

*(1) The assessment provisions apply in relation to the granting of a licence, consent or other approval for marine works.*

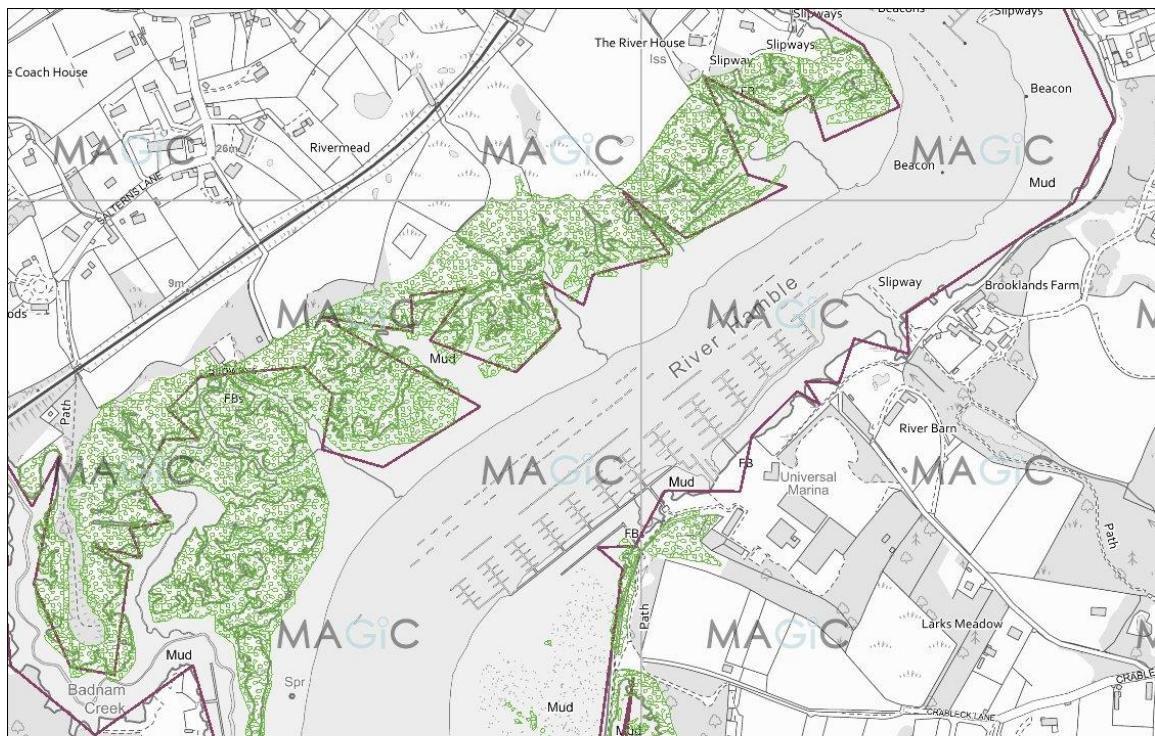
(2) Where the assessment provisions apply, the competent authority may, if it considers that any adverse effects of the plan or project on the integrity of a European site or a European offshore marine site would be avoided if the licence, consent or other approval were subject to conditions or requirements, grant the licence, consent or other approval subject to those conditions or requirements.

## 2. European Sites Potentially Impacted

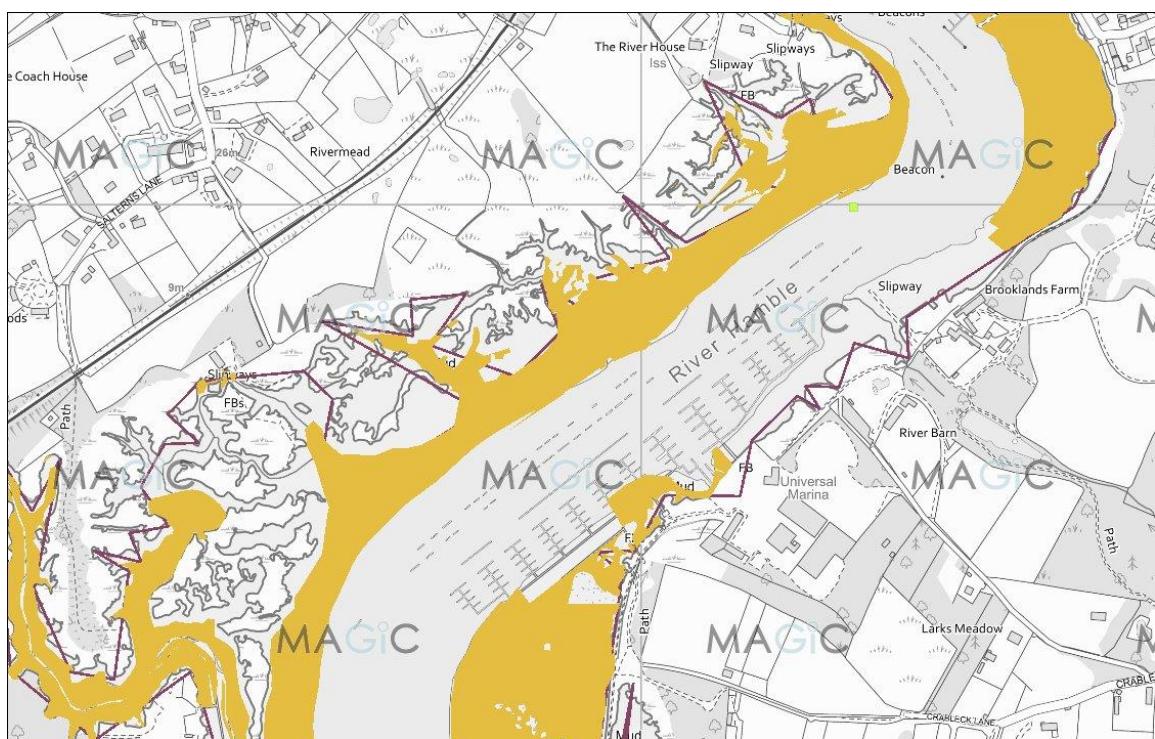
### Solent Maritime Special Area of Conservation (SAC) – Solent Maritime (UK0030059)



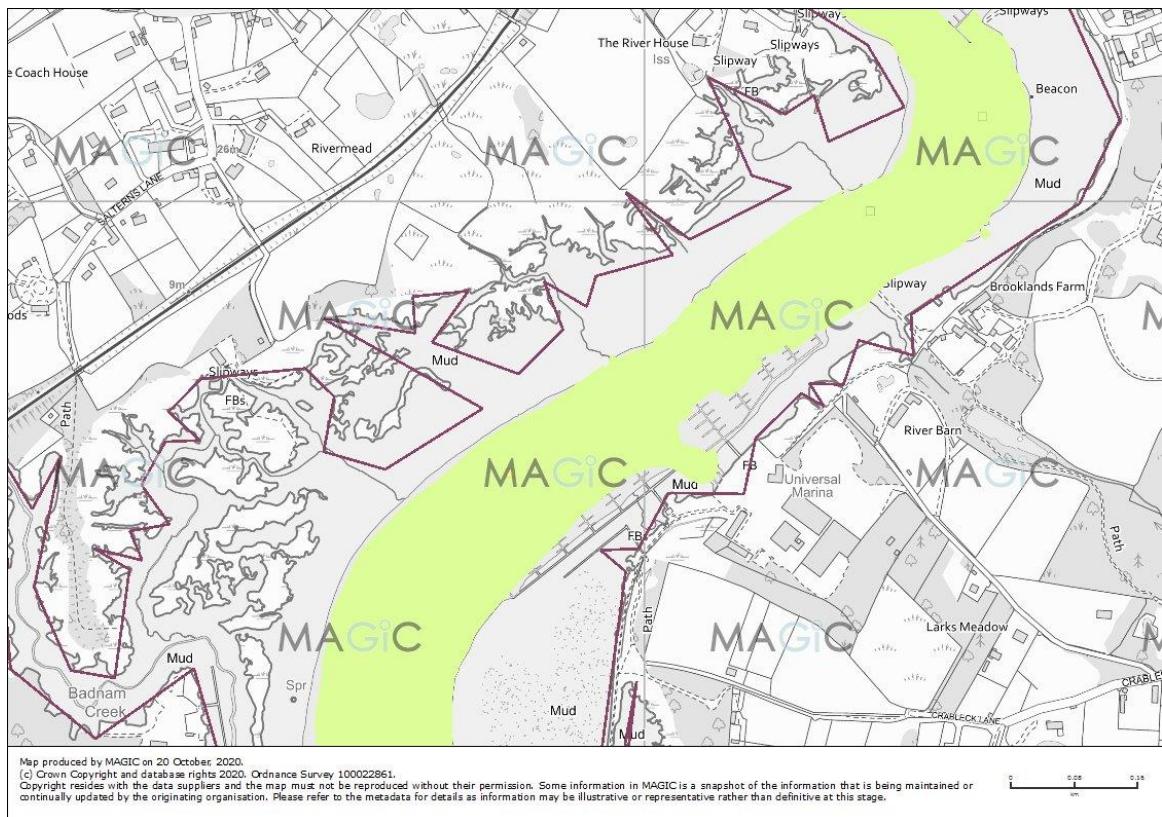
### SAC Extents



### SAC supporting habitats – Saltmarsh (also applies to SPA)



### SAC supporting habitats - Mudflats



### SAC supporting habitat - Subtidal

It is important to understand that the SAC site boundary largely excludes the marinas in the river but has not been updated for some years. The indicated boundary at the site follows an area of berthing/mooring which was altered in 2005/6. It would therefore be reasonable to consider the boundary as that of the current layout. However, whilst this makes some difference in terms of assessment, it will be assessed on the published boundary.

For the River Hamble the relevant qualifying features for the SAC are listed as follows:

*Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)*

*Estuaries*

*Mudflats and sandflats not covered by seawater at low tide*

*Sandbanks which are slightly covered by sea water all the time*

*Spartina swards (*Spartinion maritimae*)*

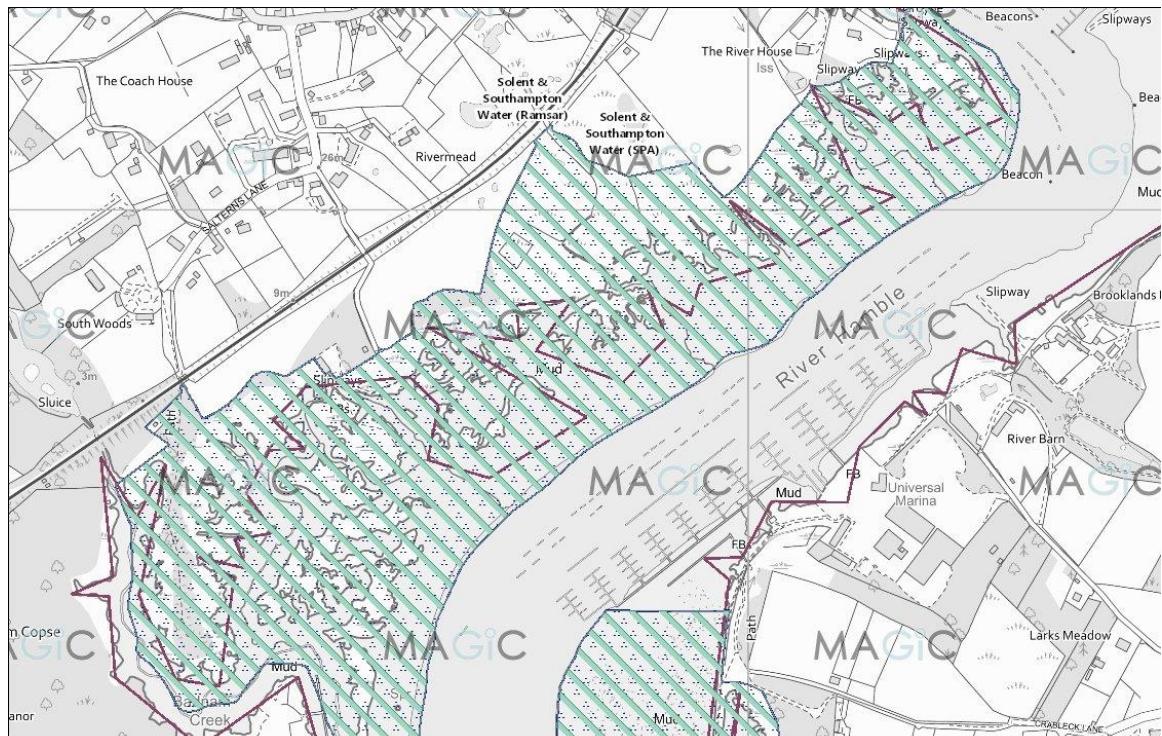
The Solent Maritime SAC estuaries comprise the following sub-features: subtidal coarse sediment, subtidal sand, subtidal mixed sediments, subtidal seagrass beds, intertidal coarse sediment, intertidal sand and muddy sand, intertidal mud, intertidal mixed sediment, intertidal seagrass beds, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), *Salicornia* and other annuals colonising mud and sand and Spartina swards (*Spartinion maritimae*).

The SAC targets are:

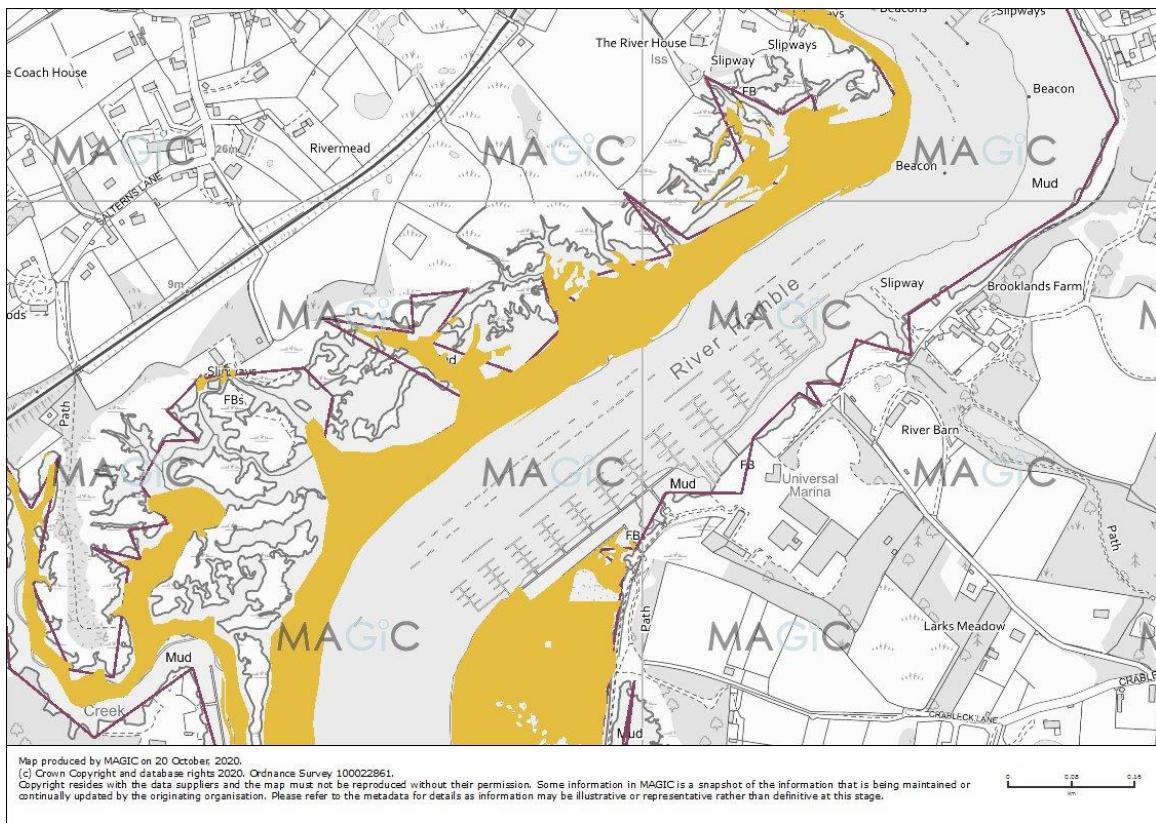
- Restore the presence and spatial distribution of estuary communities.
- Restore the sediment regime and budget within the estuary, including sediment sources, sinks and movement.
- Maintain the tidal range, currents and circulation patterns across the feature (and each of its subfeatures).

### **Solent and Southampton Water Special Protection Area (SPA) and Ramsar – Solent and Southampton Water (UK11063).**

**The proposed works are not within this site but adjacent to.**



### **SPA and Ramsar Sites**



### SPA supporting habitat - Mudflats

The site qualifies as an SPA for breeding and overwintering bird species. Breeding species include Common tern (*Sterna hirundo*), Little tern (*Sternula albifrons*), Mediterranean gull (*Ichthyaetus melanocephalus*), Roseate tern (*Sterna dougallii*), and Sandwich tern (*Thalasseus sandvicensis*). Overwintering birds include Black-tailed godwit (*Limosa limosa islandica*), Dark-bellied brent goose (*Branta bernicla bernicla*), Ringed plover (*Charadrius hiaticula*), Teal (*Anas crecca*).

Under the Ramsar designation the criteria are:

Supporting wetland habitats such as saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs.

Supporting an important assemblage of rare plants and invertebrates.

Supporting avian assemblages of international importance

Regularly supporting 1% of the individuals in a waterbird assemblage (dark-bellied Brent goose).

### Conservation Objectives

Reduce the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed.

Bird numbers for breeding and overwintering birds for Southampton Water:

This contains Wetland Bird Survey (WeBS) data from Waterbirds in the UK 2018/19 © copyright and database right 2020. WeBS is a partnership jointly funded by the BTO, RSPB and JNCC, in association with WWT, with fieldwork conducted by volunteers. WeBS data 2013-2018.

	2014/15 Annual peak	2015/16 Annual peak	2016/17 Annual peak	2017/18 Annual peak	2018/19 Annual peak	Month	5 year moving average
Common tern	(35)	3	94	4	3	Sept	28
Little tern	0	4	0	0	0	-	1
Mediterranean gull	92	135	28	219	(68)	Mar	119
Roseate tern	0	0	0	0	0	-	0
Sandwich tern	(2)	5	24	15	5	Apr	12
Black-tailed godwit	571	443	(416)	750	(387)	Mar	588
Dark-bellied brent geese	3355	1893	1592	2183	2150	Mar	2235
Ringed plover	(112)	205	149	115	97	Oct	142
Teal	1352	1139	(1333)	1238	1173	Dec	1247

WeBS Alerts:

Black-tailed godwit – despite a short-term reduction, the numbers in the long term are stable. The variation in numbers is within the typical range of fluctuation. Numbers in the region are increasing.

Dark-bellied brent goose – numbers within this SPA have remained relatively stable in the long term, this suggests that the environmental conditions remain favourable.

Ringed Plover – numbers have been decreasing long term and appears to be tracking the British trends, suggesting that this is following a wider population change.

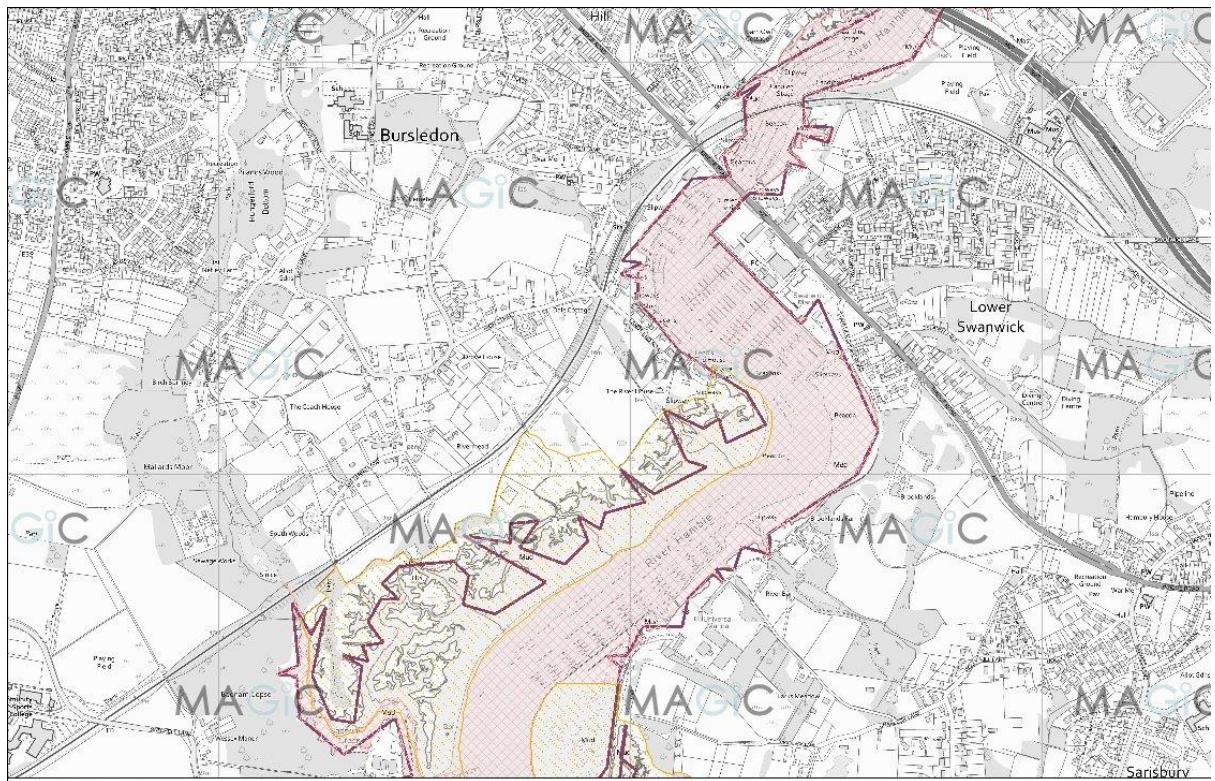
Teal – numbers have remained relatively stable with no alerts triggered. This also supports the view that the environmental conditions remain favourable.

Birds and human activity –

Human activities can result in bird disturbance. Disturbance is defined as any human-induced activity sufficient to disrupt normal behaviours at a level that may substantially affect their behaviour. This can have an important affect if suitable habitat is impacted.

Disturbance is significant if a population of species is impacted by a change in local distribution or abundance.

## Potential Solent and Dorset Coast SPA (pSPA)



Map produced by MAGIC on 19 October 2020.

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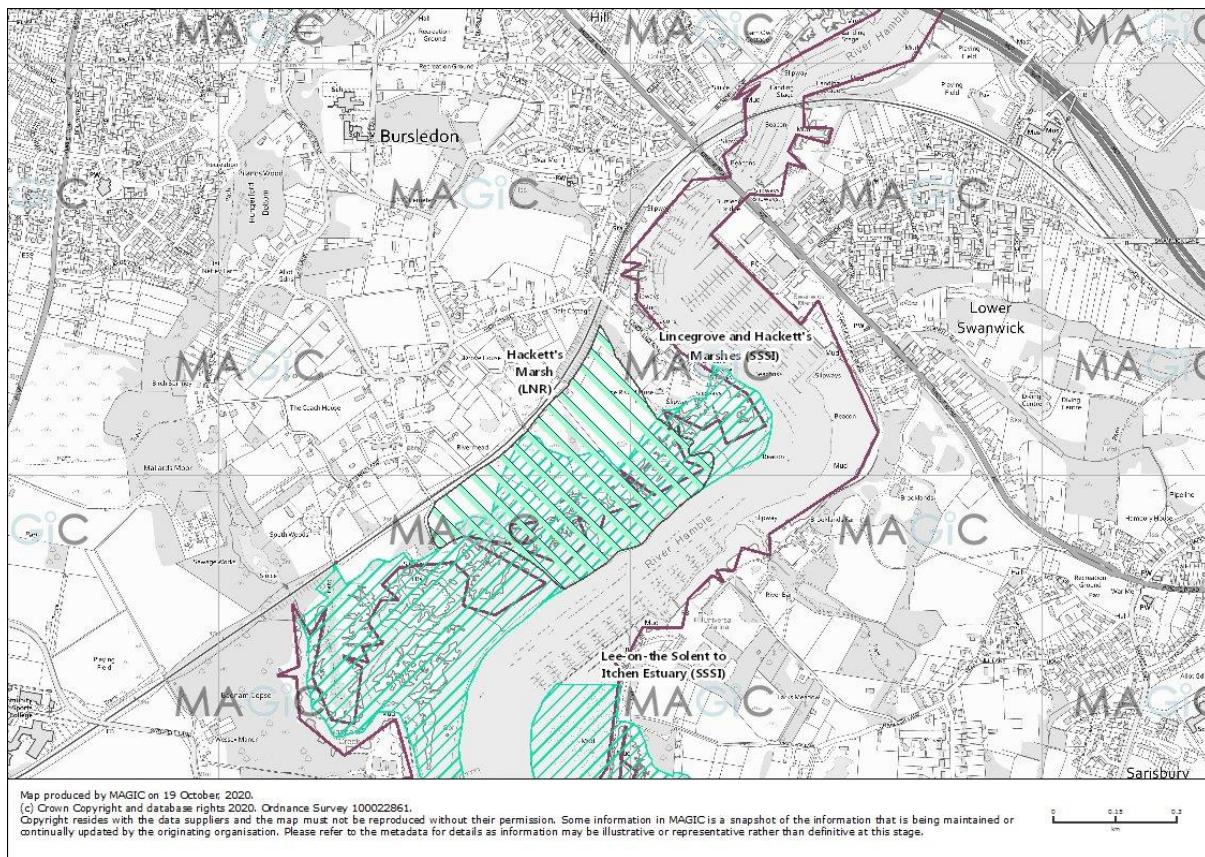
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This proposed SPA is intended to protect the foraging areas utilised by the Sandwich Tern, Common Tern & Little Tern. The proposed boundaries in this area extend those of the Solent & Southampton Water SPA such that the application site and all other operational sites on the river are covered.

### Nearby protected areas –

Local Nature Reserve (LNR) – Hackett's Marsh (1009285) and SSSI – Lincegrove & Hackett's Marshes (1080733). These areas are located on the opposite side of the river to the works site. The existing main channel and associated tidal flows mean that the works area is physically separated from the LNR.

SSSI – Lee-on-the Solent to Itchen Estuary (1000802). This overlays the SPA and the condition is reported as unfavourable, no change.



Shellfish Waters – Approaches to Southampton Water (36). No possible impact.

Coastal Sensitive Areas – Eutrophic – Hamble Estuary (UKENCA123), nitrate sensitivity. The nature of the works is such that they can have no impact on the level of nitrates.

The following sites are all distant from the works and no likely significant effect alone or in combination is anticipated.:

Portsmouth Harbour SPA.

Chichester and Langstone Harbours SPA.

Chichester and Langstone Harbours Ramsar site.

Portsmouth Harbour Ramsar site.

### **3. Piling and Pontoons**

The proposed works require the relocation of 85 piles, the replacement of 12 piles, the retention of 24 piles, and the addition of 54 piles. Total number of piles 175.

The construction aspect consists of driving the piles and connecting pontoons. The pontoon section is assembled on shore and lifted into the water to be floated into position. No specific marine plant is required for this part of the works. The pontoons are moved using small workboats,

typical of the common marina workboat size. Such movements are no different from normal vessel movements and can have no additional environmental impact.

The relocation works will be a temporary impact on the habitat.

The new 54 piles will occupy a total area of 5.43m<sup>2</sup> and this will be a permanent loss of habitat.

Taking the SAC boundary as currently defined, only 42 new piles are within this area. This is equivalent to 4.23m<sup>2</sup>.

Piling will penetrate the substratum of the seabed. This is unavoidable but necessary as seen in other nearby similar piling works.

All the piles are tubular steel with marine friendly coatings.

It is proposed that vibro-piling methods will be employed with percussion piling only being employed to attain design levels. It is considered highly unlikely that percussion piling will be required as modern vibro-hammers can cope with most seabed types. Soft-start methods will be used in the event of any percussion piling.

The piling will be undertaken from a spud-legged crane barge.

The pile is lifted into position by the crane (pitched). It is restrained by placing through the pontoon pile guide and its self-weight into the seabed provides temporary stability. The crane then lifts the vibro-hammer and engages with the top of the pile. The pile is then checked for verticality and the vibro-hammer started (driving). The actual piling takes around 10-15min.

It takes time for the process to be repeated as the barge may have to relocate. In practical terms it is likely that there will be intervals of at least 20mins between each pile being driven. Such piling operations usually result in no more than 6 piles be driven (or removed) in a single day.

This is a standard approach in all similar estuaries.

It is important to understand that the driving of tubular steel piles is vastly different to that required for sheet piling and the impact significantly less.

Marine piling can theoretically raise the level of suspended solids locally to the pile. However, this is exceedingly small and difficult to measure. It is substantially less than that generated by regular maintenance dredging in the river.

Piling will only be undertaken during daylight hours, 1000-1600 is a common period.

In the River Hamble both construction and dredging are regular occurrences. The plant employed is similar in terms of noise, the piling plant creating less sediment disturbance.

In terms of timing during the year there are a range of previous windows on this River:

For piling works at Swanwick Marina (upstream of the site) vibro-piling was standard with no timing restrictions. For methods other than vibro-piling (percussion piling) then piling

between 16 March and 29 November only. If percussion methods were required outside of this period, then a noise impact assessment was required.

For piling works at Deacons Marina (further upstream of the site) vibro-piling was standard with no timing restrictions. For methods other than vibro-piling (percussion piling) then piling between 16 March and 29 November only

For piling works at Hamble Point Marina (downstream of the site) there were no timing restrictions, only a requirement for soft-start for any percussion piling. Another licence for hoist dock repairs percussion piling was restricted to between 1 Nov and 15 March (for salmonids).

For construction works just downstream of the site (but within the SSSI) a timing restriction to avoid the overwintering bird season (1 Oct to 31 March) was required.

In the case of this application the Swanwick Marina works are similar in piling numbers. Both sites are similar distances from MPAs.

As is evidenced by the existing and recent licensed activities there is no clear consensus of timing. In most cases the preferred timing is between October and March as this reduces the impact on other vessel movements in the area. It is this period that is the current dredging window.

With this uncertainty in mind JWM are flexible in the timing of the works.

#### **4. Berthing**

As the length of vessels requiring marina berths has altered over the last few years it is proposed to revise the marina layout to accommodate vessels of a slightly larger size. The marina currently has a large number of 10m finger berths. The customer demand is for slightly longer berths of 12m, with an increase in 15m berths. To accommodate this within the current layout we are removing one of the jetties (from 13 to 12).

An additional concern is the current access channel (approx. 12m in width) between the J line and the marina hammerheads. With increasing use of dry stack vessels this channel provides some navigational difficulties and the proposal also includes extending out to the J line. This allows all vessels to exit directly into the main channel. For information, this is the same as recently undertaken at Deacons Marina further upstream.

This rearrangement results in an additional 11 berthed vessels.

The River Hamble is a major centre for recreational boating with many marinas and moorings. At Universal Marina only about 20% of the vessels are regularly used on average, this reduces significantly for the larger vessels.

## **5. Hydrodynamics**

It is important to consider how this development will impact on the current hydrodynamic system.

When Universal Marina was redeveloped in 2006, capital and maintenance dredging was undertaken. The dredge area was designed with flared and sloping ends at the upstream and downstream sections to smooth the tidal flow. This is very different to the more common right-angled edge of a marina dredge. Additionally, the inshore section of the dredge area was sloped to minimise impact on the intertidal areas.

This has proved to be highly effective with no major dredging being required since 2006. The only dredging that has been necessary is around the hoist dock area where the tidal flows have been interrupted by the inshore dredge. This area allows sediment accumulation requiring maintenance.

The proposed works make no difference to the sediment flow behaviour as they are all at least 50m seawards of MLW.

In terms of the moored vessels, these are all aligned with the tidal flow. Theoretically, a vessel will provide an obstruction to the flow, but this is offset by limited localised flow acceleration. There is no evidence that such flow changes affect the riverbed in this river.

## **6. Pressures on Protected Areas**

### **6.1 Solent Maritime Special Area of Conservation (SAC)**

From the Natural England Designated Sites View the following features are relevant in this application:

*Atlantic salt meadows (Glauco-Puccinellietalia maritimae)*

*Estuaries*

*Mudflats and sandflats not covered by seawater at low tide*

*Sandbanks which are slightly covered by sea water all the time*

*Spartina swards (Spartinion maritimae)*

From the Natural England Designated Sites View the following features cover the above:

*Atlantic salt meadows*

*Spartina swards*

*Intertidal mud*

*Subtidal seagrass beds*

*Subtidal mixed sediment*

### 6.1.1 Construction

**Piling & Pontoon Installation – advice on operations from Natural England’s Designated Sites View.**

Pressure Name	Atlantic salt meadows	Spartina swards	Intertidal mud	Subtidal sea grass	Subtidal mixed sediment
Advice on Operations for Piling, Construction & Maintenance of port and harbour structures					
Abrasion/disturbance of the substrate on the surface of the seabed	SC/SP	SC/SP	SC/SP	SC/SP	SC/SP
Barrier to species movement	SC/SP	SC/SP	NS	-	NS
Changes in suspended solids (water clarity)	SC/SP	SC/SP	SC/SP	SC/SP	SC/SP
Emergence regime changes	SC	SC	SC	SC	SC
Habitat structure changes – removal	SC	SC	SC	SC	SC
Introduction of light	-	-	NA	SC/SP	IE
Penetration and/or disturbance to the substratum below the surface of the seabed including abrasion	SC/SP	SC/SP	SC/SP	SC/SP	SC/SP
Physical change to another seabed type	-	-	-	-	-
Physical change to another sediment type	SP	SP	SP	SP	SP
Physical loss – to land or freshwater habitat	SC/SP	SC/SP	SC/SP	SC/SP	SC/SP
Removal of non-target species	SC	IEC	SC	SC	SC
Smothering and siltation rates – heavy	SC	SC	SC	SC	SC
Smothering and siltation rates – light	NS	NS	SC/SP	SC/SP	SC/SP
Underwater noise changes	-	-	-	-	NSC
Vibration	IE	IE	-	-	-
Visual disturbance	-	-	-	-	NS
Water flow and sediment changes	NS	NS	NS	SC/SP	NS
Wave exposure changes	NS	NS	NS	SC/SP	NS
Deoxygenation	NSC	NSC	NSC	NSC	NSC
Hydrocarbon and PAH contamination	NA	NA	NA	NA	NA
Introduction of other substances	NA	NA	NA	NA	NA
Invasive non-indigenous species	SC/SP	SC/SP	SC/SP	SC/SP	SC/SP

Nutrient enrichment	NSC	NSC	NSC	NSC	NSC
Synthetic compound contamination	NA	NA	NA	NA	NA
Transition elements and organo-metal contamination	NA	NA	NA	NA	NA

#### **Key to table – Sensitivity**

SP – sensitive - piling

SC – sensitive - construction

IE – insufficient evidence

NA – not assessed

NS - not sensitive

NSC – not sensitive construction

#### **Risk assessment of pressures (from Natural England's Designated Sites View) -**

##### Abrasion/disturbance of the substrate on the surface of the seabed

Risk is medium-high and refers to piles of 1m diameter and larger.

##### Barrier to species movement

Risk is medium-high and refers to physical obstructions, noise, light, and water quality

##### Changes in suspended solids (water clarity)

Risk is medium-high and refers to highly localised and temporary increases in suspended solids in the direct vicinity of the works.

##### Emergence regime changes

Risk is medium-high and refers to large scale port and harbour developments

##### Habitat structure changes – removal

Risk is medium-high and refers to large scale sediment removal.

##### Introduction of light

Risk is low for piling and medium-high for construction. This refers to construction and vessel lighting.

##### Penetration and/or disturbance to the substratum below the surface of the seabed including abrasion

Risk is medium-high and refers to piles larger than 1m diameter and dredging.

Physical change to another seabed type

Risk is low for major piling works, and medium-high for construction deposit leading to permanent excavation or smothering of habitat.

Physical change to another sediment type

Risk is low for major piling works, and medium-high for construction leading to permanent excavation or smothering of habitat by deposit of materials.

Physical loss – to land or freshwater habitat

Risk is medium-high and refers to structures such as barrages that reclaim land and/or change the habitat to freshwater.

Removal of non-target species

Risk is medium-high and refers to large construction and dredging activities.

Smothering and siltation rates – heavy

Risk is medium-high and refers to large construction and dredging activities, not piling.

Smothering and siltation rates – light

For piling the risk is medium-high and refers to highly localised and temporary increases in suspended solids in the direct vicinity of the works. Dredging and disposal can also cause such changes.

Underwater noise changes

Risk is medium-high and refers to piling and construction. Impulsive/impact sound (from percussion piling) is of most concern to mobile species.

Vibration

Risk is medium-high and refers to piling and construction.

Visual disturbance

Risk is medium-high and refers to people and vessel movements.

Water flow and sediment changes

Risk is low for piling and medium-high for construction. This refers to flow changes caused by underwater structures. These are generally large works sufficient to have an impact on flow.

Wave exposure changes

Risk is low for piling and medium-high for construction. This refers to structures such as breakwaters and quay walls of a size sufficient to affect wave action.

#### Deoxygenation

The risk is low and refers to construction.

#### Hydrocarbon and PAH contamination

The risk is low and refers to Polycyclic aromatic hydrocarbons (PAHs).

#### Introduction of other substances

The risk is low and refers to release of substances and potentially the re-mobilisation of contaminants.

#### Invasive non-indigenous species

The risk is low and refers to biofouling from vessels.

#### Nutrient enrichment

The risk is low and refers to dredging and disposal activities and works where high levels of sediment mobilisation occur.

#### Synthetic compound contamination

The risk is low and refers to commercial spillages, typically from large shipping tankers and cargo ships.

#### Transition elements and organo-metal contamination

The risk is low and refers to vessel oils, fuel, TBTs, and PAHs.

### **6.1.2 Operation - advice on operations from Natural England's Designated Sites View.**

<p>Advice on Operations for Berthing, powerboating/sailing without engine. No anchoring</p> <p>Pressure Name</p>	Atlantic salt meadows	Spartina swards	Intertidal mud	Subtidal sea grass	Subtidal mixed sediment
Abrasion/disturbance of the substrate on the surface of the seabed	S	S	S	S	S

Changes in suspended solids (water clarity)	S	S	S	S	S
Introduction of light	-	-	NS	S	IE
Penetration and/or disturbance to the substratum below the surface of the seabed including abrasion	S	S	S	S	S
Underwater noise changes	-	-	-	-	-
Vibration	NS	NS	NS	NS	NS
Visual disturbance	-	-	-	-	NS
Water flow and sediment changes	NS	NS	S	S	NS
Hydrocarbon and PAH contamination	NA	NA	NA	NA	NA
Introduction of other substances	NA	NA	NA	NA	NA
Invasive non-indigenous species	S	S	S	S	S
Synthetic compound contamination	NA	NA	NA	NA	NA
Transition elements and organo-metal contamination	NA	NA	NA	NA	NA
Litter	-	-	S	S	S

#### **Key to table – Sensitivity**

S – sensitive

IE – insufficient evidence

NA – not assessed

NS - not sensitive

## **6.2 Solent and Southampton Water Special Protection Area (SPA) and Ramsar Sites Water**

The proposed works do not directly fall within these sites, but any potentially relevant links are included in the following sections.

### **6.2.1 Construction**

**Piling & Pontoon Installation - advice on operations from Natural England's Designated Sites View.**

<b>Advice on Operations for Piling, Construction &amp; Maintenance of port and harbour structures</b>	Black-tailed godwit	Common tern	Dark-bellied brent geese	Little tern	Mediterranean gull	Ringed plover	Roseate tern	Sandwich tern	Teal
<b>Pressure Name</b>									
Above water noise	S	S	S	S	S	S	S	S	S
Barrier to species movement	S	NS	S	S	NS	S	NS	NS	S
Changes in suspended solids (water clarity)	-	S	-	S	NS	-	S	S	-
Introduction of light	S	IE	S	IE	IE	S	IE	IE	S
Visual disturbance	S	S	S	S	S	S	S	S	S
Collision above water with objects	S	S	S	S	S	S	S	S	S
Collision below water with objects	-	S	-	S	S	-	S	S	-

#### **Key to table – Sensitivity**

S– sensitive

IE – insufficient evidence

NS - not sensitive

#### **Risk assessment of pressures -**

##### Above water noise

Risk is low and depends upon the special/temporal scale and intensity

##### Collision above water with objects

Risk is low and depends upon the special/temporal scale and intensity

##### Collision below water with objects

Risk is low and depends upon the special/temporal scale and intensity

## 6.2.2 Operation – advice on operations from Natural England’s Designated Sites View.

Pressure Name	Black-tailed godwit	Common tern	Dark-bellied brent geese	Little tern	Mediterranean gull	Ringed plover	Roseate tern	Sandwich tern	Teal
Above water noise	S	S	S	S	S	S	S	S	S
Barrier to species movement	S	NS	S	S	NS	S	NS	NS	S
Changes in suspended solids (water clarity)	-	S	-	S	NS	-	S	S	-
Introduction of light	S	IE	S	IE	IE	S	IE	IE	S
Visual disturbance	S	S	S	S	S	S	S	S	S
Collision above water with objects	S	S	S	S	S	S	S	S	S
Collision below water with objects	-	S	-	S	S	-	S	S	-

## 7. Summary Assessment of Potential Impacts on Designated Sites.

This section includes the SAC, SPA and Ramsar sites. Note that the works are not within the SPA or Ramsar sites but adjacent to.

### 7.1 Construction

#### Abrasion/disturbance of the substrate on the surface of the seabed

This type of damage is usually associated with large diameter piles, heavy construction, anchoring, and similar type moorings. There will be minimal impact due to the spud legs of the crane barge, but this is unavoidable. However, it will be short in duration and is less than the disturbance associated with regular maintenance dredging conducted on the river. All such impacts are within the SAC only. None of the works are in the intertidal areas.

#### Barrier to species movement

This primarily applies to physical obstructions, noise, light, and water quality. Whilst there will be some physical obstructions during construction these are small and sufficient avoidance room for mobile species is available. This also applies to noise, light, and water quality. Such physical disturbances are no different to the regular maintenance dredging undertaken on the river. This applies directly to the SAC but is also of relevance to the SPA & Ramsar sites.

### Changes in suspended solids (water clarity)

Piling can raise suspended solids locally, but this is highly localised and temporary. The necessary slow start to the operation enables any receptor species to move away. The levels of suspended solids generated are significantly less than that generated by existing dredging on the river. This only affects the SAC.

### Emergence regime changes

This applies to large scale port and harbour developments, the works proposed in this application do not trigger any such concerns. Whilst this applies to the SAC, it also confirms no such change to the SPA and Ramsar sites.

### Habitat structure changes – removal

This refers to excavation and dredging. There is no habitat removal involved in this application. Whilst this applies to the SAC, it also confirms no such change to the SPA and Ramsar sites.

### Introduction of light

Apart from the necessary navigation lighting no additional lighting is proposed. Construction plant often works outside daylight hours with the use of floodlights. However, in this case all works will be undertaken during daylight hours. There will be no additional lighting. This is within the SAC but has potential implications to the SPA & Ramsar site. As the levels of lighting will not be increased no negative impacts result.

### Penetration and/or disturbance to the substratum below the surface of the seabed including abrasion.

The additional piling (typically 400mm in diameter) will result in the direct loss of 4.23m<sup>2</sup> of Solent Maritime SAC habitat. Due to the nature of the proposed works this is unavoidable. In terms of the SAC (and considering that the boundary does not exclude this marina, as it does others), this area of loss is considered too small in comparison to the total available area to be a concern. This loss is not within the Ramsar site, nor the SPA site.

### Physical change to another seabed type

In terms of this application there is no change to another seabed type. This applies to the SAC and is not related to the SPA or Ramsar sites.

### Physical change to another sediment type

In terms of this application there is no change to another sediment type. This applies to the SAC and is not related to the SPA or Ramsar sites.

### Physical loss – to land or freshwater habitat

This refers to structures such as barrages that that reclaim land and/or change the habitat to freshwater. There is no such change in this application. This applies to the SAC and is not related to the SPA or Ramsar sites.

### Removal of non-target species

This refers to large construction and dredging activities. For this application there is no such removal. Whilst this applies to the SAC, it also confirms no such change to the SPA and Ramsar sites.

### Smothering and siltation rates – heavy

This refers to large construction and dredging activities, not the level of piling proposed in this application. No such impacts due to the works. This applies to the SAC.

### Smothering and siltation rates – light

Piling can increase the level of suspended solids in the water column. However, this is highly localised and temporary in the direct vicinity of the works. The regular dredging on this river causes larger levels of change. The impact on the SAC is therefore considered negligible.

### Underwater noise changes

Mobile receptors can be sensitive to underwater noise. Variations in the underwater noise climate will potentially occur during marine piling works. All piling will be undertaken using vibro-piling as standard with percussion piling (with soft-start procedures) only being used to attain design level if necessary. The use of percussion piling is considered highly unlikely on the basis that all similar piling in the area has only required vibro-piling. As these are singular tubular steel piles the piling operation is not continuous, and the process is well established as best practice. It is important to understand that the existing underwater noise climate is generated by regular vessel traffic in the area and the addition of a piling rig is unlikely to have a significant impact.

### Vibration

Use of vibro-piling will introduce vibration into the water column and the seabed. This will be temporary, localised, and non-continuous. This only affects the SAC.

### Visual disturbance

From the SW and NE, the current access channel (a narrow strip of water approximately 12m in width) will alter from vessels transiting to vessels moored and there is unlikely to be any visual difference. No changes to heights are proposed. Views from most other directions will appear the same. Many of the yachts in the boathouse are higher than the proposed works. Views from the NW and SE will appear more open as the existing fairways will be fully open. Many marinas employ bird scaring devices to reduce fouling of vessels (JWM does not). There will be some temporary

changes during construction, but this is no different to the regular dredging undertaken during the overwintering bird nesting period.

This applies to the SAC, SPA & Ramsar sites.

#### Water flow and sediment changes

The existing marina layout dredging was designed to encourage smooth flow throughout to minimise sediment deposition. There may be some very minor alterations to surface flows whilst the crane barge is in position, but this is no different to current dredging plant that operates in the river. Any such change will be localised and temporary. This only applies to the SAC.

#### Wave exposure changes

This refers to structures such as breakwaters and quay walls of sufficient size to affect wave action. None of these are proposed in this application so there will be no changes to wave exposure. This applies directly to the SAC.

#### Deoxygenation

The risk is low and primarily refers to anthropogenic emissions and eutrophication. Due to the intermittent periods of piling no such oxygenation is anticipated. This applies to all sites.

#### Hydrocarbon and PAH contamination

The proposed plant and methods have no link to any such potential contamination. This applies to all sites.

#### Introduction of other substances

This refers to release of substances and potentially the re-mobilisation of contaminants. No substances are to be released and re-mobilisation of contaminants is highly unlikely. This is supported by the permitted regular dredging on the river. This applies to all sites.

#### Invasive non-indigenous species

The risk is low and refers to biofouling from vessels. The plant employed regularly works along the south coast and no such species have been identified as a concern. This applies to all sites.

#### Nutrient enrichment

The risk is low and refers to dredging and disposal activities and works where high levels of sediment mobilisation occur. No such works are proposed in this application.

#### Synthetic compound contamination

The risk is low and refers to commercial spillages, typically from large shipping tankers and cargo ships. No such vessels are connected with the proposed works.

### Transition elements and organo-metal contamination

The risk is low and refers to vessel oils, fuel, TBTs, and PAHs. To prevent any possible impact all plant will carry oil spill kits in accordance with standard Marine Management Organisation licences.

### Above water noise

During piling there will be some additional noise, but this will be short lived and localised. This is a busy waterway with similar noise level plant regularly operating (dredgers and split hoppers). Piling will only be undertaken during daylight hours, typically 1000-1600. This affects all sites.

### Collision above water with objects not naturally found

During construction, a crane barge will be operating, and this will potentially be higher than some of the yacht masts. If considered of benefit and safe, the crane can be lowered at night so that it is not higher than the existing masts. This is already an operational marina with many vessels. The proposed alterations will not enlarge or intensify the existing area. This applies to the SPA & Ramsar sites.

### Collision below water with objects not naturally found

During construction piles will be driven within the existing marina area so this will be a potential change. However, the distribution of existing piles and vessels is such that there is no greater risk. This applies to the SPA & Ramsar sites.

### Pollution

With all marine plant there is a risk of pollution, as there is with any vessel. A common spillage is during refuelling, and no refuelling of the plant will be permitted at the site. In addition, all marine plant carries oil spill kits to deal with any spillage. This is a standard requirement of the Marine Management Organisation's Marine Licence. This applies to all sites.

## **7.2 Operation**

### Abrasion/disturbance of the substrate on the surface of the seabed

This will not apply during normal marina operations.

### Barrier to species movement

This primarily applies to physical obstructions, noise, light, and water quality. Whilst there will be some alterations to the physical layout these are small compared to the existing environment. Sufficient avoidance room for mobile species will remain as it is in other nearby similar sites. There will be no changes to noise, light, and water quality. This applies directly to the SAC but is also of relevance to the SPA & Ramsar sites.

### Changes in suspended solids (water clarity)

This will not apply during normal marina operations.

### Emergence regime changes

This will not apply during normal marina operations.

### Habitat structure changes – removal

This will not apply during normal marina operations.

### Introduction of light

Apart from the necessary navigation lighting no additional lighting is proposed. There will be no additional lighting. This is within the SAC but has potential implications to the SPA & Ramsar site. As the levels of lighting will not be increased no negative impacts result.

### Penetration and/or disturbance to the substratum below the surface of the seabed including abrasion.

This will not apply during normal marina operations.

### Physical change to another seabed type

This will not apply during normal marina operations.

### Physical change to another sediment type

This will not apply during normal marina operations.

### Physical loss – to land or freshwater habitat

This will not apply during normal marina operations.

### Removal of non-target species

This will not apply during normal marina operations.

### Smothering and siltation rates – heavy

This will not apply during normal marina operations.

### Smothering and siltation rates – light

The regular dredging on this river causes large levels of change. At Universal there is minimal maintenance dredging, and the proposed rearrangement will not increase this. No change to current situation.

### Underwater noise changes

The existing underwater noise climate is generated by regular vessel traffic in the area and the alterations to the marina will not change the current situation.

### Vibration

No vibration is likely during normal marina operations. No change to current situation.

### Visual disturbance

In terms of visual impact to birds this is not a new development but rather a rearrangement. The increase in berth numbers, and hence human activity is slight.

Following the works the marina layout will be slightly different, but when the existing overall view is taken the site will not appear visually different. No changes to heights are proposed. Views from the NW and SE will appear more open as the existing fairways will be fully open. Many marinas employ bird scaring devices to reduce fouling of vessels (JWM does not).

It is concluded that the proposed works are not a significant disturbance to birds. This applies to all sites in general terms, but the works are not within the SPA/Ramsar sites.

### Water flow and sediment changes

The existing marina layout dredging was designed to encourage smooth flow throughout to minimise sediment deposition. There is no change to this arrangement in the new layout.

### Wave exposure changes

No change to current situation.

### Deoxygenation

No likelihood of deoxygenation occurring during normal marina operations. No change to current situation.

### Hydrocarbon and PAH contamination

No likelihood of such contamination during normal marina operations. No change to current situation.

### Introduction of other substances

No likelihood of such introduction during normal marina operations. No change to current situation.

### Invasive non-indigenous species

The risk is low and refers to biofouling from vessels. The risk remains as low as practical and is no different from any other moored vessel in the river. No change to current situation.

### Nutrient enrichment

No risk from normal marina operations. No change to current situation.

#### Synthetic compound contamination

No likelihood of any such spillage during normal marina operations. No change to current situation.

#### Transition elements and organo-metal contamination

The risk remains low during normal marina operations. No change to current situation.

#### Above water noise

The River Hamble is a major centre for recreational boating with many marinas and moorings. The proposed marina rearrangement adds 11 vessels. At Universal Marina only about 20% of the vessels are regularly used, this reduces significantly for the larger vessels. No significant increase during marina operation.

#### Collision above water with objects not naturally found

This is already an operational marina with many vessels. The proposed alterations will not enlarge or intensify the existing area. In terms of collision risk above water there will be more piles, but these are lower in height than most of the masts within the marina. The increase in moored vessels is small compared to the existing. This is not a new development and the risk of collision is unlikely to be any different.

This applies to the SPA & Ramsar sites.

#### Collision below water with objects not naturally found

This is already an operational marina with many vessels. The proposed alterations will not enlarge or intensify the existing area. In terms of collision risk below water the presence of additional piles is insignificant compared to the existing vessel hulls below water. This is not a new development and the risk of collision is unlikely to be any different.

This applies to the SPA & Ramsar sites.

#### Pollution

With all marine vessels there is a risk of pollution. This risk is unchanged for the current situation. The marina holds suitable oil spill kits.

### **8. Construction Environmental Management Plan**

To ensure protection of the environment during construction a management plan will be produced.

As a minimum, this will include the following:

- Site establishment – as the works are undertaken from marine plant there is only a small onshore requirement. This will be established within the existing car parking and fenced off.
- Waste – larger components that are no longer required (typically damaged piles) will remain on the floating plant and recycled. Smaller items will use the existing site disposal arrangements.
- Pollution – floating plant will not be refuelled on site and will carry oil spill kits. No additional land-based plant (other than the boatyard existing plant) will be employed.
- Access – delivery of piles is expected to be by water, with pontoon components delivered by road. As the works entail a large rearrangement there will be minimal additional road deliveries.
- Noise & vibration – for the piling works a vibro-piling method is to be employed. Operation will only be in daylight hours.
- Air quality – all proposed plant will meet current emission regulations. The works entail the assembly of components (manual fastenings) and the levels of airborne dust will be negligible.
- Materials – all materials are designed and manufactured specifically for marine use.
- Communication & Management – JWM Ltd staff will oversee the works to ensure compliance.