

Table 1. — Appropriate Assessment – mitigation and likely significant effects of the proposed South Hayling Island Beach Management Plan to advise the Habitat Regulations Assessment

No	Potential Impacts of Scheme on European Sites	European Sites/Interest Features impacted	Mitigation / avoidance measures	Likely Significant effects [LSE] after mitigation	Requirement for further Appropriate Assessment / Imperative Reasons of Overriding Public Interest
1	<p>Damage and disturbance to breeding and ground nesting birds, and visual / auditory disturbance to roosting birds / terns from open beach recycling. Damage to vegetated shingle and drift line habitats through tracking machinery. Applies to the full Hayling Island Coastline</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Chichester and Langstone Harbour SPA and Ramsar; Solent and Dorset Coast pSPA with their associated interest features, listed in Section 4. <input type="checkbox"/> Sanderling, Ringed Plover, Dunlin, Common, Little and Sandwich Terns (with Turnstones and Oystercatchers in very low numbers). <input type="checkbox"/> Solent Maritime SAC, including vegetated shingle and drift line habitats. 	<p>Refer to Figure 3.2, which spatially illustrates the timing restrictions and BMP units discussed below. To avoid damage and disturbance to breeding and ground nesting birds: ecological walkover immediately prior to works in nesting season only BMP units 1 to 5 (March to August inclusive). Provide exclusion area if nesting birds discovered (minimum of 5 metre buffer distance). Additional surveys will be carried out if required to ensure that birds have not nested in the meantime. No works to take place in BMP units 6 to 8 between March and August inclusive, as a known nesting site.</p> <p>To avoid disturbance to roosting birds: Undertake activity outside of overwintering bird period where possible. If recycling undertaken between October and March inclusive, stop works 1.5 hours before and 1 hour after high tide along</p>	<p>No LSE expected due to the mitigation measures proposed. The appropriateness of the mitigation has been agreed with Natural England during preparation of this HRA through a DAS agreement. Initial bird surveys have indicated that there is low bird usage in the area along the main open beach (BMP Units 3 – 5). The wider harbours are the preferred feeding and roosting areas due to their sheltered nature. Ongoing bird surveys will be undertaken to ensure a complete understanding of the</p>	No

			<p>Eastoke and Gunner Point frontages only (BMP Units 1, 2, 6, 7 and 8). Extraction and stockpiling may still occur during high tide, outside of the sensitive bird areas. This tidal restriction will not apply between April and September inclusive, noting that BMP units 6 to 8 will not be worked on at all between March and August.</p> <p>To avoid impacts on vegetated shingle / drift line habitats: Undertake vegetation surveys in late July / August to guide works. Plan haulage routes to avoid vegetated areas. Measures will be deployed to prevent impacts to vegetated shingle communities, which will be recorded in a CEMP. The CEMP will also set out the best practice techniques to ensure no pollution is caused.</p> <p>To avoid disturbance to breeding terns: Terns feed offshore at all states of the tide (April to September inclusive), however they breed over 4km away within Chichester and Langstone Harbours. It is not considered that the open beach recycling activities will impact terns in any way, especially as works will rarely take place in the summer months when they are foraging within the wider Solent. Recycling activities are unlikely to cause increases in suspended sediments, and will therefore not impact foraging behaviour. This is because materials</p>	<p>use of this area by birds, which may lead to refinement of the tidal restrictions at Eastoke and Gunner Point (BMP Units 1, 2, 6, 7 and 8).</p>	
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			are course, and activities take place on the beach, not directly within the waterbody itself.		
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3	<p>Damage and disturbance to breeding and ground nesting birds, and visual / auditory disturbance to roosting birds / terns from extraction of shingle from Gunner Point (BMP Units 6 and 7). Damage to vegetated shingle and drift line habitats / interruption to natural coastal processes.</p>	<p><input type="checkbox"/> Chichester and Langstone Harbour SPA and Ramsar; Solent and Dorset Coast pSPA with their associated interest features, listed in Section 4.</p> <p><input type="checkbox"/> Sanderling, Ringed Plover, Dunlin, Common, Little and Sandwich Terns (with Turnstones and Oystercatchers in very low numbers).</p> <p><input type="checkbox"/> Solent Maritime SAC, including vegetated shingle and drift line habitats.</p>	<p>To avoid damage and disturbance to breeding and ground nesting birds, including terns: No extraction of shingle from Gunner Point during the bird breeding season (March to August inclusive).</p> <p>To avoid disturbance to roosting birds, including terns: Works will only take place here between September and mid March to avoid wider impacts. September is the preferable month for extraction to avoid the overwintering bird period. If extraction takes place between Oct and mid March inclusive, work will stop for 1.5 hours before, and 1 hour after high tide. No works will take place during extreme cold periods (frozen ground conditions for more than 1 week).</p> <p>To avoid impacts on vegetated shingle / drift line habitats: Undertake vegetation surveys in late July / August to guide works. Plan haulage routes to avoid vegetated shingle</p>	<p>No LSE expected due to the strict mitigation measures proposed, and the ongoing liaison with Natural England proposed. The appropriateness of the mitigation has been agreed with Natural England during preparation of this HRA through a DAS agreement.</p>	No

			<p>areas. Measures will be deployed to prevent impacts to vegetated shingle communities, which will be recorded in a CEMP. The CEMP will also set out the best practice techniques to ensure no pollution is caused. A drift line habitat / vegetated shingle survey was undertaken in 2016 (see Figure 3.2, which illustrates the location of these). From 2017, extraction of beach material will be seaward of the drift line habitat boundary. Volumes of material to be extracted from Gunner Point will be agreed with Natural England and the landowner prior to each campaign, advised by vegetation surveys and details of accretion.</p> <p>To avoid impacts on natural coastal processes: There will be on-going detailed monitoring of beach levels to guide operations. We are working with natural coastal processes for the benefit of this frontage. Recycling from this point will maintain a flow of material to Gunner Point. This is a benefit, as lack of recycling and beach management would eventually lead to erosion at Gunner Point, and loss of vegetated shingle / drift line habitats.</p>		

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4	Impacts of recycling and recharge activities on Water Quality i.e. increased suspended solids in the waterbody. Potential impact on foraging visibility for terns.	<input type="checkbox"/> Chichester and Langstone Harbour SPA and Ramsar; Solent and Dorset Coast pSPA with their associated interest features, listed in Section 4. <input type="checkbox"/> Sanderling, Ringed Plover, Dunlin, Common, Little and Sandwich Terns (with Turnstones and Oystercatchers in very low numbers).	<p>To avoid impacts on the water quality: BMP works have been taking place for a number of years and suspended sediments have never increased enough to cause impacts on protected species and habitats. Background levels on this exposed stretch of coast in storm conditions are expected to be relatively high so ecology of the area is well adapted to fluctuating levels of disturbance in suspended solids.</p> <p>The sediment being recycled and recharged on the open coast is large and therefore the material settles out quickly in the water body. The works are extremely localised and do not take place within the waterbody itself. Also, as they occur along the open coastline, the dilution factor is major, with any suspended sediments rapidly dispersed. Works are generally undertaken outside of tern breeding season, and are over 4km away from the nearest breeding colonies within the harbours.</p>	No LSE expected due to the mitigation measures proposed.	No

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5	<p>Damage and disturbance to breeding and ground nesting birds, and visual / auditory disturbance to roosting birds / terns from extraction of sand from around the Hayling Island Sailing Club slipway (BMP Unit 1). Damage to vegetated shingle and drift line habitats and impacts on intertidal /subtidal sandflats.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Chichester and Langstone Harbour SPA and Ramsar; Solent and Dorset Coast pSPA with their associated interest features, listed in section4. <input type="checkbox"/> Sanderling, Ringed Plover, Dunlin, Common, Little and Sandwich Terns (with Turnstones and Oystercatchers in very low numbers). <input type="checkbox"/> Solent Maritime SAC, including vegetated shingle, drift line habitats and sandflats. 	<p>To avoid damage and disturbance to breeding and ground nesting birds, including terns: ecological walkover immediately prior to works in nesting season (March to August inclusive). Provide exclusion area if nesting birds discovered (minimum of 5 metre buffer distance). Additional surveys will be carried out if required to ensure that birds have not nested in the meantime. To avoid disturbance to roosting birds, including terns: Undertake activity outside of overwintering bird period where possible. If recycling undertaken between October and March inclusive, stop works 1.5 hours before and 1 hour after high. This tidal restriction will not apply between April and September. Works to be stopped during extreme weather events (frozen ground conditions for more than 1 week). The curtailing the work will prevent any significant effect on the SPA birds which will be under additional feeding pressure from said environmental conditions.</p> <p>To avoid impacts on vegetated</p>	<p>No LSE expected due to the strict mitigation measures proposed, and the ongoing liaison with Natural England proposed. The appropriateness of the mitigation has been agreed with Natural England during preparation of this HRA through a DAS agreement.</p>	<p>No</p>

			<p>shingle habitats: Undertake vegetation surveys in late July / August to guide works. Plan haulage routes to avoid vegetated shingle areas. Measures will be deployed to prevent impacts to vegetated shingle communities, which will be recorded in a CEMP. The CEMP will also set out the best practice techniques to ensure no pollution is caused.</p> <p>A drift line habitat / vegetated shingle survey was undertaken in 2016 (see Figure 3.2, which illustrates the location of these). During the 2016 survey, no drift line habitats were present. Locations and volumes of sand to be extracted in the vicinity of the Hayling Island slipway will be agreed with Natural England prior to each campaign, advised by vegetation surveys and details of accretion. To avoid impacts on intertidal / subtidal sandflats: Any sand to be extracted in this area is intertidal sand and will remain as intertidal sand. Material will only be removed in order to keep the Hayling Island Sailing Club slipway usable. Any material removed will be placed back into the same intertidal sediment system at Eastoke, so the material will find its way back. These minimal extractions will not cut off any sediment supply to Black Point. Therefore there is no loss of intertidal sandflat, just some minor working of it. There will be no change in subtidal</p>		
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			<p>habitat, as material will not be removed from the subtidal area. As discussed above, each campaign will first be agreed with Natural England to ensure no LSE on this feature.</p> <p>To avoid impacts on natural coastal processes: There will be on-going detailed monitoring of beach levels to guide operations. We are working with natural coastal processes.</p>		
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6	<p>Damage and disturbance to breeding and ground nesting birds, and visual / auditory disturbance to roosting birds / terns from gentle beach reprofiling at Langstone Harbour entrance (BMP unit 8). Damage to vegetated shingle and drift line habitats through tracking machinery.</p>	<p><input type="checkbox"/> Chichester and Langstone Harbour SPA and Ramsar; Solent and Dorset Coast pSPA with their associated interest features, listed in section 4.</p> <p><input type="checkbox"/> Sanderling, Ringed Plover, Dunlin, Common, Little and Sandwich Terns (with Turnstones and Oystercatchers in very low numbers).</p> <p><input type="checkbox"/> Solent Maritime SAC, including vegetated</p>	<p>To avoid damage and disturbance to breeding and ground nesting birds: No works to be undertaken along this frontage during the bird nesting season (March to August inclusive).</p> <p>To avoid disturbance to roosting birds: Undertake activity outside of overwintering bird period where possible. If recycling undertaken between October and March inclusive, stop works 1.5 hours before and 1 hour after high tide. This tidal restriction will not apply in September. Works to be stopped during extreme weather events (frozen ground conditions for more</p>	<p>No LSE expected due to the strict mitigation measures proposed, and ongoing liaison with Natural England proposed. The appropriateness of the mitigation has been agreed with Natural England during preparation of this HRA through a DAS agreement.</p>	No

		<p>shingle and drift line habitat</p>	<p>than 1 week). The curtailing the work will prevent any significant effect on the SPA birds which will be under additional feeding pressure from said environmental conditions.</p> <p>To avoid impacts on vegetated shingle / drift line habitats: Undertake vegetation surveys in late July / August to guide works. Plan haulage routes to avoid vegetated areas. Measures will be deployed to prevent impacts to vegetated shingle communities, which will be recorded in a CEMP. A drift line habitat / vegetated shingle survey was undertaken in 2016 (Figure 3.2, which illustrates the location of these). No works along this frontage between March and August to protect drift line habitat development.</p> <p>To avoid impacts on natural coastal processes: Only very minor reprofiling works are being promoted here to avoid localised erosion of the car park and impacts on the navigation channel. We are not proposing to move any material away from this frontage. As the annual activity will vary, we will submit a CEMP in advance of each operation.</p>		

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7	Benefits of BMP activities on the wider South Hayling Island open coastline.	<ul style="list-style-type: none"> □ Chichester and Langstone Harbour SPA and Ramsar; Solent and Dorset Coast pSPA with their associated interest features, listed in section 4. □ Sanderling, Ringed Plover, Dunlin, Common, Little and Sandwich Terns (with Turnstones and Oystercatchers in very low numbers). □ Solent Maritime SAC, including vegetated shingle and drift line habitats. 	<p>Beach management and working with natural coastal processes is widely considered as a better FCERM alternative to the construction of hard structures to protect against flooding and erosion, where there is the ability to sustainably do so.</p> <p>The process of recycling and recharging beaches in line with a nationally approved BMP ensures that there are no areas within the sediment cell that will be starved of sediment, which is a major benefit for the full South Hayling Island open coastline.</p> <p>Utilising material accreting on the beach will reduce the need for importing additional sediment from outside the sediment cell, which is our preferred beach management option, both environmentally and financially. However there will at times be a need to renourish the beach with materials imported into the system that match the resident shingle. This maintains healthy and stable beaches, allowing the establishment of vegetated</p>	It is believed that delivery of the BMP, in line with the mitigation highlighted above, will have likely Significant environmental benefits to the South Hayling Island coastline.	No

			shingle communities and active drift lines of vegetation. (Such as the communities that have been building up at Gunner Point as a result of our historic BMP works). This also maintains the areas of beach utilised by roosting birds		
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8	In-combination impacts from other activities within / adjacent to the European designated sites.	<input type="checkbox"/> Chichester and Langstone Harbour SPA and Ramsar; Solent and Dorset Coast pSPA with their associated interest features, listed in Section 4. <input type="checkbox"/> Sanderling, Ringed Plover, Dunlin, Common, Little and Sandwich Terns (with Turnstones and Oystercatchers in very low numbers). <input type="checkbox"/> Solent Maritime SAC, including vegetated shingle and drift line habitats.	As discussed in the HRA (Section 5), other potential activities that could impact the European sites have been identified. If there is the potential that an 'incombination' effect could arise, programming of works would require reconsideration, until the activity that causes the in-combination' effect has ceased. Due to the extensive mitigation built into the delivery of this BMP, as set out within this table, we are avoiding the likelihood of 'in-combination' impacts.	As explained in Section 5, many potential in-combination impacts are prevented by programming of works and avoiding sensitive times for key interest features of the European sites. In addition, by adopting appropriate mitigation, it ensures that any unforeseen in-combination impacts are quickly identified and can be actioned. Therefore, with the control measures in place no LSE is expected.	No, as no LSE expected due to mitigation / avoidance measures adopted.