

Coastal Schemes with Multiple Funders and Objectives FD2635

Case Study Report 10: Bournemouth, Poole Bay & Swanage Beach Replenishment



Image of Swanage Beach taken from www.dorsets.co.uk last accessed July 2011

This case study is one of 14 documents supporting the research project Coastal Schemes with Multiple Objectives and Funders - Case Studies FD2635, available from <http://tinyurl.com/6dzyusy>. This research was conducted in 2010/2011 by Maslen Environmental on behalf of Defra and the Environment Agency's Research and Development programme.

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1 Case Study: Bournemouth, Poole Bay & Swanage Beach Replenishment

1.1 Introduction

1.1.1 Description

The standard of flood and coast protection at Bournemouth, Poole Bay and Swanage depends mainly on the level and width of the beaches. The introduction of hard engineering solutions such as seawalls over the last century has prevented the natural supply of beach material from cliff erosion and it is necessary to occasionally replace the loss of beach material lost to longshore drift. Therefore, over the past 30 years (between 1970-2000) almost 2 million m³ of sand was used to replenish the beaches at Bournemouth and Poole.

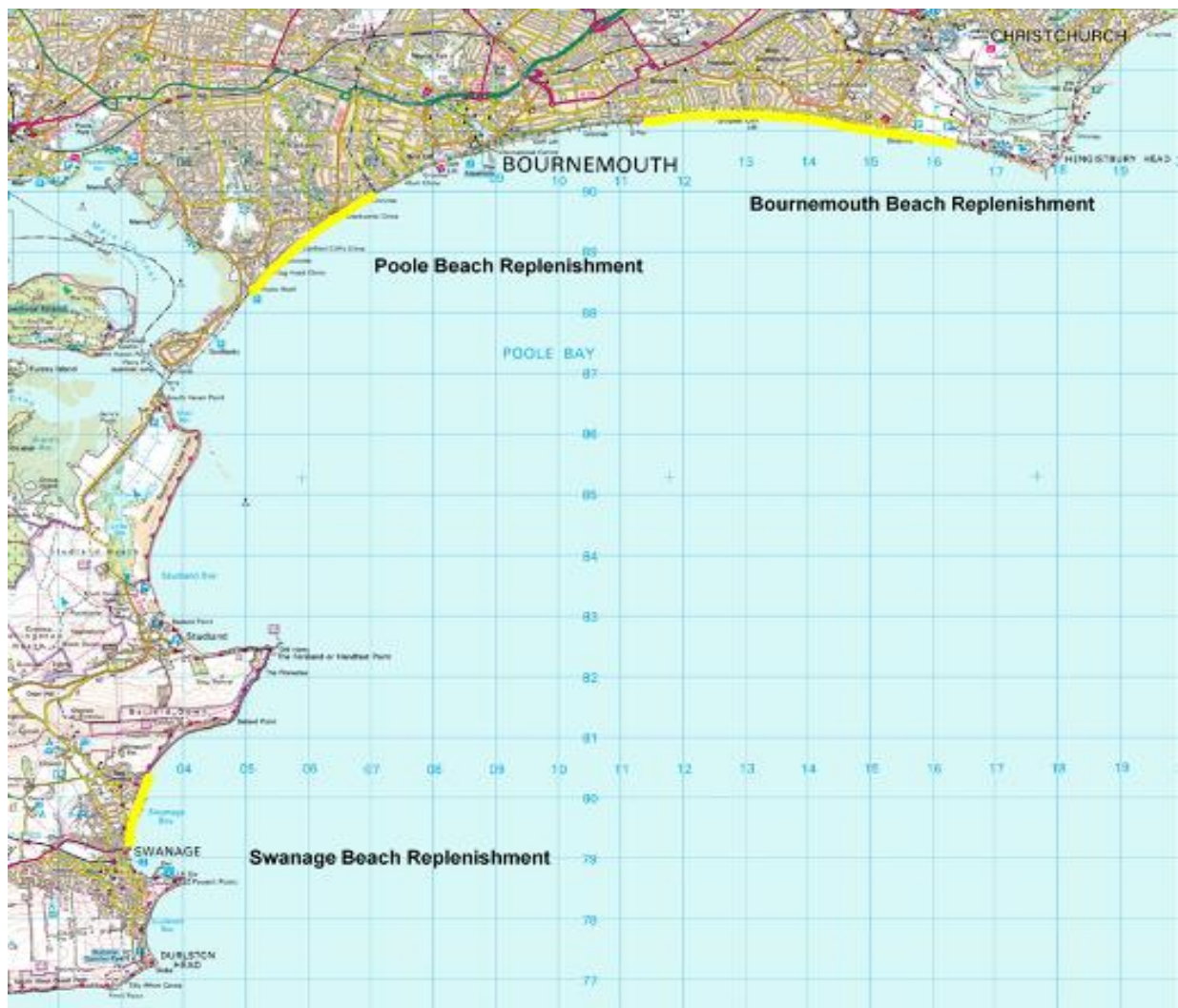


Figure 1. Map to show the extent of the scheme. Source: David Robson, Borough of Poole Council, 2010

The on-going need for beach replenishment was first identified in the Poole and Christchurch Shoreline Management Plan 1999, and a subsequent report by Halcrow (2004) that suggested that a further 3 million m³ will be required over the next 50 years to maintain protective beach levels and widths.

During the winter of 2005/2006, Poole Harbour Commissioners (PHC) dredged 2million m³ of sand from the entrance to Poole Harbour of which 1.1million m³ was suitable for beach replenishment. Completed in 2006 the following sand volumes were allocated, 450,000m³ to Poole, 600,000m³ to Bournemouth and 90,000m³ to Swanage.



Leaving the Waterway, at the bow you can see the coupling point and pipe leading from the hopper, through which sand is pumped to replenish the beaches.

Figure 2. Poole Harbour Commissioners Dredger. Source:
http://www.poolebay.net/Phasel/aboard_a_dredger.htm

The beach recharge project cost a total of £5million and included the following partners, Poole Harbour Commissioners (PHC), Borough of Poole (BoP), Bournemouth Borough Council (BBC) and Purbeck District Council (PDC).

1.2 Objective Setting

1.2.1 Project Drivers and Objectives

Beach replenishment at Swanage was necessary to ensure the sea wall continues to protect the assets behind. Pre-scheme assessments suggested that if nothing was done over the next 50 years damages to local properties and roads at Swanage could amount to over £35million.



Figure 3. – Beach replenishment and groyne construction at Swanage. Source:
 David Robson, Borough of Poole Council, 2010

Poole's beaches had not been recharged since the supply of sand was interrupted by the construction of a sea wall at the middle of the last century, therefore action was urgently required.



Figure 4. – Before and after the beach replenishment at Poole. Source: David Robson, Borough of Poole Council, 2010

Bournemouth beach loses approximately 70,000 m³ of material annually (1 million m³ every 13 years). Since the predominant direction of longshore drift is from west to east, sand gradually feeds the beaches at Southbourne and Hengistbury Head to the east, and beyond into Christchurch Bay. In recent years, the shoreline has been replenished on several occasions and is effectively an 'artificial beach'. Since the scheme was completed, the beach at Bournemouth has led to the beach becoming the largest for more than 60 years, allowing tourism to continue.

1.2.2 Partnership Objectives

PHC dredged 2 million m³ of material from Poole Harbour Channels and Approaches, of which about 1.1 million m³ was suitable for beach replenishment. The main objective was to improve access for vessels and secure the long term viability of the Port in a safe manner. PHC proposed to deepen the approach channel to the Port of Poole by 1.5m (from the present 6m to 7.5m) as part of its capital dredging programme. Primarily, the deeper approach channel was required to meet the needs of modern ferries, the majority of which now have a minimum draft of over 6.5 metres.

For example in 2003 Brittany Ferries advised PHC that they would be withdrawing the freight ferry M/V "Coutances" from the Poole/Cherbourg service due to the age of the vessel. This would be replaced by a much larger vessel built to carry both freight and passengers, with deeper channel requirements.

Purchasing and transporting sand from licensed dredging sites, such as the south of the Isle of Wight or at the Thames Estuary can be very expensive. Therefore, when the opportunity arose to utilise sand from local dredging operations it saved a considerable sum of money.

All of the Local Authorities (BoP, BBC and PDC) required the sand to recharge the beaches. All authorities had specific 'sand requirements' not only in terms of amounts required, but also the 'type' of material was important to ensure it was in-keeping with existing material. For example, BoP specified all material, BBC specified coarse material and fine material types were acceptable for PDC's beaches. PDC undertook the replenishment at the same time as undertaking a contract to replace all the groynes on the beach. This is significant as it was important to make sure that the contractor undertaking the beach replenishment cooperated and worked with the contractor constructing the groynes.

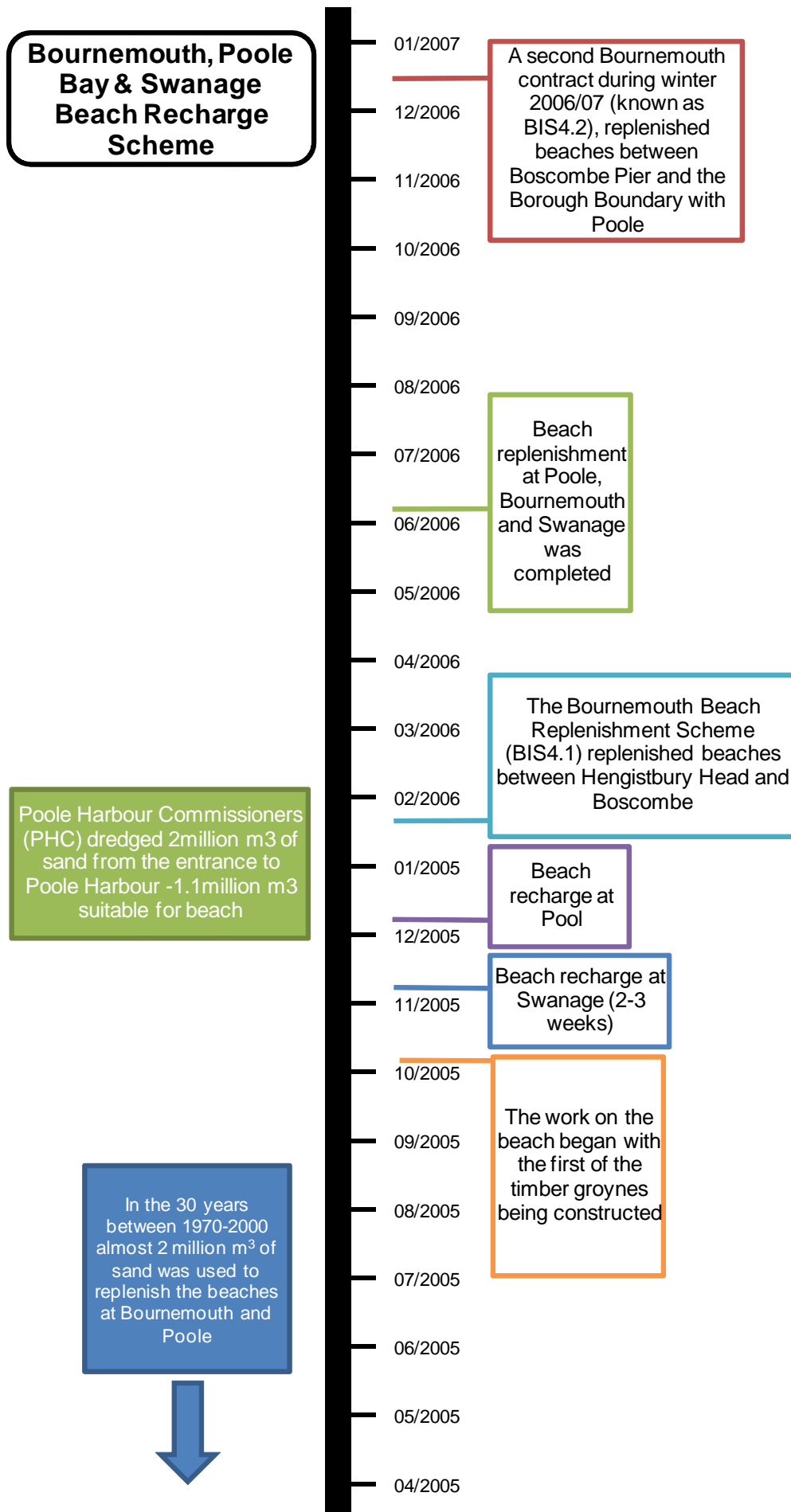


Figure 5. Timeline for the Poole Bay & Swanage Beach Replenishment Scheme

1.3 Partnerships

1.3.1 Building the Partnership

The partnership involved a collaboration between the three Coast Protection Authorities (BoP, BBC and PDC) and one private partner the harbour authority (PHC). BoP acted as lead Coast Protection Authority, PHC acted as the engineer for the dredging and the other Local Authority engineers lead for their sections of work.

The BoP Council was directly approached by PHC regarding this opportunity, and BoP then discussed the options of funding with Defra. The relationship in simple terms was one of 'supply and demand', mutual benefit for all parties. PHC could meet its own business needs such as its own client and maintenance requirements, plus this arrangement provided an outlet for the sand (as it was a huge amount), whilst the Local Authorities provided the demand for its beaches. Finally Defra as primary funder reduced the burden on its FDGiA budget. Therefore a 'win-win' situation built around existing knowledge of the area, contacts and strong relationships between all parties.

Unfortunately Government money to support this work was not programmed in the South West Region's MTP (Medium Term Plan); (a five year programme for flood and coastal risk management schemes), however a Defra Minister intervened to ensure this opportunity to save on tax payer funds could be acted upon.

1.3.2 Partnership Working and Governance

The partners have a strong working relationship with each other, which is fostered through The Standing Conference on Problems Associated with the Coastline (SCOPAC) which was established in 1986. SCOPAC was established with the aim of helping local authorities and others interested in the sustainable management of the central south coast of England and includes a comprehensive list of central south coast authorities see figure 2 and through this network opportunities for this beach replenishment project were identified.

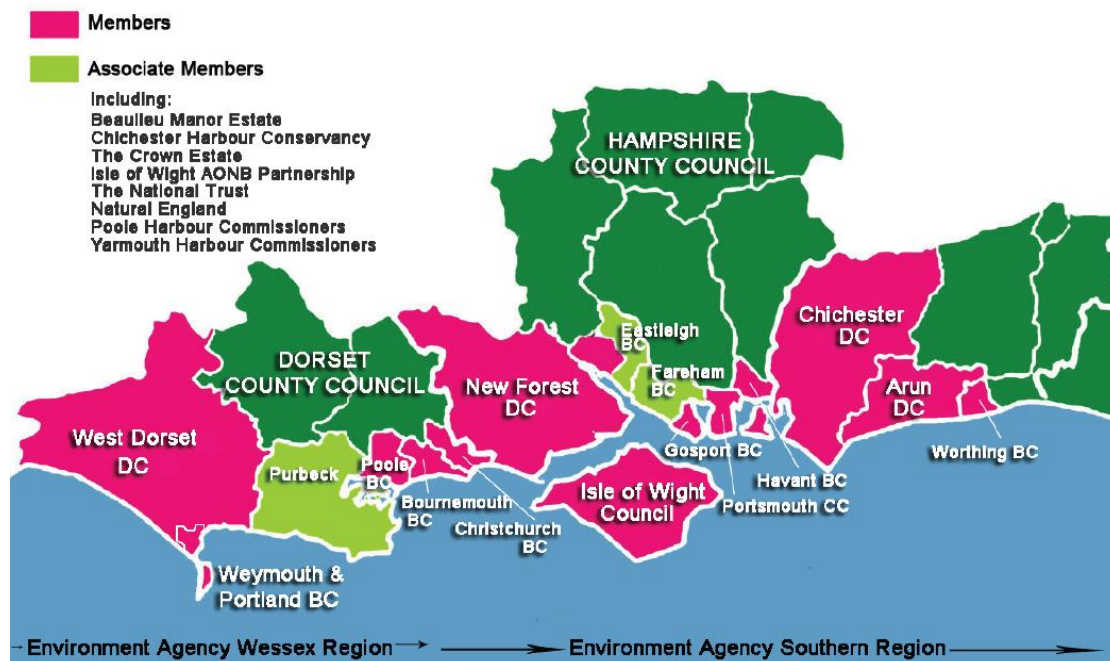


Figure 6. SCOPAC Membership. Source: <http://www.scopac.org.uk/membership.htm>,

Overall, partnership working between the three Local Authorities and PHC was defined as "excellent" (Harlow et al, 2010), "it is simply about getting the right people in the room to make decisive decisions" (Harlow et al, 2010) and SCOPAC helps to develop this experience locally.

There was a danger at the outset that contractual arrangements between the partnership could have become 'intricate and challenging', with complicated legal procedures. The partners aimed to keep the contractual arrangements as simple as possible; hence just two contracts were drawn up. The first contract was between BoP and PHC that involved an agreement for the payment of the dredging. The

second was between BoP Council, BBC and PDC. The arrangement was simply BoP paid PHC for the sand through agreement one and then charged the BBC and PDC for the sand through agreement two. There was a Memorandum of Understanding (MoU) between PHC and the three Councils but not legally binding. There was no formal project structure, but day-to-day decisions were made in discussion between the PHC and three Local Authority engineers.

1.4 Approvals, Planning Context and Legislation

The approvals were described as "difficult" and there were numerous duplications across the three councils, for example, PDC required 16 approvals and BoP and BBC required 26 approvals (Harlow et al., 2010). The consents were described as particularly challenging for PDC as door-to-door visits and agreements were required from the 157 beach hut owners and other parties with a legal interest in the beach which fed into the planning agreements. Planning permission was required for each Local Authority; this presented an administration burden to the partnership as there was a 'triplication' of documentation and duties required to gain planning consent.

The PHC had applied to the Secretary of State for the Defra under Section 34 of the Coast Protection Act 1949, for consent to deepen and improve the approach channels through Poole Harbour as this gave access for commercial shipping to the Port of Poole.

In accordance with Regulation 6(3) of the Harbour Works (Environmental Impact Assessment) Regulations 1999, the PHC were directed by the Secretary of State, to supply an Environmental Statement. BoP Council and PHC completed an Environment Impact Assessment (EIA) for the project to deepen the approach channels of Poole Harbour and use some of the resulting dredging for beach nourishment on beaches in Poole Bay.

A particular issue was gaining consent from Natural England, due to time delay relating to sign-off of the EIA.

The most difficult part of the approval process was obtaining a disposal licence from Defra to put the sand onto the beach. Defra did not consider this as one application but instead three applications had to be made. Approvals took a number of weeks and were obtained just before the proposed date for the commencement of the works. As mentioned in section 1.3.1 the funding from FDGiA had not been programmed in the MTP at that specific time and a Defra Minister intervened to make the money available to take advantage of PHC's programme.

In total the EIA took about 12 months longer than first anticipated and cost more than planned.

1.5 Funding Arrangements

The whole beach replenishment scheme cost a total of £5million and was funded by Defra FDGiA, this included paying Crown Estates for the use of sand. The Councils of PDC, BoP and BBC applied for funding from Defra FDGiA at same time but had to submit three different applications. The money was secured from Defra because there was seen to be cost saving from using the sand derived from the harbour. The cost/benefit ratio for Poole and Bournemouth was sufficient to gain FDGiA outright without the need for PHC dredged sand. However, in the case of Swanage the cost/benefit ratio was not sufficient to gain FDGiA alone, therefore the sand contribution from PHC increasing the C/B ratio to make it more viable (reducing the cost of the project).

Despite BoP and BBC receiving FDGiA outright, they worked together through SCOPAC for the benefit of the tax payer to minimise FDGiA costs.

The EIA for the dredging of the harbour cost more than first anticipated rising from an estimated £484,000 to £603,000. Over 75% of this cost was met by Defra via a Coastal Protection Act feasibility study, the remaining was paid by PHC.

It was estimated that between £8million and £15million was saved against what it would have cost if each Council had to buy shingle or sand from a commercial dredging site. By recycling the sand from dredging the cost of buying the sand from the crown estates was reduced by 50%.

The Councils of PDC, BoP and BBC now cover the maintenance costs.

1.6 Summary of Key Issues

- During the winter of 2005/2006, 1.1 million cubic metres of sand was dredged from Poole Harbour and pumped onto the beaches of Swanage, Poole and Bournemouth to protect them from erosion as part of a £5million coastal protection project;

- The cost / benefits ratios would not have been sufficient at Swanage if PHC had not contributed the sand;
- The approvals were described as difficult and there was numerous duplications across the three councils;
- Defra funded these necessary coastal protection works, however three separate applications were made;
- The beach recharge project had a number of partners, including Poole Harbour Commissioners (PHC), Borough of Poole (BoP), Bournemouth Borough Council (BBC) and Purbeck District Council (PDC);
- The contractual arrangements between the partnerships could have been complicated and intricate. But made simple as possible through a Memorandum of Understanding between PHC and the three local Councils; and
- The scheme needed Ministerial buy-in and Approval.

1.7 Lessons Learnt

- Overall the scheme was described by the partners as very successful, a "win, win situation" albeit a fortuitous one,
- The SCOPAC working group is an excellent forum to foster skills and share experiences, it also helps to develop relationships;
- Working in partnership saved between £8million and £15million over what it would have cost if each Council to carry out the work alone,
- Be aware that obtaining planning consent can take longer than you expect,
- Within the partnership there was an ethic to get the best value for money for the tax payer,
- The MoU was an important document (although not legally binding) helped to keep the contractual arrangements between the public and private partnership simple;
- "Placing a value on amenity and linking parts of the scheme up to get everything coming together at the same time is difficult and should be managed with care" (Harlow et al, 2010);
- "Natural England need to understand that the process of developing a scheme, gaining approvals and securing funding is very complicated and without their full buy-in to the scheme it can create huge problems" (Harlow, et al., 2010);
- "Keep the engineering simple" (Harlow 2010); and
- Engaging the right people for the different responsibilities is important (e.g. finance, and engineering).

1.8 References

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