

# “A PROBLEM SHARED” WORKSHOP

## Beach recycling



### 09:30 REGISTRATION AND REFRESHMENTS

- 10:00 Introduction to the workshop from **Andy Bradbury**  
(Chairman of the Southern Coastal Group)
- 10:15 *Questions*
- 10:20 Pevensey Bay by **Ian Thomas**  
(Pevensey Coastal Defence Ltd)
- 10:45 *Questions*
- 10:55 Hayling Island by **Marc Bryan**  
(Havant, Portsmouth and Gosport Coastal Partnership)
- 11:20 *Questions*
- 11:30 **BREAK**
- 11:40 East beach/West Bay by **Neil Watson/Simon Hills**  
(Environment Agency)
- 12:05 *Questions*
- 12:15 **LUNCH**
- 13:00 Hurst Spit **Peter Ferguson**  
(New Forest District Council)
- 13:25 *Questions*
- 13:35 Bournemouth **Dave Harlow**  
(Bournemouth Borough Council)
- 14:00 *Questions*
- 14:10 Round the room discussion
- 15:00 **CLOSE**

## Delegate list

<b>Name</b>	<b>Organisation</b>
Andy Bradbury	NFDC
Peter Ferguson	NFDC
Ian Thomas	Pevensey Coastal Defence Ltd
Neil Watson	EA
Simon Hills	EA
Dave Harlow	BBC
Marc Bryan	H,P and G partnership
Bret Davies	H,P and G partnership
Caroline Timlett	H,P and G partnership
Sam Cope	NFDC
Mark Stratton	CCO
Joey O'Connor	CCO
Andrew Colenutt	NFDC
Tom Mortlock	CCO
Dave Picksley	CCO
Gareth Grewcock	CCO
Marion Bolster	CCO
Clare Wilkinson	CCO
Travis Mason	CCO
Sally Hawkins	CCO
Stuart McVey	CCO
Steve Woolard	CBC
Scott Mills	FBC
Uwe Dornbusch	EA (ASM)
Andrew Crates	EA (ASM)
Tom Dauben	EA (ASM)
John O'Flynn	EA (ASM)
Peter Amies,	EA (ASM)
Barry Killner	EA (OPS)
Mike Ford	EA (OPS)
John Parsonage	EA (OPS)
Phil Prydderch	EA (OPS)
Richard Fuller	EA (OPS)
Becky George	EA (ASM)
Charlotte Moll	EA (ASM)
John Tilley	EA (OPS)
Simon Thompson	NE
Ben Murray	West Dorset and Weymouth
Dave Robson	PBC
Carol Third	PBC
Tara Leigh Eggiman	Scott Wilson
Mike Goater	PDC
Sam Box	Halcrow
Matthew Penny	EA
David Lowsley	CDC
Guy Hardacre	Raymond Brown

## **Andy Bradbury's talk**

**1) Mike Goater** – Were any planning permissions needed when you sourced sediment from Shingles Bank for the Hurst Spit beach recharge?

**Andy Bradbury** – MMO permissions needed below high water and planning permission needed.

## **Ian Thomas' talk**

**1) Tom Mortlock** – How was the 1:400 year storm event calculated?

**Ian Thomas** – The calculation of the storm event and the design beach profile needed to withstand a 1:400 year storm event was calculated by physical and numerical modelling by HR Wallingford. However, the contract simply required them to maintain a certain crest elevation and width and ensure no breaching occurred.

**2) David Lowsley** – How would you rate the effectiveness of using tyre bales in place of sediment during sediment recharge?

**Ian Thomas** – The tyre bales free up sediment by displacing areas needed to be filled by sediment during recharge. Flume tests by HR Wallingford suggested that the porosity of the tyres act similarly to shingle. Eventually however there will be crest rollback, exposing the tyre bales.

**3) Uwe Dornbusch** – Did you consider the effect on wave run-up elevation when re-profiling the recharge sediment?

**Ian Thomas** – Yes, we are aware that any re-profiling of the seaward slope will affect wave run-up elevation and overtopping volumes. However, the contract that we are working under does not consider overtopping as such, only breaching. We have an obligation to prevent breaching; not necessarily overtopping

## **Marc Bryan's talk**

**1) EA Representative** – The Environment Agency has an agreement with Marine Management Organisation (MMO) to waive FEPA licence fees, otherwise it would be simply moving money from one Government department to another. This arrangement has been in effect for the past 6 months. However, Local Authorities still need to pay and the process for licence applications is too long.

**2) Andy Bradbury** – During the Emergency Works needed at Milford after seawall/prom collapse in August 2008, NFDC needed emergency funding and licences to carry out beach works with immediate effect as there was a danger of loss of life and property if the works were not carried out.

**General consensus for SCOPAC group to express dissatisfaction to MMO about lengthily process for FEPA licence application and disparity between charging Local Authorities but not the Environment Agency.**

**ACTION 1: John O'Flynn (Environment Agency) to take it forward.**

**3) David Lowsley** - Limits of the old BMP area seem not to extend to the Ness – is this correct?

**Andy Bradbury** - It is not uncommon to see odd limits to original BMP sites along the South Coast.

**Marc Bryan** - Yes, this is correct. The extent of the old BMP was only the deposition areas to which we bring material back to. It did not cover the extraction areas from which the material is sourced.

## **Neil Watson and Simon Hills' talk**

**1) Dave Harlow** – Was shingle being extracted from the site in 1974?

**Neil Watson** – Probably, yes.

**2) Tom Mortlock** – How often do you recycle and do you need permission every time?

**Simon Hills** – There was a major recycle operation in 2001, 2003 and 2010. The permissions last for 3-5 years.

**3) Guy Hardacre** – From the photographs it would appear there is more sediment on the east side (East Beach) which seems odd given the sediment transport is in the opposite direction.

**Neil Watson** – This is relict sediment build up.

**4) Bret Davies** – When will the sediment recycling operations stop?

**Simon Hills** – The Shoreline Management Plan 2 assigned a Hold The Line policy for the next 100 years. The sediment recycling will therefore continue but possible at a lower frequency.

**5) Bret Davies** – Was an alternative policy considered for the site?

**Neil Watson** – We need to manage the beach to ensure the Standard of Protection is recovered.

**6) Mark Stratton** – How much was spent on the scheme and reports?

**Simon Hills** – The recycling costs were £86,000 and the report costs were £65,000.

## **Pete Ferguson's talk**

**1) Bret Davies** – Could you just explain the role of the spit in terms of its coastal defence properties and what role or purpose it serves?

**Pete Ferguson** – The spit shelters the salt marsh behind and many nature designated sites. It also dissipates wave energy that would otherwise reach Keyhaven; it therefore protects the area from flood inundation and wave action.

**2) Mike Goater** – From your talk you mention that the recycled sediment is placed along the back of the spit. What about in front of the castle where there is hardly any beach at all?

**Pete Ferguson** – We do sometimes add sediment to the front of the spit. Over the last few years there has been a build up along parts of the spit but a reduction at the castle. The castle is owned by English Heritage so it is privately owned. The defences are poor quality and I believe it is something that they are looking at. New Forest District Council and English Heritage conducted joint works when the spit was engineered in 1996 however English Heritage could not afford to complete works around the whole site at the time.

**3) Caroline Timlett** – If Hurst Castle benefited from the 1996 renourishment then why don't English Heritage contribute?

**Andy Bradbury** – The project was funded from capital works and as mentioned they could not afford to carry out any works themselves.

**4) Uwe Dornbusch** – The haul route you use for the recycling at Hurst looks very narrow, what are the risks of the trucks slipping off the side of the route?

**Pete Ferguson** – Machines do blade through a path very carefully before the trucks use the route. One truck did topple over during one recycling event however they are designed so as the truck tips but the cab stays upright.

**5) Tara Leigh Eggiman** – I noticed the price of moving material for other sites we have heard about today is between £1-£3 per m<sup>3</sup> per km. However at Hurst the cost was £7. Why is this?

**Pete Ferguson** – The cost I gave there was for the whole job, if I were to present it per kilometre it would bring it down to around £4-£5 per m<sup>3</sup> per km. It is still higher as this is a particularly complex site when compared to those we have seen this morning.

**6) Guy Hardacre** – I note from your talk the works focus on the back of the spit. What about the environmental considerations and covering up of vegetated shingle.

**Pete Ferguson** – The rear slope is prime for vegetated shingle. The information we have now regarding the habitat maps is only relevant right now. We believe that the works don't damage the habitat but actually encourage growth due to seed movement etc and we believe we have seen an increase in vegetated shingle over recent years. With the new habitat surveys in place we will be able to say with more accuracy how things are changing in the future.

## **Dave Harlow's talk**

**1) Dave Lowsley** – The seawall is essentially redundant at Bournemouth. Have you considered trapping sand further seaward to avoid build up on the sea wall? At Cakeham this dune building has worked rather successfully.

**Dave Harlow** – We have considered this yes. At Bournemouth we have always replenished for coast protection and not amenity as many people believe. We did discuss encouraging dunes at the back of the beach, but there were concerns that the higher dunes would result in more wind blown sand reaching the promenade. I believe this method had been employed at Sandbanks though?

**Dave Robson** – Yes this has worked too well as every year we have to plane off the tops of the dunes as the private home owners do not want the public looking in on their expensive gardens.

**2) Neil Watson** – There is a dilemma here for Bournemouth. Amenity vs. coastal protection. You say it costs £200k to move sand off prom each year. Would it be more effective to move the excess sand to the starting point of littoral drift instead of pushing it back down the beach.

**Dave Harlow** – Yes this might be possible but public safety is an issue, we cannot transport sand along the promenade during the day. This problem of sand build-up is the price of the success of the recharge.

**3) Pete Ferguson** – Have you considered using a bund behind the railings to trap the sand.

**Dave Harlow** – No we have not. Poole Council tried this a few years ago and the barriers were damaged by vandals and the wind. We are interested in getting an MSc student to look at the problem of wind blown sand at Bournemouth.

**4) Dave Picksley** – Have you considered removing the railings and building a small retaining wall?

**Dave Harlow** – No this would be extremely expensive and they do keep 4x4 vehicles off the beach.

**5) Joey O'Connor** – Have you considered using vegetation to trap the sand

**Dave Harlow** – Marrum grass was tried at one stage but it never really took.

**6)** Would flood barriers filled with sand work as a temporary barrier in the winter. Also have you considered Greentime for Crime; an initiative to get environmental criminals to work off their debt to society through green community service?

**Dave Harlow** – We did look at removable barriers but the frontage is over 8.5km so it proved far too expensive an option. The community service initiative would be something I would be interested in looking into.

**7) Mike Goater** – What happens to the material that gets blown up onto the road? Is this taken back to the beach?

**Dave Harlow** – Once the sand reaches the highway unfortunately it is out of our reach. It is considered contaminated and taken to the tip.

## **Attendee questions**

**1) Mark Stratton's question, “When planning a recycling or renourishment event, what drivers are used to determine the best way to deliver material to the beach?”**

**Ian Thomas** – We drop the sand in front of the vessel just beyond high water and let the sea move it onshore.

**Andy Bradbury** – We did a similar thing at NFDC.; letting the sea bring the sediment onshore allows for a better grading of the sediment.

**David Harlow** – At Hayling in 1985 the pumps were not strong enough to get the material onshore from the barges so material was dumped.

**Ian Thomas** – I guess the cost is the real driver for where material is placed. As a contractor it is all about achieving a standard of protection and it's the cheapest method of doing this which prevails.

**2) Dave Picksley's question, “Following beach recharge and recycling, should the beach be compacted as much as possible by machinery or is it better to allow the material to settle naturally?”**

**Andy Bradbury** – In my personal opinion I would say do not compact at all.

**Bret Davies** – I would say it's important to tidy up the site but not to compact it. Compacting can equal cliffing and this costs money to resolve.

**Ian Thomas** – I would say that on a single tide you can lose up to 15% of the beach so I would like to see some level of compaction. I'm assuming this is really a site specific question.

**Mike Goater**- It would be another good project for a student, to study the varying responses of a beach both with and without compacting.

**3) Steve Woolard's observation for Mudeford Sandbank**

A description of a recycling event. 4000m<sup>3</sup> was recycled five years ago and placed along sandbanks.

**4) Tom Mortlock's question, "If the Shingles Bank is building up above the MHW line, who owns the sediment? Also, is it likely that beach recharge in Christchurch Bay is feeding the build up of Shingles Bank?"**

**Andy Bradbury** – The shingles bank was actually a source for the recharge in 1996. It is still growing as a shingle resource. We estimate there is 18-20k m<sup>3</sup> stuck out of the water at Mean Low Water and 42million m<sup>3</sup> in the whole bank. It is owned by the Crown Estate.

**5) Joey O'Connor's question, "Is there an economic case to be made for introducing fine-grained sediment to increase the amenity value of a shingle dominated beach, or is it money down the drain?"**

**Dave Harlow** – There was a proposal at Hayling in 1985 to use finer material for an amenity beach but this was not possible from a coastal protection angle. Finer material meant faster loss here. You always try to match the D50 of the beach you are working with.

**6) Marion Bolster's question, "When introducing coarse grained sediment to a fine grained beach, how is this met by the general public? What can be done to minimise the impact and changes to the beach this may cause?"**

**Dave Harlow** – The general public prefer sand. There was a 3yr newspaper campaign against Bournemouth Borough Council due to gravel on the beach, however, years ago the beach was all gravel.

**7) Andrew Colenutt's question, "Can Operating Authorities, NE and MMO consider making opportunistic use of sediment for creating offshore islands and enhancing high tide roost sites to provide mitigation measures for habitat losses as this could make beneficial use of material that is not suitable for recharge on amenity beaches?"**

**Andy Bradbury** – This is actually a very topical question.

**David Lowsley** – A good example is at Medmerry. The EA want to create a site in the flooded area so is there a justification to use sediment from the site for regions within the scheme.

**Tara Leigh Eggiman** – In general it needs to be exactly the correct sediment for the birds.

**Simon Thompson** – I think there are too many other issues here. The effects of putting the sediment on a designated site would need to be considered, however, in principle Natural England would support roost re-creation.

**8) Travis Mason's question - "Has anyone applied for a licence using the new MMO system yet? If so, how did they get on?"**

This question was addressed earlier in the workshop. Answers were as follows;

**EA Representative** – The Environment Agency has an agreement with Marine Management Organisation (MMO) to waiver FEPA licence fees, otherwise it would be simply moving money from one Government department to another. This arrangement has been in effect for the past 6 months. However, Local Authorities still need to pay and the process for licence applications is too long.

**Andy Bradbury** – During the Emergency Works needed at Milford after seawall/prom collapse in August 2008, NFDC needed emergency funding and licences to carry out beach works with immediate effect as there was a danger of loss of life and property if the works were not carried out. These essential works went ahead before licence permissions were given, although the MMO were advised immediately of the need for NFDC to use their emergency powers.

**General consensus for SCOPAC group to express dissatisfaction to MMO about lengthily process for FEPA licence application and disparity between charging Local Authorities but not the Environment Agency.**

**ACTION 1: John O'Flynn (Environment Agency) to take it forward.**

**9) Claire Wilkinson's question, "If the recycling site becomes inhabited by protected species, would the recycling still take place or would the protected species be considered more important and the sediment be left in place?"**

**Andy Bradbury** – This is a real problem from a management point of view. We would not get permission at Hurst as some of the vegetation is nationally scarce.

**Simon Thompson** – I would be interested to see what happens at Hurst and whether the recycling will increase the amount of vegetated shingle. We would need to be pragmatic about the situation and if a small loss of vegetation from the extraction site resulted in more vegetated shingle elsewhere I'm sure some arrangement could be met.

**10) Scott Mills's question, "Is sediment recycling sound expenditure? Is this a sustainable approach to coastal management? And can we as engineers and coastal managers justify the spend of public funds on an approach which could wash away within a couple of years? How would**

**experienced managers counter these questions if asked by a member of the public?”**

**EA Medmerry Manager** – The public might think you are pouring money into the sea but it is always a financial decision (Cost/Benefit of not doing it). It is the best method available right now.

**Dave Harlow** – A sea wall causes loss of beach. Beach replenishment is always the best method. At Bournemouth it would cost £100million to replace the sea walls and £15 million to maintain the groynes. So what is best? Obviously to maintain the beach.

**Andy Bradbury** – We need to make a better case to the public as a group on the merits of beach recharge vs constructing sea defences. We need to be honest and open about the costs and benefits. We need to do a PR job on this one.

**11) Gareth Grewcock’s question, “Where low beach levels threaten the stability of old seawalls, is the cost of beach recycling to protect these old features justified when maybe it would be cheaper in the long term to just build a new sea wall?”**

**Andy Bradbury** – Sea walls cost too much money and actually rely on beaches for integrity.

**Bret Davies**- At Portsmouth we are taking a different approach in the future with the beaches providing the primary structure and defence. This will mean the amenity value of the site also increases.

**12) Mike Goater’s question, “Health and safety of sea based operations are controlled through legislation administered by the Maritime and Coastguard Agency whereas the shore based operations would be controlled through the Construction Design and Management Regulations and would probably be notifiable to Health and Safety Executive. Beach re-nourishment will probably involve a bit of both. What advice would you give as to the best way of dealing with this?”**

**Andy Bradbury** – There is a strong demarcation between the land and sea in terms of regulation. It is not integrated and legislation does not allow it to be.

**Ian Thomas** - We have no account for the man on the dredger

**13) Ben Murray’s observation, “Re-nourishment operation at Lyme Regis”**

**Guy Hardacre** – Particle size and grading is important. As a contractor you consider what is available rather than what you’d like. The costs of changing a D50 by 2-3 mm can be huge.

**Andy Bradbury** – Sometimes this is driven by modelling studies and we tend to aspire to the technical side of things. What we really should be doing is designing for what's available not what's ideal.

**14) EA Observation showing machinery used**

**Barry Killner** - We prefer the 360 machine.

**Andy Bradbury** – It depends on where you are digging.

**Guy Hardacre** – Flexibility is the key.

**15) Uwe Dornbusch question - Sequence of photos showing cut back.**

**Bret Davies** – Clearly the sea wall here is causing interference

**ACTION 2: ALL. Uwe Dornbusch asked** all the local authorities to email him the costs of their recycling exercises please?