




From: Roger Spencer
Sent: 01 August 2016 18:24
To: Daniel Vick; Simon Davis
Subject: P/97/15/PL

Dear Messrs Vick & Davis,

Thank you for the opportunity to respond to the above application, including the 'Further Information...' document of May 2016 by ABPmer.

When considering the overall merit of coastal defence schemes, especially those looking to attract Flood Defence Grant in Aid (FDGiA), it is normal to consider the scheme for Technical, Environmental and Financial soundness. This scheme may not now be looking to attract FDGiA but the three-pronged consideration process still has some worth.

The Environmental aspect will be handled under the Planning process but there will also be overlap, in that Planning process, with the other two above headings. Accordingly, in this response I will endeavour to confine comments to Planning consideration but there will inevitably be technical and financial issues reflected upon; especially but not limited to the coastal process and buildability aspects of the proposals.

I am largely in agreement with the history of the site and how the situation arose as set out in the Application documentation. I am also of the opinion that cutting the spit will have the desired effect of relieving the scouring effect from in front of the residential area of Pagham Beach; what is less clear is the time to the onset of full benefit of the operation (more is said on this below).

Further, it should be acknowledged that overall, there is a great deal of uncertainty of the likely evolution of the coastal processes in this dynamic situation. This has led to the policy of Adaptive management. The uncertainty includes not only the forcing factors (e.g. weather/wave conditions) but also the natural littoral drift (available volume of shingle in the system); it is unknown whether the volume will increase/decrease in the future. The growth of the spit is likely to have been caused by an increase in littoral transport – this could reduce to the recent past volumes or indeed increase further.

The various effects could have unpredicted effects on the new cut arrangement, ranging from the formation of a secondary, seaward spit (which could have the effect of deflecting material off-shore), the cut not developing as envisaged, to a channel blockage (partial or full).

The project objectives are set out and used in the latter Appropriate Assessment [AA] – these are the Applicant's objectives and the AA outcome may be skewed slightly from what a coastal defence scheme would normally see as objectives.

In the previous configuration of the spit (ie pre-April '16 breach) there were a number of 'uncertainties' noted by the Applicant/Agent in the likely effects of the proposal; some of these have may have reduced or been removed by the natural breach that has recently occurred; some may have been removed and some changed. I note below what I see as the main current risks in terms of coastal processes. I will then go on to look at what I see as delivery/operation uncertainties.

The application seeks to be re-establish the outflow in its 2003 location and in doing so to remove the local scouring effect in front of residential property and thus reduce the risk in the immediate area and to allow a reconnection of the sediment transport paths. This reconnection would allow shingle 'locked up' in the spit and the natural available littoral drift to travel onto the main part of Pagham Beach. It is unclear how long this process would take and therefore how large the 'lag' would be between implementation and full beneficial effect.

Some guide to this can be gleaned from the effects of the recent breach – we have not yet seen the onset of close-shore transport yet, although there may be near-shore transport on the low tide banks. The point being that I very much doubt that there will be an instant change in the condition of the main part of Pagham Beach following a cut – the effects may not be seen for some time before full onset.

The more formalised cut arrangement may deflect water and sediment flow further offshore, detracting from a shore 'hugging' path – the uncertainty here is a) the magnitude of this potential deflection b) the distance over which this deflection would continue (i.e. where the flows would revert to a close shore condition). The shingle might come back onshore quite quickly (e.g. onto the severed part of the spit); onto Pagham Beach or even bypass Pagham altogether and come back on at Aldwick in time.

The Applicant has stated that it is likely that the channel will reach a natural equilibrium state within a few sets of spring tides. I am somewhat confused as to why a very formalised, designed cut is proposed and expounded as a viable solution for 8 years when the channel is likely to change in a matter of three months.

With the recent breach there is not only a redirection of the channel flow(s) but also a general lowering of the spit from the newly formed channel back towards the root of the spit (and the proposed cut location). By blocking the existing channel immediately inside the new cut, there will still be flow of water into, and wave action on, the gap between the severed part of the spit and main beach.

There is no precision possible in the prediction for the evolution of the spit overall; the recent breach has reduced the length of the now connected spit and the area of this will reduce even further under these proposals. The likely evolution of this much reduced downdrift 'stub' and the associated cut-back to the landward side of the existing channel is not well described; there are risks of the 'stub' portion evolving in an unexpected way.

Construction methodology – the Steel sheet Piling (if required) crest is stated to be at a level of 0m OD and a toe at -3m OD therefore the piles would be 3m long. I do not think it would be possible to pitch and drive ~100m of piling over one low tide and even on a neap tide. The flows in and out of the harbour would be accelerated through the unconstructed portion of the dam, increasing flow velocity and scouring, both to make the channel deeper and progressively wider. A similar channel dynamic has been experienced here previously, between the growing spit and the fixed groyne. The channel would tend to migrate beyond the free end of the piling leading to a potential for uncontrolled loss of the spit. This is not to say that a blocking of the existing channel isn't possible but I would caution against the proposed methodology – perhaps, but not limited to, using rock bags that could be prepared and deposited in layers over a few tides. To form the working causeway – the problem with that being the sourcing of the raw material to fill the bags.

The process of stockpiling material dug from the new cut arrangement will have to be considered very carefully now that the spit has breached. The area of the connected spit is becoming increasingly small and may not be sufficient to hold the material dug before it is pushed into the channel to form the block. The Application does not include for rebuilding the spit to enable a stockpile to be formed. We have recently received laser scanned data for the beach

monitoring team and the is being assessed currently – that data has also been supplied to the Applicant for him to undertake his own assessment of the viability of his methodology.

Uncertainty on the future management of the new arrangement. Notwithstanding any definite requirement of Natural England / RSPB for the cut to be managed in a particular way, the Applicant has suggested a stakeholder group and a traffic light system. This is very commendable but it leaves questions which I suggest would need to be suitably conditioned in any approval of this Application:

– who does the work – it is currently unclear who would undertake the work (i.e. would be the client) of cutting the spit should this application be approved; it is even less clear who would be the client for any required future maintenance. This may not be a direct Planning consideration but there should be in place a regime for dealing with the future and the Client for this should, I believe be established to ensure viability/certainty of delivery.

- who pays – there is very little chance of obtaining any Flood Defence Grant in Aid for the works now that the spit has breached naturally. The community is gathering funds to undertake the work and for a nominal re-cutting operation and the predicted ongoing maintenance/wardening. There is a risk that the 'community' will want to get on with the initial cut without the funding being in place for all the future potential operations and to have a contingency to deal with the uncertainties.

-what permission are required outside of any deemed given by virtue of a consent for this application – as above, there may be future maintenance requirements that are outside of the scope of this Application – this could have an impact on undertaking further work. The Applicant and the community should not feel that there is carte blanc for any future maintenance operations or indeed any now that are outside the scope of the Application but which might well help manage the situation as it is found to be at the time,

Mitigation/compensation – it is reported that other interested parties are now satisfied with the arrangements for providing compensation. I do not believe that the proposal to dig the separating channel to -0.5m OD will mean that the island will be an island at all states of the tides; thus predators will be able to gain access to the new tern habitat.

The AA has determined that there are no identified alternatives. The adopted policy for the area remains Adaptive Management and whilst the Applicant's objectives may not be met by this policy or various other alternatives, the area could be managed by regular recycling / importation of shingle as we have done in the past. Only those short-listed alternatives put forward a previous consultant working on the project would seem to have been considered. The natural breach that occurred in April and which has continued to evolve, may remove the need for this or any work being required – this uncertainty is noted above.

In summary, the cut is likely to have the desired effect but the time to onset of the benefits and the longevity of those effects are uncertain. There are uncertainties in the potential evolution of the spit and the area in general. The practicalities of undertaking the work with the methodology suggested needs to be fully assessed. The 'client' status and the ongoing maintenance/wardening arrangements require suitable conditioning and the precise arrangements for the mitigation need to be carefully conditioned.

Regards,

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