Thoughts on East Beach

This is to be considered a working document which might form the basis for recording information and as a reference to check if we are getting distracted from the basics. I hope people will want to add to it.

As we reassess the BMP there are both facts and assumptions in play, it is important we are clear as to which is which.

1. It has been decided for good reasons that the strategy at Sidmouth should be 'hold the line'.
2. This causes conflict with the WHS designation which requires that nature takes its course.
3. The loss of Pennington Point will expose the town to damage from the sea.
4. At an earlier stage the CRAG group were willing to lose garden to allow the cliff angle to be realigned.
5. The definition of 'Sidmouth' excludes the houses on Salcombe Hill.
6. Salcombe Hill contains fossils of global importance.

The first four are facts, the other two may be facts, I don't know.

The assumptions are, amongst others, that

1. The integrity of the WHS would be seriously damaged by having the 'hold the line' designation extended to the eastern extent of Sidmouth housing and that this could put the WHS designation at risk.
2. We can not challenge the assumption above.
3. We have to accept the word of experts about the potential number of fossils to be found in the cliffs
4. The finding of fossils is in some way our responsibility. We have no idea of how many fossils have been found in the last 10 years of frequent falls, we don't know if the WHS is contacted every time a cliff fall occurs and if they are whether they always send someone to sift through the rubble. If they don't come every time there is a fall then the fossils are not as important to them as they claim.
5. The EA will be able to build flood defences along the Sid in a timely fashion when Pennington Point is lost
6. The erosion will not continue rapidly up the east side of the Sid if hard defences are put in place, losing more of Salcombe Hill and creating greater exposure for flooding to occur. And causing the new bridge to fail.

I'm sure we can discover many other assumptions as we go forward with the reassessment, we constantly need to ask 'why'.

Design process

If we scrap, in our thoughts, our previous ideas and the reliance on 'how it is always done' we come back to the question 'what do we want to achieve?'

I believe the answer to that question is that

- We want to retain or improve the town's attraction to the tourist trade and preserve the listed buildings

- We want to maintain the Sidmouth community with all that that implies, maintaining jobs, protecting houses, etc
- We want to persuade the Government to give us the money to achieve the above.
- We don't want what we do to cause problems somewhere else.

We also have some current problems we would like to solve in an ideal world.

- We want to reduce the risk to people on the beach to the east of Sidmouth
- We want to have a better and more accessible town beach
- We want to make it easier to launch the lifeboat
- We want to make the beach as safe as possible

We also want to do the above without compromising the sea activities we currently have, and to do it in a way that is sustainable both for the environment and future residents of Sidmouth and East Devon.

Constraints

Anything we do has to

1. Meet the Aims and Objectives
2. Be acceptable to outside agencies
3. Be eligible for funding
4. Not be a danger to navigation
5. Not damage the underwater ecology and if possible enhance it
6. Not be a hazard to residents or visitors
7. Rely on proven technologies as much as possible to avoid expensive failures
8. Be as final a solution as is possible so we don't have to keep tinkering with it, or to be cheap and easy to tinker with.
9. Not cause significant damage elsewhere

Priorities

The priority has got to be protecting Salcombe Hill and this seems to have a way forward at the moment with the possibility of a temporary structure, but can we take this further?

We know that cliff falls occur from both the sea undercutting and from water in the cliffs from rain and runoff. If we stopped just one of those inputs erosion would still occur but at a slower rate.

Slower erosion is acceptable to the WHS.

WHS wants a natural looking cliff with access to fossils, we want an east beach which is not a danger to tourists, CRAG wants to save their houses. Is there a way we can achieve all these?

I believe we can if we combine technologies in an inventive way. However, this would rest on whether CRAG is still willing to have some loss of garden to allow the cliff slope to be reduced.

Assuming that willingness we can use a revetment a distance from the cliff and collapse the cliff over it to both hide the revetment and expose potential fossils. The new cliff would be protected from erosion by a geotextile tube off shore which would help to build up a sandy beach in front of the new cliff as well as slowing waves.

It might be that we needed a double row of tubes but given that they are so cheap that would stay within the funding I would have though.

We can collapse the cliff by having a fire fighting barge off the beach and using the high pressure hoses to remove a wedge at a height to be calculated, thus causing a fairly controlled yet natural appearing fall.

Our next priority would be placing a geotextile tube off town beach, when we had seen how it was working on east beach and removing the rock groynes which are a hazard. The rock from this could either be used elsewhere of sold.

I realise that this piecemeal way of doing things as you would in the private sector is not the way the public sector works, but I believe that if we applied for and received funding for the whole scheme it should not be impossible to get East Beach done first, and quickly, and make the work at Town Beach phase 2.

The work at East Beach could be started in summer with placing the rocks and geotubes; and a shallow draught fire barge (such as those used on rivers, brought in during calm weather in winter to start the process which bad weather would continue, so that by spring the cliff looked fairly natural.

The images on the next page are my ideas of layout, from a point of ignorance!

The first image shows that the length of Salcombe Hill which needs protection is less than half of the whole frontage of Town Beach.

The second one is just a demonstration of the western limit where we can afford to lose lots of land without impacting any dwellings or communities for miles eastward.

The third one is a rough idea of where I think we would need to collapse the cliff to and where the Geotube might be placed. As it is such a relatively short stretch and cheap technique we can afford whatever contour we think best without worry about limiting the length we have to play with.

Mary

The two red lines are the same length,
the blue cross line shows the mid point of the second line

Assumptions
the green line shows the flood flow from the river in spate
the pink line shows the length of cliff needing regrading and the position of revetment
the blue line shows a geotextile tube in water deep enough to take it and shaped to
guide flows to minimise the effect of terminal erosion. in the normal south west movement