THE MERSEA HARBOUR PROTECTION TRUST

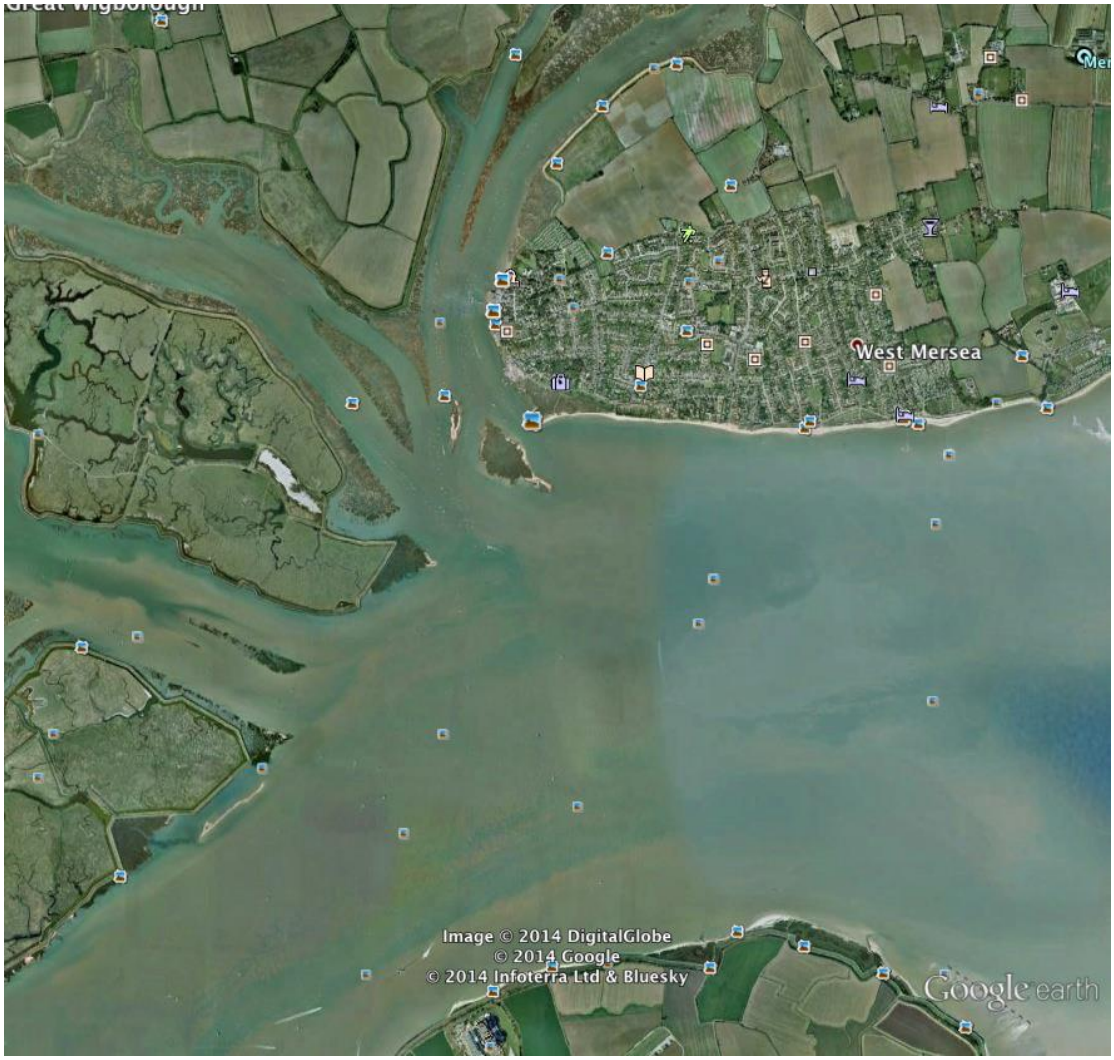
EXECUTIVE SUMMARY. Draft 8. Dated 01 DECEMBER 2016.

PROPOSED CLIMATE CHANGE ADAPTION RECHARGE PROJECT

Mersea Harbour and Tollesbury Wick

Protection to Mersea Harbour and Habitat for BAP Species Little Tern and European Flat Oyster

Joint venture with RSPB and Essex Wildlife Trust



" The same regions do not always remain sea or always land but all change their condition in the course of time".
Aristotle, 384 – 302 B.C.

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1. Introduction

- West Mersea harbour is an area of some 16 square km of sheltered tidal water creeks, saltmarsh and mudflat on the north bank of the Blackwater estuary in Essex. It exists because of the physical protection from storm waves provided by the islands of Cobmarsh and Packing Marsh and Old Hall Point peninsula. These natural saltmarsh wavebreaks have been eroding for centuries as the coast responds to isostatic adjustments (land sink and sea level rise) from the previous Ice Age. Tollesbury Wick frontage has lost all of its fronting saltmarsh and is now protected by a previous Environment Agency recharge wavebreak.
- But the erosion process is accelerating due in part to anthropogenic influences including an increase in episodic storms from climate change. This detrimental impact is predicted to escalate with high tide storm waves causing the vast majority of erosion. With the decrease in size and eventual loss of these protecting natural points the harbour will be exposed to higher and stronger wave forces than it has ever experienced. The habitat and assets that comprise the harbour will rapidly decline.
- The harbour is defined by some 22km of sea walls that protect an estimated flood plain area of 650ht including 296ht of the RSPB Old Hall bird reserve, the Essex Wildlife Trust farm reserve at Abbotts Hall and the National Trust Copt Hall farm reserve. The harbour creeks include thriving Native oyster cultivation areas.
- Comparison between 1840 and current OS maps show that Cobmarsh has eroded from 12ht to 5ht, Packing Marsh 3ht to less than 1ht, Old Hall Point from 40ht to 18ht and Tollesbury Wick has lost all its protecting southward facing saltmarsh. All of these eroding areas have been important nesting sites for endangered birds, including the rare and declining Little Tern. Cobmarsh alone eroded by 4m on its exposed southern shore in the winter of 2013/14.
- In addition to the harbour's international importance for conservation is the relevance to local infrastructure, employment and housing. Some forty residential and commercial properties are on the immediate waterfront including a public jetty, two boatyards, four restaurants, sail making company, yacht chandler, public house hotel, two sailing clubs, two engineering companies, a publisher and a local shop. There is also a thriving commercial oyster cultivation industry and commercial fishing fleet with some 14 boats registered. A further eighteen shore connected houseboats are lived in full time. It is estimated that approximately eighty full time jobs rely directly on the harbour throughout the year.
- In recognition of the importance and value of West Mersea Harbour the Environment Agency (EA) in 1998, funded the placement of a mix of stone and sand with 30k m3 to the island of Cobmarsh, 5k m3 to Packing Marsh, 36k m3 to Old Hall Point and 50k m3 to Tollesbury Wick. The material source was navigation improvement dredging from Harwich Haven Authority (HHA).

- This project, although successful in managing the erosion, was never completed with only half the original quantities placed ie a total of 122k m3 placed of the original planned 220k m3. As a consequence the erosion and threat to Mersea Harbour continues.
- The Environment Agency no longer has the resources to undertake a similar project.
- If no remedial action is taken and if the natural wavebreaks that protect the harbour do erode during the next 50 to 100 years under climate change increased storminess scenarios, then losses of the built asset could amount to some £32 million, the harbour would be unusable, jobs would be lost and the breeding habitat for protected birds and Native oyster cultivation areas will become extinct.

2. Project Objective

- To promote for the benefit of the public the conservation, protection and improvement of the physical and natural environment in the area of West Mersea Harbour, Essex, in particular but not exclusively by:
- protecting West Mersea harbour including the Biodiversity Action Plan (BAP) European Native Flat Oyster beds from excessive erosion by climate change induced storm waves but still allow natural coastal process to apply and impact;
- providing new and more and robust nesting sites for the BAP Little Tern; and
- enhancing wherever possible within the project, the conservation designation and integrity of the protected species and habitats.

Residual outcomes:

- To preserve the long term viability of the harbour for maritime commercial and leisure activities.
- To preserve the character of the Mersea waterside area.

3. Identification and Appraisal of Options

- Three options were considered to combat the future erosion problem, do nothing, fixed off shore wavebreak, mobile foreshore recharge.
- The do nothing option will result at some time in the next 50 to 100 years, of irreversible loss of the quality and quantity of the designated conservation habitats and oyster layings, the demise of West Mersea harbour as a yachting and sailing centre, increased flood risk to a significant number of residential and commercial properties and decline in local employment opportunities, with increased flood risk and habitat loss to the Tollesbury Wick nature reserve.
- A fixed wavebreak, similar to the old Thames lighters used by the EA at St Peter's Point on the Blackwater and Marsh House outfall on Dengie, although effective, would be unlikely to meet the new stricter regulations for environmental protection making consents and licences approval improbable. Fixed wavebreaks constructed from imported rock are very expensive and would cost in the order of £10 million to provide and place to Old Hall Point, Packing Marsh and Cobmarsh.

- Mobile foreshore recharge would be achieved through beneficial use of appropriate material of a mix of stone, sand and shell with 40k m3 to Old Hall Point, 48k m3 to Cobmarsh, 5k m3 to Packing Marsh and 5k m3 to Tollesbury Wick frontage.

4. Justification of Preferred Option

- As the EA recharge project has proved itself successful in combating storm waves and erosion, has been sustainable for almost twenty years, responds to natural tidal forces and has improved the habitats, for, in particular nesting and roosting birds including Little Tern, this is the preferred option.
- Previous independent monitoring of the EA recharge has demonstrated that this real life model is hydrodynamically and environmentally acceptable and it is hoped that this option will prove acceptable to marine consenting authorities, particularly as the same locations would be used.
- The preferred option of foreshore recharge would need to coincide with the with potential proposal from Harwich Haven Authority to improve their navigation channels in 2016 at the earliest, subject to their commercial and funding issues, which could provide an appropriate material in terms of quality and quantity for beneficial use to protect West Mersea Harbour.
- Placing methods of the material from Harwich are tried and tested on many parts of the Essex coast including West Mersea Harbour and have low risk.

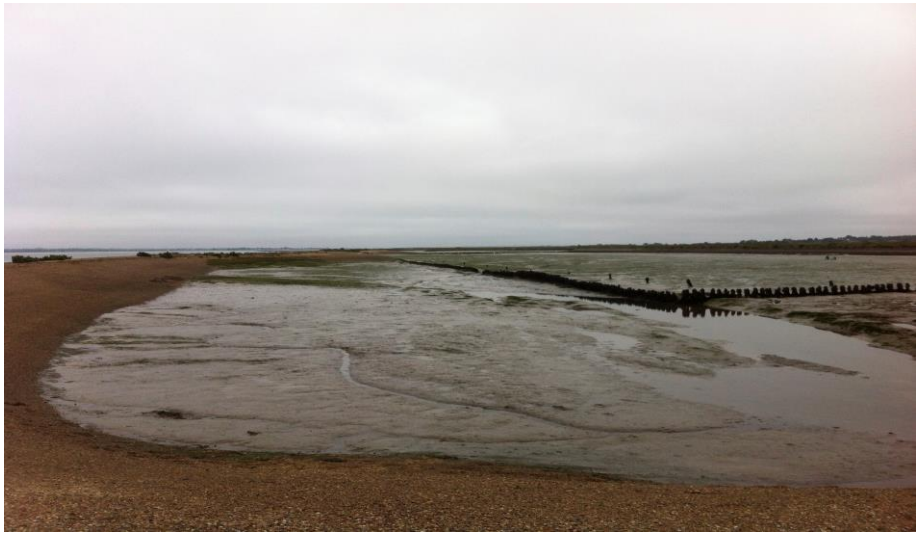
Trailer suction dredger *Sospan Dau* that has placed previous recharge material to Mersea Harbour.

5. Project Risks

- Recharge carries the lowest risk as a consequence of the previous EA project. There is now, following the EA monitoring, known tidal forcing responses, habitat and wildlife benefit, quantified erosion reduction, no maintenance, no natural landscape issues, limited navigation impediment, and generally a very positive public response. However, it must be noted that recharge will never be a final solution. The power of the sea during storm surges and the huge unknowns from climate change detrimental impacts cannot guarantee any designed solution.
- Residual risks include agreement on material availability and cost from HHA, finance for funding the project, planning permission, consents and licences from regulators, material quality and grading curves for the proposed recharge sites.

6. Benefits

- Benefits are sustainable protection from current and climate change induced eroding wave forces to 16 square km of nationally and internationally important SAC, SPA and RAMSAR conservation wetlands, to allow management of their environmental integrity, protection for the existing cultivation grounds of the BAP European Flat Oyster, new and more robust nesting sites for the BAP Little Tern, and related socio-economic benefits and heritage within the area of West Mersea harbour.
- The proposed beneficial use recharge would be positioned to Cobmarsh, Old Hall Point and Tollesbury Wick to facilitate the regeneration of saltmarsh to the existing eroding foreshore by natural accreting process in a similar way that the previous EA project at Tollesbury Wick allowed – see below photograph.



EA recharge at Tollesbury Wick showing new mudflat to landward (right) and Little Tern nesting site to seaward (left).

7. Costs

- It is estimated that similar quantities would be required as were planned for under the EA project, i.e. 5k m3 to Packing Marsh, 48k m3 to Cobmarsh, 40k m3 to Old Hall and 5k m3 to Tollesbury Wick. If HHA provide and deliver the material at no charge, as a compensation licence requirement or a desire to enhance the local natural environment, and if it is accepted that the work is necessary to maintain the integrity of the conservation designated habitat and assist with the preservation of BAP creatures by recharge, and if it is accepted that the previous hydrodynamic assessment by the EA is still relevant following the EA's monitoring, then estimated budget costs could be £120k (£75k specialist surveys, environmental reports and consent approval fees, £25k for consent condition works and monitoring and possible £20k for construction management and contingencies). All other management works would be by community funding local **unpaid** volunteers, RSPB and EWT with an estimated value of some £187k in **unpaid** volunteer manpower, equipment and materials. **If HHA charge for supply and delivery of the recharge material then this will cost an additional £294k.**

8. Timing

Year	2014	2015	2016	2017	2018
ITEM					
Form guiding charity	--	-			
Committee meetings	-	-	-	-	-
Public consultation	------	--------	-----	---	---
Negotiate with HHA	-	-	--	--------	
Consult regulators	-	-	------	-----	-
Consent application			---	---	
Pre surveys and monitoring	---	--------	------		
Prepare ES/EIA		--------	------		
*Undertake recharge				--	---------
**Post recharge monitoring					---------

*Will depend on HHA capital dredge programme – 2016 earliest date.
**May require 3 years post recharge placement monitoring.

9. Management Structure

- Management is under a small unpaid volunteer guiding committee comprising West Mersea harbour interest groups, which have formed a registered charity, The Mersea Harbour Protection Trust, (The Trust), with a member from the Essex Wildlife Trust and the RSPB that would meet at regular predetermined intervals. It will require strict and agreed control over financial spending.

- The Trust will be assisted by an outside specialist consultant, who is not part of the charity committee, for the very complicated consent process.

10. Recommendations and Conclusions

- If the current erosion is not managed then the internationally important wetlands that comprise West Mersea harbour will decline and degrade within the next 20 years with irreversible loss within the next 50 to 100 years. The sustainable future for BAP Little Tern and European Flat Oyster will be seriously compromised.
- Such loss will not only affect the legal requirements on conservation designated wetlands and BAP requirements, but also have serious socio-economic consequences for the local area, economy and heritage.
- That 40k m3 of a mix of stone and sand material is placed to Old Hall Point, 48k m3 to Cobmarsh, 5k m3 to Packing Marsh and 5k m3 to Tollesbury Wick with material sourced from HHA if environmentally and financially viable.
- Management would be under the registered charity The Mersea Harbour Protection Trust which would be dissolved on completion of the works and made necessary arrangements for monitoring and maintenance.
- That the Trust committee raises the finance to seek approval for all required consents, and if obtained to oversee the placement and subsequent management of the recharge areas.

"Observe always that everything is the result of change, and get used to thinking that there is nothing Nature loves so well as to change existing forms and make new ones like them."

Marcus Aurelius 121-180 AD.

Please visit the website at http://savemerseaharbour.org/ for further information.