Agenda Item No:		**Report No:**	
Report Title:	**Cuckmere Estuary: Draft Flood Risk Management Strategy – Consultation by the Environment Agency (EA)**		
Report To:	**Cabinet**	**Date:**	**21 November 2007**
Lead Councillor:	**Cllr Peter Gardiner**		
Ward(s) Affected:	**Seaford East**		
Report By:	**Director of Planning and Environmental Services**		
Contact Officer(s):	**Lindsay Frost, Director of Planning & Environmental Services**		

Purpose of Report:

To respond to the EA's consultation document on the future of the Cuckmere Estuary.

Officers Recommendation(s):

1 That Cabinet support either Option 1B (withdrawal of maintenance) or 3A (managed realignment), on the basis of the assessment in Section 3 of this report.

2 If the Cabinet support Option 3A, the District Council participate in the Cuckmere Estuary Partnership to explore the potential for a wider funding package to deliver managed realignment.

Reasons for Recommendations: To support options for the future of the Cuckmere Estuary which recognise the impact of climate change, work with natural processes, and do not commit future generations to unrealistic flood defence maintenance costs.

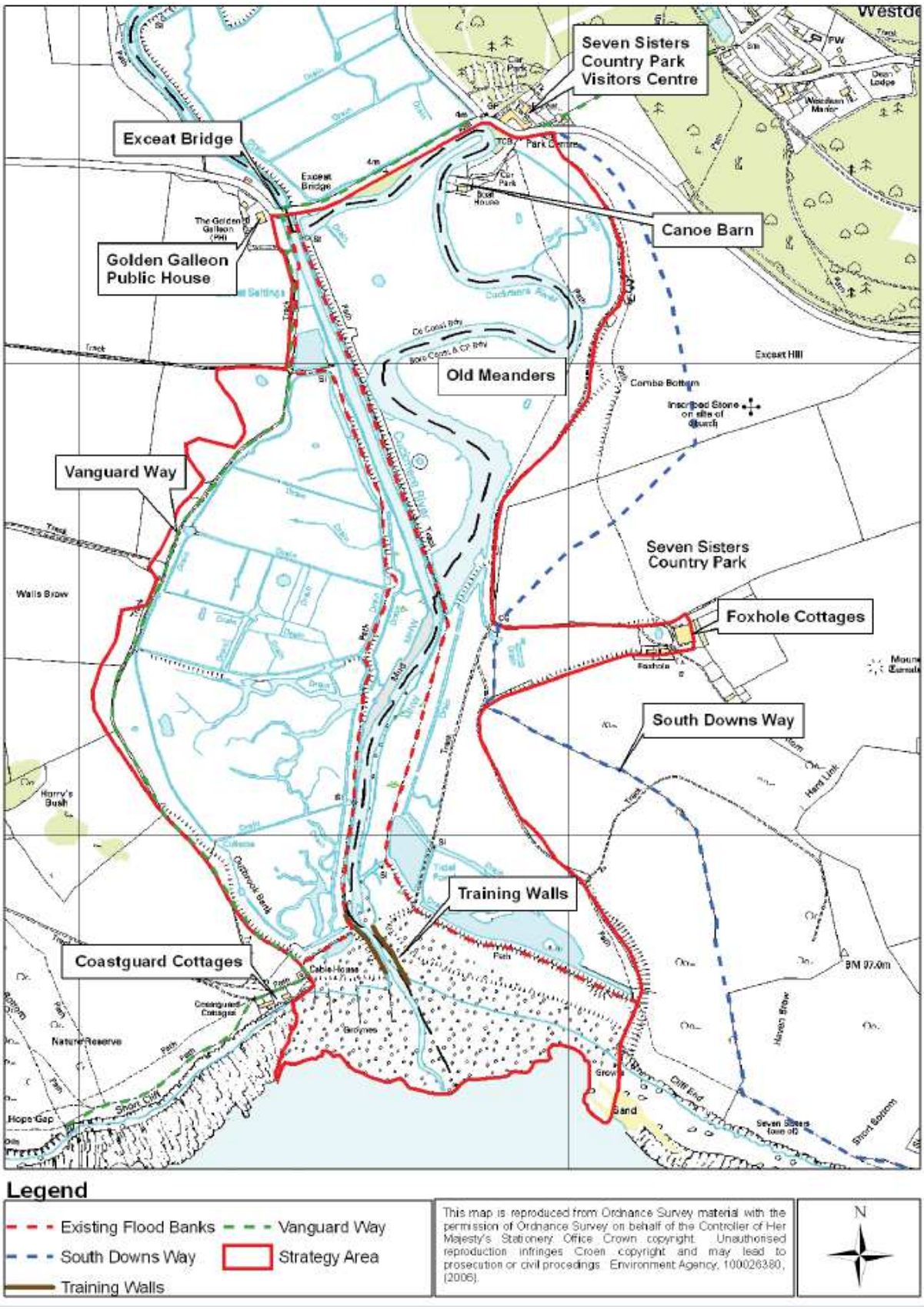
1 Information

1.1 The Cuckmere Estuary – the river and floodplain from the A259 down to the sea – is one of the best-loved landscapes in southern England. The river meanders over a tidal floodplain between rolling chalk hills before discharging into the sea across a shingle beach, flanked by high cliffs. A map of the area is attached (Map A).

1.2 The area is used for grazing and is very popular for recreation, attracting many thousands of visitors each year. There is also considerable wildlife interest. All of these factors are reflected in a battery of statutory designations including Area of Outstanding Natural Beauty (AONB), proposed National Park, Local Nature Reserve, Heritage Coast and Site of Special Scientific Interest.

1.3 However, the Cuckmere Estuary, as we know it today, is not a natural landscape. There has been a long history of human intervention going back to the 14th Century. The river has not flowed through the winding meanders since the 1840's when a straight channel was cut to the sea to improve navigation. The meanders were cut off and have been gradually silting up ever since. Today, the river flows along the cut channel, with earth banks along it, reinforced with stone blocks in places, and with timber training walls at the mouth where it meets the sea.

Map A


Seven Sisters Country Park Visitors Centre
Exceat Bridge
Canoe Barn
Golden Galleon Public House
Old Meanders
Vanguard Way
Seven Sisters Country Park
Foxhole Cottages
South Downs Way
Training Walls
Coastguard Cottages
Legend
Existing Flood Banks
Vanguard Way
South Downs Way
Strategy Area
Training Walls
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1.4 Responsibility for maintaining the Cuckmere Estuary rests with the Environment Agency, under permissive powers. This means that the EA have powers, but not a duty, to carry out maintenance works. At present, the EA moves shingle from the river mouth back to the west beach twice annually, and carries out maintenance of earth banks and timber walls, where necessary. This has an annual cost of £30,000 to £50,000. This expenditure has to be justified purely in flood defence terms, and balanced against competing claims for expenditure elsewhere, such as improving flood defences in places like Lewes and Uckfield.

1.5 The EA state that existing arrangements for maintaining the Cuckmere Estuary landscape are not sustainable for two main reasons:-

- The existing tidal river walls are reaching the end of their life and will fail, or be regularly overtopped, unless there is significant expenditure to strengthen and raise them.

- Climate change will lead to rising sea levels (at least one metre by 2115), higher river flows down the Cuckmere, and increased storminess.

1.6 The Environment Agency have published a consultative draft flood risk management strategy for the Cuckmere Estuary which looks at options for managing flood risk in the area over the coming century. Extensive technical studies have been carried out (see background papers listed at the end of this report and conclusions from an impact study prepared for English Nature attached as Appendix A); a summary booklet has been published; and exhibitions held at Alfriston, Seaford and Seven Sisters Country Park. Comments are sought by December 10.

1.7 Cabinet members have been provided with a copy of the summary booklet and are asked to bring the booklet to the meeting. At the September Cabinet, when considering LDC's policy on flood and coast defence, Members asked for the Cuckmere Estuary options to be the subject of a further report to Cabinet (Minute 83.3). Cabinet is asked to consider a response on behalf of Lewes District Council, indicating which of the various options canvassed for the future management of the Cuckmere Estuary it prefers.

1.8 The Agency have not yet received comments from all principal consultees. However, it is understood that the National Trust, Natural England, and the South Downs Society all support Option 3B. Views are still awaited from the County Council, Wealden DC, Seaford TC and the South Downs Joint Committee. An update will be provided at the meeting.

2 Options on which views are being sought by the Environment Agency

2.1 The different options for managing flood risk being examined by the EA are:

- **Option 1: Do Nothing**

  There are two variations of this option. Both would result in water from the river and sea getting into the floodplain area. The area would become an estuary system including intertidal saltmarsh and mudflat. The meanders may remain as features of the estuary system. The canoe barn and adjacent car park and some access ways and paths would be within the flooded area.

  - **Option 1a: Immediate Do Nothing** – All flood risk management activities would be stopped immediately.

- **Option 1b**: **Withdrawal of maintenance** – The EA would first give two years notice to all interested parties of its intention to stop flood risk management activities. Until the two years have passed, the EA would carry on undertaking works as they do at the moment. Once this period is over, the existing defences would deteriorate, allowing an estuary system to develop. The EA would carefully monitor the area as changes took place and provide advice on what was happening to the people affected.

  The EA would continue to move shingle away from the mouth of the river to prevent blockages until the estuary system had developed sufficiently for blockages not to happen anymore. This would take up to about 15 years to happen.

- **Option 2: Hold the existing defences**

  There are two variations of this option:

  - **Option 2a: Maintain the existing defences** – The defences would be maintained at their current height, by carrying on works as at present. However over time, due to sea level rise and increased storms, flood risk will increase and this will not be sufficient to prevent flooding of the area. Therefore, the area will become an estuary system as described for both variations of Option 1 above.

  - **Option 2b**: **Sustain the existing defences** – The EA would make the defences bigger to cope with increasing flood risk. This would entail raising and widening the river structures and putting in more structures, for example rock revetment, on the west beach. Substantial engineering works would be required. The fields of the floodplain would remain. However, the meanders would gradually change. Because they do not receive flow from the river, they are filling up with silt. Unless this was removed, they could ultimately be lost.

- **Option 3: Change the location of the existing defences – managed realignment** – Two variations of this option have been examined (see Map B – Managed Realignment Options). Both would result in areas being allowed to flood by taking down parts of the existing defences. The flooded areas would then become part of an estuary system. It is likely that the estuary system would develop more quickly than in Options 1a and 1b.

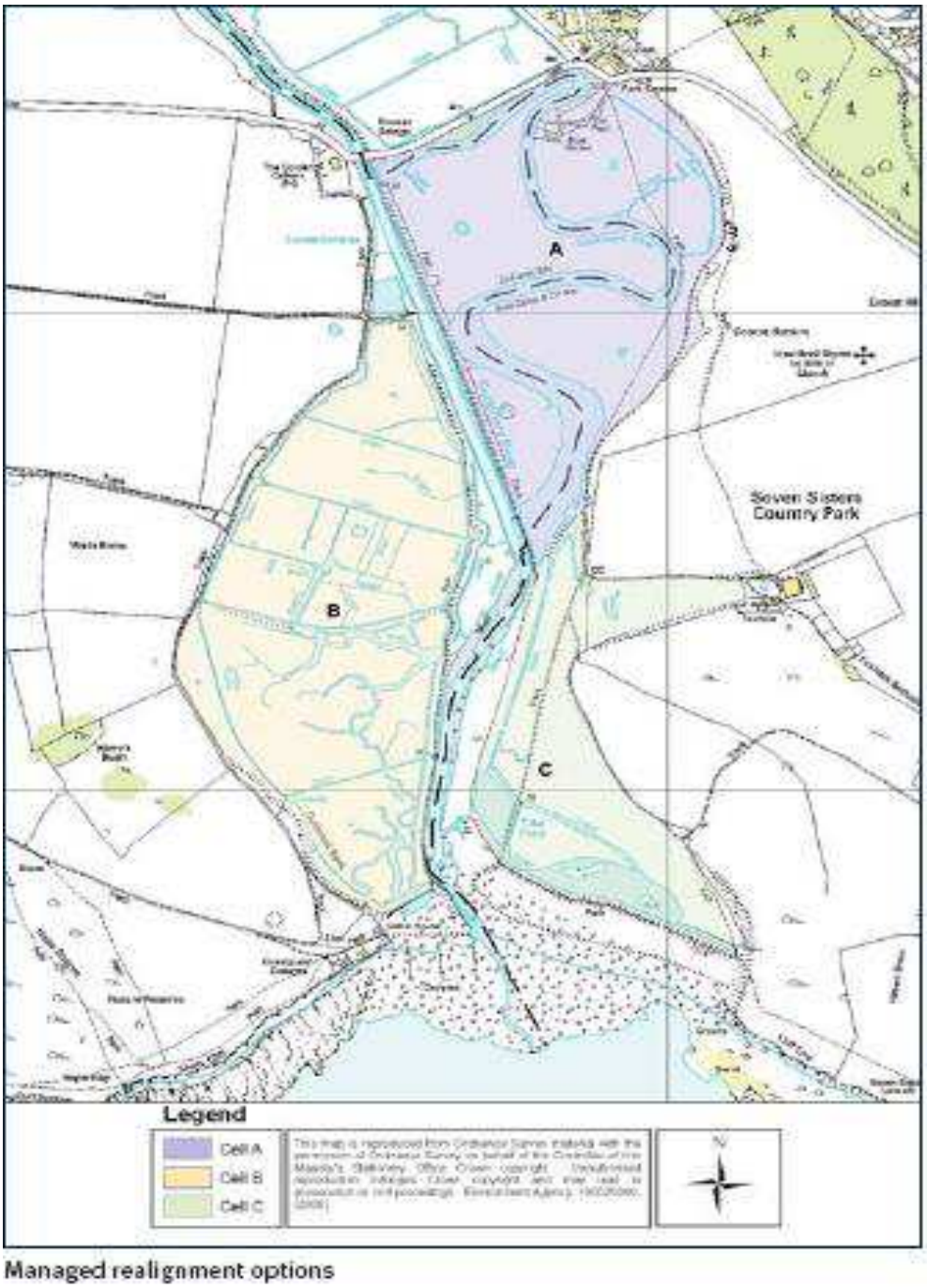
  - **Option 3a: Realignment over part of the flood plain (Cells B and C)** – The flood defences would be breached at a number of locations to allow water into Cells B and C. The existing flood defences around Cell A would still be maintained and some new sections would be built. The meanders would remain separate in the floodplain and would continue to silt up gradually over time.

    Sections of some paths would be raised out of the flooded area and other paths would be relocated. Works to remove shingle from the river mouth would continue, as the estuary system would not be large enough to keep the mouth clear itself.

  - **Option 3b: Realignment over Cells A, B and C** – The flood defences would be breached at a number of locations to allow water into Cells A, B and C. A new bank would be built at the north of Cell A to provide protection for the canoe barn and adjacent car park. The meanders would be almost entirely within the flooded area and would become part of the estuary system.

Sections of some paths would be raised out of the flood area and other paths would be relocated.

Map B



Managed realignment options

3 Officer assessment of options

3.1 Officers have sought to assess the various options with regard to their effect on:

- Coastal management
- Public rights of way/access
- Tourism and economic activity
- Biodiversity
- Upstream flooding in Alfriston and West Dean
- Costs to the public purse

The attached matrix attempts to summarise the evaluation.

3.2 **Option 1A** is not favoured. It would mean that flood risk in the Cuckmere Estuary would not be actively managed and that the existing tidal river walls would eventually be overwhelmed and natural processes take over. It would also involve loss of footpaths, and increased upstream flood risk if the river mouth were not managed.

3.3 **Option 1B** is the Environment Agency's favoured option on the basis that it works with natural processes and avoids construction of larger flood defences. It allows the area to change and adapt to sea level rise, providing new intertidal habitats which will be attractive to wildlife. However, some existing footpaths will be lost or have to be re-routed. Management of the river mouth would continue for a period of around 15 years, after which it is anticipated it would become naturally self cleansing.

3.4 **Option 2A** is unrealistic on two counts. First, predicted sea level rises will make maintenance of the existing tidal flood defences futile in the long run, as they will be breached or overtopped. Secondly, this approach is unlikely to meet the Government's current criteria for spending public money on managing flood risk. Notwithstanding these overriding objections, this option maintains the current economic position and the existing footpath network, and does not increase upstream flood risk.

3.5 **Option 2B** would raise existing tidal river walls to cope with sea level rise, but this would involve large scale engineering works with significant environmental impacts. The overriding problem with this option is the high cost (around £18 million over its whole life), which would make it unlikely to meet the Government's criteria for spending public money on managing flood risk. As with Option 2A, this option maintains the current economic position and the existing footpath network and does not increase upstream flood risk.

3.6 **Options 3A and 3B** score best for people and the environment in the Strategic Environmental Assessment carried out for the Environment Agency. However (as with Options 2A and 2B) these options are relatively costly (approx. £3.6 millions and £2.9 millions whole life costs, respectively) and would be unlikely to attract Government flood risk management funding. The EA state that they cannot pursue these options through a flood risk management strategy alone; they would need to work with partners (such as Natural England, National Trust, South Downs Joint Committee, East Sussex County Council, Lewes DC and Wealden DC) to identify other potential sources of funding to allow the managed realignment options in Options 3A and 3B to be pursued further.

Cuckmere Estuary: Option Evaluation Matrix

Options	Coastal Management	Public Rights of Way/Access	Tourism and Economic Activity	Biodiversity	Upstream flooding in Alfriston & West Dean	Costs to Public Purse
1A – Immediate Do Nothing	Immediate cessation of flood risk management works would not accord with the Shoreline Management Plan (SMP)	Footpaths along both banks of the river would be lost and the Vanguard Way route on the west side of the valley may need to be re-routed.	Awaiting data on economic impact from EA Loss of canoe barn and adjacent car park	Eventual formation of intertidal saltmarsh and mudflats (Priority Biodiversity Action Plan habitats). Meanders may remain	Do Nothing may lead to blocking of the river mouth and increased flood risk upstream	No cost
1B – Withdrawal of Maintenance	Accords with SMP, in allowing for formation of naturally functioning river mouth before ceasing maintenance works.	As 1A above	As 1A above	As 1A above	No increased flood risk upstream, according to EA studies, as long as a naturally cleansing river mouth is formed.	Maintenance costs at current level (£30k to £50k pa) for next two years. Reduced costs thereafter.
2A – Maintain existing defences	Not in accordance with SMP as this option continues to provide flood defences into the longer term.	All existing rights of way would be maintained.	Awaiting data on economic impact from the EA.	The existing nature conservation interest in the area would be maintained.	As in 1B above.	Maintenance costs continue at current level, as in 1B above, indefinitely.
2B – Sustain existing defences	As 2A above	As 2B above	As 2A above	Substantial engineering works with significant environmental impacts and continued silting up of the meanders	As in 1B above	EA estimate a whole life cost (building and maintaining structures for 100 years) at approx. £18 millions.

Options	Coastal Management	Public Rights of Way/Access	Tourism and Economic Activity	Biodiversity	Upstream flooding in Alfriston & West Dean	Costs to Public Purse
3A – Managed realignment Cells B/C	Accords with SMP in allowing a newly aligned tidal inlet to form at the mouth of the river	As 1A above, except that river bank path in Cell A is retained.	As 2A above	Formation of intertidal saltmarsh and mudflats (Priority BAP habitats), but at a faster and more controlled rate than 1A or 1B.	No increased flood risk upstream, as long as work continues to keep the river mouth clear.	EA estimate whole life costs of £3.6 millions.
3B – Managed realignment Cells A/B/C	As 3A above	As 1A above	As 1A above	Formation of wider area of intertidal saltmarsh and mudflats than in 3A, also at faster and more controlled rate than 1A or 1B.	As 3A above.	EA estimate whole life costs of £2.9 millions.

3.7 Of the two options, Option 3A is preferred as it has less impact on public access and maintains the famous Cuckmere meanders (albeit requiring eventual de-silting) alongside creation of new intertidal habitats.

3.8 Neither Lewes DC or Wealden DC have yet participated in the Cuckmere Estuary Partnership, which currently involves all the other organisations listed above. If Cabinet decides to support Option 3A it would be appropriate for LDC to consider joining the Partnership.

3.9 Cabinet is asked to consider which of the various options it wishes to support. On the basis of the information provided so far, particularly the need to respond to climate change and to work towards a naturally functioning river estuary which does not burden future generations with large ongoing flood defence maintenance costs, officers recommend either Option 1B or (if a more comprehensive funding package can be assembled by local partners) Option 3A.

3.10 The above recommendations are without prejudice to a current planning application for raising the tidal river walls (akin to Option 2B) by a private individual (Ref. LW/04/0662 with a parallel application on the Wealden side of the river). Further information is awaited from the applicant before this application can be referred to the Planning Applications Committee.

4 Financial Appraisal

No financial consequences arising from responding to this consultation exercise. The assessment in Section 3 considers the effect of different options on the public purse generally.

5 Environmental Implications

I have completed the Environmental Implications Questionnaire. There are very significant environmental effects arising from the options considered in this report, which are assessed in Section 3.

6 Risk Assessment

I have completed a Risk Management Questionnaire and this report does not require a risk assessment because the issues covered by the recommendations are not significant in terms of risk, in that they are a response to a consultation exercise by the Environment Agency.

7 Background Papers

- South Downs Shoreline Management Plan (Beachy Head to Selsey Bill) 2006, Halcrow Coastal for South Downs Coastal Group.
- Planning for the Future: Cuckmere Estuary draft Flood Risk Management Strategy (Consultation document): - September 2007 and various supporting studies.
- Cuckmere Haven: Assessment of potential impacts of managed realignment – Risk & Policy Analysis for English Nature, June 2005 (Conclusions in Appendix A).
- Cuckmere Estuary Strategy: Strategic Environmental Assessment: Jacobs Babtie for EA, August 2007

- Cuckmere Estuary: Strategic Environmental Assessment – September 2007

- Application ref. LW/04/0662 - Raising height of flood protection banks by 300mm relaying footpath surface material and construction of bird hide.

8 Appendices

A: Conclusions from RPA report above. (A full report is posted on the LDC web site with these Cabinet papers).

Lindsay Frost
Director of Planning & Environmental Services

8/11/07