

Key Decision Required:	YES	In the Forward Plan:	NO – EXEMPTION TO BE SOUGHT
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## CABINET

21 FEBRUARY 2007

### JOINT REPORT OF HEAD OF TECHNICAL AND PROCUREMENT SERVICES, HEAD OF LEGAL SERVICES AND HEAD OF FINANCIAL SERVICES

#### A.1 SEA WALL FAILURE – HOLLAND ON SEA

(Report prepared by John Ryan)

#### 1.0 PURPOSE OF THE REPORT

To provide a report on the recent failure of the sea wall adjacent to Queensway Holland on Sea including proposed remedial works and costs. The report includes the decisions taken in regard to this matter by the Technical Services Portfolio Holder and Finance Portfolio Holder on 14<sup>th</sup> February 2007 and sets out the further approvals now sought.

#### 2.0 BACKGROUND

On the morning of 23 January there was a slippage of the sea wall at Queensway Holland on sea. Appendix 1 shows photographs of the wall. As can be seen it has moved forward by about 1 to 1.5 metres. This specific section of sea wall was identified as having a low margin of stability in a study that took place in 2001 and work was carried out to improve the overall stability of the cliff by installing land drainage and re-grading the slope. It was also recommended that some further work be carried out to stabilise the wall. It was known at the time that the Sea wall along this whole frontage between Gunfleet Sailing Club and Holland Haven was only marginally stable. And it was considered that putting stabilisation in place for this whole length of wall could not be met from maintenance budgets. Beach levels have always been high at this location and the proposals within Phase 1 of the Clacton strategy works would raise beach levels and improve stability for the whole frontage. However recent continuous stormy weather has lowered the beach levels dramatically removing significant support to the front of the wall. This together with erosion of the clay platform of the beach has caused the failure of the wall.

Members may recall that a report detailing the proposed Coast Protection Strategy Plan for Clacton on sea was put before Cabinet on the 16<sup>th</sup> April 2003. At that meeting the strategy was approved for submission to the Department for Environment, Food and Rural Affairs (DEFRA). The Strategy proposes to recharge Clacton's beaches with sand and to hold the beaches in place with offshore rock armour breakwaters. The intention is to renew the coastal defences which are in a bad state of repair and deteriorating rapidly. The first phase of the proposed work was to treat the worst frontage between Kings Avenue and Brighton Road this includes the section of wall which has now failed. A further report to Cabinet on 24 November 2004 brought members attention to the impact that DEFRA'S priority scoring system was having in delaying the implementation of the scheme until 2008/9 at the earliest and the serious concerns about the stability of the sea defences at Clacton and the way that the new priority did not take into account urgency of coast protection schemes. Members resolved "That further capital expenditure on the Strategy be suspended" and "That a letter be sent to DEFRA with copies to local MP's and the LGA expressing the Council's concern about the perilous state of the sea defences at Clacton on Sea and the way the Department's Priority Scoring system does not take account of urgency in considering the need for coast protection schemes." A copy of the letter sent and reply are provided at Appendix 2. Further correspondence has resulted in the letters from DEFRA also included at Appendix 2.

## **3.0 RESPONSE TO SEA WALL FAILURE**

### **3.1 Action taken**

An immediate assessment was made of the situation. The sea wall has slipped en masse down the beach but is still in an upright condition. It is clear that if the sea wall is lost then rapid erosion will occur to the promenade leading to instability of the cliff slope and to eventual loss of the greensward and sea front roadway and houses. An obvious course of action would be to fill the void that had formed behind the wall to prevent further erosion, however the initial assessment was that such an action would probably lead to total collapse of the wall. It was therefore necessary to make a structural assessment of measures that could safely be taken to stabilise the situation. A structural engineer was called in and after collecting data needed on geometry and soil conditions he has made an initial assessment of the short and medium term options and reported back with his recommendations and assessed costs on 5 February.

The findings are provided at section 3.7 below

### **3.2 Status of works**

The Council has powers to carry out work under the Coast Protection Act. These powers are permissive. Normally when carrying out coast protection works the Council need to put in place a number of provisions these include: permission from DEFRA for the proposals, a construction licence, planning permission and an environmental statement. Subject to these provisions being in place DEFRA will consider a scheme for grant funding. The process takes some time and is subject to meeting DEFRA's Priority Criteria and to funding being available. DEFRA's position on grant funding is that it is permissive and that budgets are limited in any one year.

The Coast Protection Act has provision within it for carrying out emergency work. If the Council concludes that work is an emergency then, subject to notification to DEFRA, the work can be carried out as soon as is practicable without the above mentioned permissions and grant aid can be applied for retrospectively. The application for grant aid is considered in the same way as any other scheme. (See DEFRA letter dated 14 July 2006 "Our decision on whether to fund emergency work under s21 would need to consider any priority criteria applicable at that time and the availability of funding")

### **3.3 Failure scenario**

The sea wall is no longer intact and even on moderate tides sea water is entering behind the structure gradually eroding the promenade. During spring tides and during storms this erosion activity will be magnified by high water levels and wave action. In addition the front of the wall will be subject to shock loading from waves. Under these conditions further movement and/or toppling of the sea wall is likely. It is not possible to predict when this will happen but it is clear that there is a need to carry out remedial work as soon as is practicable if the risk of further failure is to be minimised.

The implications of the sea wall toppling are that the base of the cliff would be exposed to direct erosion under wave action. Normally this would lead to erosion rates in the region of 1m per year but the sea wall has fixed the position of the bottom of the cliff for the past 50 years meanwhile beach erosion has continued and the beaches are considerably lower than when the sea wall was built. The impact of this is that initial erosion of the cliff would be rapid with the cliff eroding back

perhaps 15m in the first 3 to 6 months this would cause wall failure to spread to adjacent walls and affect the stability of the cliff and the road and houses above it is likely that the cliff would collapse with consequent loss of amenities and infrastructure. Should this situation arise then the cost of remedial work will increase substantially.

(Note. The scenario described above is a best guess at what may happen and recession may actually be more or less rapid than this.)

### **3.4 Decision whether to proceed with works / funding issues**

The recession scenario detailed above is of great concern. Ideally a scheme to repair the wall would be developed and the necessary permissions applied for. The necessary cost benefit analysis and other priority indicator information would be prepared and submitted to DEFRA for grant approval. Subject to DEFRA approval the work could then proceed. This process would take at least 3 months and it should be noted that discussions with DEFRA indicate that the funding available next financial year is very oversubscribed. This leaves grant approval in doubt.

It can be seen from the recession scenario that it would be inadvisable to wait 3 months before starting repairs and that the scheme should be carried out as emergency works. In this case funding would have to be applied for retrospectively. In recent discussions DEFRA have indicated that should it be necessary to carry out emergency work and a submission for funding is made this financial year then it would be considered although no clear indication was given in respect of the likely outcome for such a bid. However having considered the programme of work required to complete the proposed work it is not possible to complete the work in less than 4 months. This may mean that the work would not be eligible for an application for grant aid this financial year. The overall conclusion is that the cost of emergency works is at risk of not being reimbursed by DEFRA.

### **3.5 Further stability problems and work required**

As mentioned in the background information provided above the Sea wall along this whole frontage between Gunfleet Sailing Club and Holland Haven is known to be only marginally stable. Beach levels have dropped to 'all time lows' and the possibility of sea wall collapses and emergency works schemes, raised in reports and in the letter to DEFRA dated 6th January 2005, is now a reality. Regular inspections of the sea front are carried out and areas showing signs of instability are measured on a monthly basis. Some sections of sea wall are showing signs of seaward movement. Areas that have been the subject of previous stabilisation by placing of rock armour in front of the wall are also moving. It is not possible to predict when or if another failure will occur but in view of the very low beach levels it is prudent to re-examine the stability of all the walls on this frontage. It will be necessary to implement further work to enable a structural analysis to be carried out and it is proposed to employ a specialist firm to implement this work. This will allow identification of the potential for further sea wall failures and the development of remedial proposals for maintenance funding or an application for funding by DEFRA. This type of analysis work often takes a number of months to implement and requires on-going monitoring to observe relative movements.

Order of cost is unknown at this stage (possibly £50,000) it is proposed to meet this cost from the Coast Protection Special Maintenance budget.

### **3.6 Further failures and funding**

The following is an extract from an e-mail from the Head of T&P Services to DEFRA's Regional Engineer dated 26 January 2007:

"I walked the frontage yesterday and it was evident that the recent bad weather has very seriously eroded the clay beach platform and that all the sea walls along this 3km frontage are now in a precarious situation. It is very possible/probable that this failure may be only the first of a series of failures which may trigger in the coming weeks or months. Even if there are not extensive failures this year then it is my opinion that it is almost inevitable that we will face this situation again next year.

The Council does not have financial resources to be able to deal with this scenario and the scenario itself indicates the common sense of beginning the strategy proposals, to import a beach and hold it in place with offshore breakwaters, as soon as possible. If this work is not implemented then it is my conclusion that major failures and loss of property and infrastructure are inevitable.

In view of this very serious situation I would ask if you could visit the site as soon as possible to view the situation for yourself.

I believe this is a unique situation and requires unique treatment but you really do have to see it for yourself to appreciate the problem."

In response to this a DEFRA engineer visited the site on 31st January and walked the frontage with the Heads of Technical, Finance and Environmental Services. The tour included a detailed explanation of the extensive wall stabilisation work that has already been carried out on the frontage and examination of the failure site and other sites where serious movement of the wall is evident. He was sympathetic to the Councils position and took a photographic record but as far as funding the work required or considering the frontage as a special case he offered no assurances and repeated the information provide in DEFRA's letter dated 16 June 2006: That there is little prospect of funding being made available for the Clacton Phase 1 Project. He also indicated considerable doubt that any scheme put forward next year, whether emergency or urgent, would receive funding approval because of the unprecedented level of forward commitment that has arisen and the limited grant allocation that is available.

### **3.7 Structural Engineer's Findings**

The structural engineer reported back his findings on the stability of the wall on 5 February. He has concluded that 'the prime cause of failure was a very significant recent drop in beach levels (both sand and underlying clay) probably coupled with elevated ground water levels following heavy rain' He presented 2 options for remedial works that both included temporary propping of the existing wall followed by reconstruction of the wall.

Breheny, the contractor currently carrying out sea wall repairs adjacent to the failed sea wall, have provided advice and survey work. They have worked with the consultant and have provided a cost build up of the two options and they are very similar in price. After discussing the advantages and disadvantages of the two options it was agreed that the least risk and preferred option is to drive piles to prevent the sea wall from sliding further forward and then drive a new pile toe in front of the existing wall and reconstruct the wall as a stepped wall with drainage to the rear. Following which the promenade could be reconstructed.

The structural Engineer has commented that it will be important to act as quickly as possible to control the stability of the situation and he is working on proposals and a method of operation.

### **3.8 Costs**

The cost of the preferred option including contingencies and design fees is estimated at £350k. The work will take about 12 weeks to construct.

### **3.9 Further work required**

The Structural Engineer has carried out preliminary design work but detailed design work and construction drawings are now required both in order for the work to proceed and/or in order to enable a submission to DEFRA for grant aid. Clearly the existing Consultant now has a detailed knowledge of the problem and it is a matter of urgency that the design work is carried out as soon as possible. It is therefore proposed to engage the consultant to carry out the necessary work. He has put forward a design fee proposal to carry out the work for £19,800, included in the £350,000 identified above. The Portfolio Holder for Technical Services has been consulted and has approved the appointment. Design work should be substantially complete by the end of February.

### **3.10 Decisions of Portfolio Holders**

Having regard to all the matters set out above, on 14<sup>th</sup> February 2007 the Technical Services Portfolio Holder and Finance Portfolio Holder made the following decisions.

- a) **That after considering the recession scenario provided, the Technical Services Portfolio Holder agrees to exercise his delegated power under the Coast Protection Act to carry out emergency work to rectify this sea wall failure.**
- b) **That £350,000 be utilised from the Coast Protection Special Maintenance budget to meet the cost of the remedial works, subject to approval of the 2007/08 budget by Council on 15<sup>th</sup> February 2007.**
- c) **That the Technical Services Portfolio Holder confirms his agreement that the structural engineer who has carried out the initial assessment and preliminary design work is commissioned, as a matter of urgency to carry out detailed design work for a fee of £19,800. This work is needed both to progress the work as an emergency and/or in order to make a submission for funding from DEFRA.**
- d) **That in view of the urgency of the work required negotiations take place with the contractor resident on the adjacent site to carry out the work required on the basis of an open book tender where the contractor is paid his actual costs plus a percentage for profit and overheads.**
- e) **That exemption from Contract Procedure Rules for the procurement of the remedial work up to a value of £250,000 be granted on the grounds of urgency, to enable works to commence as soon as possible.**
- f) **That a proposal be developed and costed to carry out analysis of the stability of the sea walls and cliffs and carry out ongoing monitoring using Coast Protection Special Maintenance budget.**

## **4.0 IMPLICATIONS**

### **4.1 Community Strategy / Corporate Strategy**

A safer community and maintaining public space

### **4.2 Financial**

A Special Maintenance budget for coast protection work already exists within the Council's overall budget, which totals £446,000 for 2006/07 and £406,000 for 2007/08. The remedial works identified would qualify in terms of the approved use of this budget although historically there has not been such a significant level of one-off work required.

On 14<sup>th</sup> February 2007, a report to the Technical Services Portfolio Holder and Finance Portfolio Holder agreed that these emergency works be carried out at a cost of £350,000 to be met from the special maintenance budget available in 2006/07 and 2007/08. However, along with commitments already made this will result in the budget being fully allocated for 2006/07 and 2007/08 with no available resources for other programmes of work that may be necessary during 2007/08.

Following discussions with Essex County Council, it is pleasing to report that confirmation has been received that they will make a contribution of £100,000 towards coast protection special maintenance work which will enable a limited programme to be maintained into 2007/08.

It is further proposed that, as the works are now going ahead, a claim from DEFRA is made although as mentioned above it is unclear as to whether or not the bid would be successful. If the bid was successful the money could be used to reinstate the special maintenance budget.

### **4.3 Legal**

The Council has permissive powers to carry out the proposed works under the provisions of the Coast Protection Act. The Council has a duty to exercise its powers reasonably, having regard to all of the relevant circumstances at the time. Any work undertaken must be done properly and in such a way as to not make the situation worse through negligence.

Should the Council decide to undertake the emergency works on this occasion, this does not set any precedent or commit it to liability for future works. Any future works must be considered on their own merits and having regard to all the relevant circumstances at that time.

In order to determine whether or not to undertake the emergency works, the Council must balance the evidence of the likelihood of the emergency works preventing a catastrophic failure, with the evidence of the likelihood that undertaking these works will make no difference to the overall stability of the sea wall. It is reasonable for the Council to consider the appropriate use of its resources when reaching this judgement.

Should the Council decide not to undertake the emergency works on this occasion, the judgements of the courts suggest that any potential liability for damage to others may be limited by sharing the relevant information with those likely to be affected. Any liability may also be limited by the Council being able to demonstrate that it has made all reasonable efforts to bring the issues to the attention of the relevant agencies (DEFRA) and get them to take the action that is within their powers.

#### **4.4 Crime and Disorder Act 1998**

There are no implications for crime and disorder within the proposals.

#### **4.5 Equality and Diversity**

There are no implications.

#### **4.6 Wards Affected**

St Bartholomews and Haven

### **5.0 CONCLUSION**

The sea wall failure that occurred on the 23 January 2007 has been the subject of detailed analysis by a structural engineer and he has provided costed remedial proposals. On 14<sup>th</sup> February the Technical Services Portfolio Holder agreed that the necessary remedial works should be carried out.

The possibility of further failures of the sea wall at other locations along this frontage, needs to be taken very seriously and there are signs that other sections of sea wall are moving, triggered by the winter storms and very low beach levels. Further analysis of cliff and sea wall stability is advisable and it is proposed to commission a consultant to carry out this work. This will allow identification of the potential for further sea wall failures and the development of remedial proposals for maintenance funding or an application for funding by DEFRA

Further sea wall failures are likely and DEFRA have visited the site but can offer no assurance that funding will be made available for any work.

### **6.0 RECOMMENDED**

- (a) That after considering the recession scenario provided, members commend the actions taken by the Technical Services Portfolio Holder and Finance Portfolio Holder in relation to the exercise of their delegated powers under the Coast Protection Act to carry out emergency work to rectify this sea wall failure.
- (b) That exemption from Contract Procedure Rules for the procurement of any remedial work beyond a value of £250,000 be granted on the grounds of urgency.
- (c) That DEFRA be requested to give urgent consideration to the funding of the work required.
- (d) That DEFRA be requested to urgently review approval and funding of Phase 1 of Clacton Coastal Works so that the scheme can be implemented as soon as possible.

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Appendix 1



**Failure of sea wall January 2007**  
(note the level of beach on the two groynes and compare with the photograph below)



November 2004

**CABINET**

**21 FEBRUARY 2007**

**BACKGROUND PAPERS LIST FOR  
JOINT REPORT OF HEAD OF TECHNICAL AND PROCUREMENT SERVICES,  
HEAD OF LEGAL SERVICES AND HEAD OF FINANCIAL SERVICES**

**A.1 SEA WALL FAILURE – HOLLAND ON SEA**

None