

**ANGUS COUNCIL****ROADS COMMITTEE****1 DECEMBER 1998****COASTAL EROSION AT CARNOUSTIE - UPDATE****REPORT BY THE DIRECTOR OF ROADS****ABSTRACT**

This report updates the Committee regarding the problem of on-going coastal erosion at Carnoustie, and alerts the Committee to recent deterioration of existing defences in the centre of the beach.

**1 RECOMMENDATIONS**

It is recommended that the Committee:-

- (i) note the ongoing problem of active coastal erosion at Carnoustie now causing significant damage to the existing defences in the centre of the beach;
- (ii) agree that the Director of Roads in conjunction the Director of Finance consider the possible availability of funding described in this Report;
- (iii) note that the Director of Roads will report further to Committee at the same time as reporting on the outcome of the tender submissions.

**2 BACKGROUND**

Previous reports have addressed the problem of strengthening and reprofiling of the weakened rock armour revetment between the Barry Burn and the Buddon Firing Ranges. These works are ongoing following the last report (Report No 1063/98) presented to the Committee on 15 October 1998 and include maintenance work to the gabion mattresses in the central section of the main beach. Significant further deterioration is presently occurring not just to the gabion mattresses but to the rock armour revetments on either side of the gabions.

With the ongoing preparations for the Open Championship in July 1999 it is essential, apart from the obvious coast protection issues, that the works are in place prior to the final infrastructure proposals, footway improvements, etc for this prestigious event.

### 3 DETAILS

Sea level rises and increased storm activity are taking their toll on the central beach defences constructed for Angus District Council in 1989. Studies by H R Wallingford carried out just prior to this time for the Buddon defence measures indicated an increasing movement of sand from the north end of Carnoustie Bay (the central beach) to the area around Buddon Point at the Gaa Sands. This is caused by increased storm events from the south east direction coupled with refraction around the Gaa Spit and tidal effects on ebb flows from the River Tay. This results in an anti-clockwise spiral effect on these occasions.

The extent of the defences in the centre of the beach were designed to take account of this beach lowering effect which predicted a beach lowering of up to 1 metre in depth within 40 years. Unfortunately as pointed out at the time the abrasion effect in these high energy conditions quickly breaks down the gabion mattresses and a progressive bursting and subsequent undermining of the defences can occur.

The situation now is that a distinct zone of increased deterioration is evident in the lower gabion mattresses and it is going to be a costly exercise to carry out annual maintenance. There is always a possibility of extensive breakdown undermining the whole structure.

To contain the situation until a fully designed alternative defence can be brought forward a series of emergency measures are proposed:-

- (a) The broken baskets will be repaired under the present contract Carnoustie Beach Phase II.
- (b) A rock armour toe will be placed to ensure the integrity of the toe of the structure and protect the repaired baskets.
- (c) The rock armour revetments on either side of the gabions will need to be strengthened and reprofiled.
- (d) The area of the bay to the south of the existing rock armour opposite the new hotel will be protected from ongoing erosion effects by a low rock armour revetment to protect the remnant dune in front of the golf course access road. This revetment will link to the previously constructed revetment from the Barry Burn northwards.

A similar section is required either side of the Lochty Burn where there is active erosion especially in front of the car park.

The section north of this right up to Ballisters Park suffers creeping erosion but is affected by possible pipe lines to the new Hatton Waste Water Treatment plan and a composite protection plan may need to be agreed with the concession company appointed by NOSWA.

#### 4 **FINANCIAL IMPLICATIONS**

In view of the suddenness with which the need for this project has arisen no allowance had been made in the Financial Plan for the current financial year. Similarly the Renewals and Repair Fund is presently fully committed.

However the Director of Roads has nominated this project to be included in the "reserve list" maintained by the Finance Department to be called upon should the capital budget position so allow as the current year progresses. Similarly it is possible that slippage within the Roads Department capital allocation may emerge as the year progresses, providing an opportunity to release capital funding to support this project.

It is recommended therefore that the Director of Roads and the Director of Finance jointly investigate the possibility of sufficient slippage occurring to allow this project to be funded at least in part through emerging slippage in the current financial year (1998/99) or through the availability of funding to support some of the reserve list of projects for which this project has been nominated by the Director of Roads.

In the event that the possibility of such funding does not become available then the project may be fundable within the Financial Plan for the next financial year 1999/2000 depending upon the outcome of the preparation of that plan, with the works commencing in the later part of the current financial year ie circa February/March 1999.

In the meantime it is considered that the preparatory work be undertaken and the financial implications be fully reported at the time the tender report is presented to Committee. The engineering administration costs associated with the design etc preparation and tendering processes can be contained within the block heading for "engineering administration - future years" for 1998/99

The cost of the project is very much dependent on how the damage progresses over the winter but intervention measures up to a cost of £150K may be required.

#### 5 **CONSULTATION**

The Chief Executive, the Director of Law and Administration and the Director of Finance have been consulted in the preparation of this Report.

#### 6 **CONCLUSION**

There is an ongoing coastal erosion problem at Carnoustie and it is advisable to make provision for the funding of emergency measures should further damage threaten the integrity of the existing defences.

Dr Bob McLellan  
DIRECTOR OF ROADS

NOTE

The following background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (and not containing confidential or exempt information) were relied on to a material extent in preparing the above Report:-

Angus Council Roads Committee - 15 October 1998 - Report No 1063/98 - Coast Protection at Carnoustie Phase II.

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REPORTS/coastal.update