

## Livermead Sea Wall Collapse – Lessons Learnt

### Background

A briefing report on the breach to the sea wall at Livermead was considered at the meeting of the Overview and Scrutiny Board in April 2013. The report answered five specific questions which had been raised by the Vice-chairman of the Board and gave a summary of the response to the incident. At that meeting, the Board agreed that it would carry out a review into the circumstances surrounding the collapse and the subsequent response to determine if lessons could be learnt.

### Scope of the review

In terms of the collapse at Livermead in April 2013:

- To understand the decision making process up to the start of the contract to carry out works to the sea defences at Livermead.
- To review how the public were kept informed during the period of the collapse and subsequent discharge of sewage from Hope's Nose.

In relation to the sea defences generally:

- To consider the prioritisation of future works to Torbay's sea defences and the associated the budget position.

Responses to the Questions Raised by Overview & Scrutiny

#### **A. Decision making process**

##### **1. When was the previous inspection of the sea wall at Livermead? How does the inspection report from May 2012 compare with the previous report?**

A detailed inspection of all of the coastal assets in Torbay is carried out annually. In addition following severe storm conditions or as a result of reports of damage from members of the public or beaches team inspections are undertaken. Details of the inspections undertaken since 2010 for Livermead sea wall are detailed below:

**2010 Inspection** – Large voids identified in revetment. Short length of revetment completely destroyed. Stonework / pointing missing. Following this inspection report limited works were carried out as permitted by budget constraints.

Late 2010. Large cavity in sea wall adjacent to access steps. Emergency repairs carried out using pumped and spray concrete.

**2011 Inspection** - The report identified pointing works required; parts of the revetment were missing as previous, evidence of voids within the remaining revetment. Following this inspection report further repair works were carried

out as permitted by budget constraints. These works included some sprayed concrete works to the revetment south of the access steps.

March 2012 – Voids were identified in the base of the sea wall where revetment was previously destroyed. Emergency repairs carried out including filling voids with concrete, sand-bagging (concrete filled bags) to the wall at beach level.

**2012 Inspection** - Major work needed to revetment. Further large holes in base of sea wall where the revetment had previously been destroyed. Deep pointing required. As a result of this report major repair works were proposed.

**2013 Inspection** - No inspections carried out - major works in progress. Prior to the major wall sea breach in April 2013, minor works continually being identified with only short-term solutions being implemented due to limited budgets.

**2. Funding for the works was agreed in July 2012 but with an instruction to apply for match funding. Why was remedial work not carried out at that stage? Did the delay, caused by applying for match funding, mean further damage was caused to the wall contributing to its collapse?**

Following approval of the Council funding being available for the repair works to Livermead Sea Wall from Scope in July 2012 detailed design works for the repair works was commenced. In addition, as the Council do not hold a select list of contractors for this type of repair works Procurement advertised the works and any contractor that expressed an interest was sent a pre qualification questionnaire (PQQ) to complete. Following receipt of the PQQ's, a detailed assessment was undertaken and the most suitable contractors were chosen.

On completion of the detailed design works and the production of the contract documents the successful contractors were invited to submit their tenders for this work. Following receipt of the tenders, a detailed tender review was undertaken including an assessment of the costs and the construction methods proposed. As a result of this detailed assessment the most economically advantageous contractor was chosen to undertake these works.

There was no delay in the project as a result of the application for match funding as this ran concurrently with the design and procurement process. With regards to the application to the Environment Agency for match funding, works commenced on preparing a detailed project appraisal report following approval of the Council's funding being in place. Prior to this the proposed repair works to the sea wall had been included within the Council's application for schemes to be identified on the EA's medium term financial plan.

The project appraisal report that is required to be submitted to the EA's project appraisal board to secure grant in aid funding is a very detailed document that requires specific information relating to the reasons why the scheme is required, the history of problems being encountered, all options

that have been considered, a comparison of the options and justification why the proposed option has been chosen, the estimated cost of all the options, an assessment of the damages that will occur if no works are undertaken and the benefits that all options will provide. This report was due to be submitted to the EA in late spring however as a result of the breach occurring to the sea wall on Easter Monday it was agreed that an report could be submitted to the project appraisal board in May 2013 using a reduced project appraisal report. The scheme was considered at the project appraisal board on 21<sup>st</sup> May 2013 and following detailed questioning of Torbay Councils representative the scheme was approved for grant in aid funding.

**3. How did South West Water engage with contractors and at what stage? Could this have been carried out earlier (i.e. before the contract was awarded)?**

South West Water were reluctant to make decisions regarding approval for the proposed method of working the Contractor wished to use at Livermead passing this process to their consultants. This took several weeks to reach an agreement. We are not aware that any of the six tenderers sought approval of their method from South West Water in advance of contract award..

Within the contract documentation the contractor was required to speak to all statutory undertakers with regards to the scheme. Due to the location of the rising main under the pavement behind Livermead sea wall, prior to the breach and the contract commencing, the Contractor was made fully aware of their obligations to contact SWW and agree their proposed temporary works.

**4. The Board received the summary of the incident response at its meeting in April 2013. Was this in accordance with the Council's emergency procedures? Have those procedures been reviewed to take account of any lessons learnt?**

The response to the incident was in accordance with the Council's emergency procedures. However, a Lessons Learnt exercise has been carried out and identified two issues:-

- 1) The Council had the South West Water contact numbers for their customer contact centre rather than their emergency control centre.
- 2) Whilst the incident mainly involved officers from Resident and Visitor Services an emergency management team could have been formed to manage the incident.

**5. How much have the emergency works cost compared to the costs anticipated for the managed works? How will these additional costs be met?**

The emergency works have cost in the region of £130k. The entire contract including the emergency works cost £523K. The original contract value was for approximately £350K. These costs are only for the physical works

undertaken on site and do not include for the detailed design and supervision of the works, site investigations, surveys or the cost of the repairs to the rising mains.

It should be noted that the original contract was for the repair of only 40m of revetment at the base of the sea wall. Due to the breach and the additional damage to the revetment the entire length of revetment has been strengthened. This equates to a length of over 4 times the original length of repairs for an additional cost of only £43K.

The additional cost of the works has been included within the application to the Environment Agency which received approval for grant in aid funding at the meeting in May 2013.

## **B. Communication**

### **6. Do you believe the community could have been better advised about the spill? Why was there no general release of information as to whether swimming was safe?**

Torbay Council and South West Water went to great lengths to provide public information relating to the road and sea wall problems and the associated release of sewage. This was done via news releases, website updates, social media and the display of warnings on Torbay beaches. Warning measures were put in place on Tuesday morning, following the decision taken by South West Water to activate the screened overflow system at Hope's Nose. The decision was taken for signs to be deployed at all the designated bathing waters around the Bay as a precautionary measure. This action began mid-morning. The sewer line failed at Livermead just before midday on Tuesday 2 April when signs were already being put in place.

A news message describing the incident and its effect was placed on the Torbay Council website on Tuesday 2 April. This appeared on the main Beaches page and also under the separate page for Bathing Water Quality, and was periodically updated on 2, 3, 5, 8 and 10 April.

News releases, member briefings and media enquiry responses were issued over a period of several days. The Communications Teams in Torbay Council and South West Water also co-ordinated various radio and television filming and interview requests from the BBC and ITV Westcountry to ensure that all the relevant public information was presented via the media.

### **7. Who took responsibility for informing the public about the sewage in the water? Where both South West Water and the Council clear about those responsibilities?**

South West Water and Torbay Council both took responsibility for informing the public about the sewage in the water. On the morning of Tuesday 2 April

2013, Torbay Council's Communications Team was advised of the collapse of part of Torbay Road and the hole in the sea wall, and was given information for the preparation of a news release.

This information included the fact that the council was working with colleagues in South West Water as some utility apparatus had been exposed,.

In line with standard practice when a partner agency is involved, a Torbay Council Communications Officer contacted South West Water's Communications Team to discuss the best way forward with the management of publicity.

It was agreed that the council would handle the public information relating to the road closure and a description of what had occurred, whilst South West Water would deal separately with public information relating to its infrastructure, the problems for Torquay's sewage system and the use of the overflow system at Hope's Nose.

There was a clear understanding between Torbay Council and South West Water on their respective responsibilities.

**8. Why did the Council not inform the public of the consequences of the decision to turn off the sewage pumps in the press release issued on the Tuesday following the collapse (2 April 2013)?**

The response to Item 7 explains the reason why this information was not included in Torbay Council's news release.

**C. Future works**

**9. Whose responsibility is it to maintain the sea defences in Torbay?**

Policy responsibility for all flood and coastal defences lies with the Environment Agency (EA). However, this responsibility is often cascaded down to maritime authorities as land owners, as is the case with Torbay.

**10. What is the current condition of the sea defences in Torbay? How are these monitored?**

The sea defences in Torbay are under continuous attack from the prevailing easterlies and are subject to erosion. They are visually inspected annually by the cliff inspectors.

Additional inspections of the known vulnerable locations are carried out following storms. Sites will also be inspected following reports of concerns / failures from other sources.

**11. What impact will the (apparently) changing weather patterns have on the condition of the sea defences?**

Unprecedented stormy / rain conditions, rising sea levels and wind strengths are predicted. This will increase the risk of severe damage and collapse to many of our vital sea defence walls, many of which were built by the Victorians well over 100 years ago.

A significant percentage of the coastal geology of the bay is soft sandstone / breccias / mudstone sandwiched within layers of limestone. The softer material will erode faster and absorb more moisture causing it to slide and or topple. With predicted climate change, these materials will erode faster and absorb more moisture causing them to slide or topple.

Scouring, caused by future aggressive sea conditions will erode the foundations of sea walls and the bases of cliffs, potentially causing loss of stability and eventual collapse. Rising sea levels will also cause a phenomena referred to as 'coastal squeeze'. This will lead to less and less beach area being exposed by the sea, even at low tide.

**12. Will the monitoring arrangements change as a result of the collapse at Livermead and/or the changing weather patterns?**

Unlikely due to constraints on current resources resulting from funding pressures on this discretionary budget.

**13. What arrangements are in place for the repair and maintenance of the sea defences?**

Sea defences inspected annually through the maintenance contract with TOR2. The inspectors provide reports to the Engineering Division indicating any works they consider necessary. Areas will be assessed by the Engineer. Depending on the scope of works required, orders will be placed with TOR 2 to carry out the necessary remedial works.

If substantial remedial works, or emergency works have been identified, estimates are prepared. Cases are then put forward to secure funding. Depending on values and if TOR2 decline, tenders will be sent to competent contractors, which are evaluated. Award of contract made to the successful contractor.

#### **14. How are repairs and maintenance to the sea defences funded? What is the current budget provision set aside for this issue?**

There are various different funding streams that are used to try and secure funding for the repairs and maintenance of the sea defences. These include internal funding through the Council capital budgets, EA grant in aid funding, local levy funding, occasional private / community funding and developer funding through Section 106 or the community infrastructure levy ( when commenced).

Where grant in aid funding is applied for from the EA the scheme must first be included in their medium term financial plan. Applications for schemes to be included on the medium term financial plan are submitted annually. Once a scheme has been include on then medium term financial plan the detailed business case (project appraisal report) has to be submitted to the EA's project appraisal board. As part of this process a detailed cost benefit analysis is required to be completed identifying the assets that will benefit from the scheme and the estimate of these benefits compared to the do nothing scenario.

It should be noted that as a result of changes to the grant in aid funding mechanism all scheme will in the future require an element of partnership funding. Before the grant in aid funding is released this partnership funding must be secured.

The current revenue budgets in place for maintenance of sea walls and coastal areas are as follows:-

General Coastal works	£12,100 (to serve in excess of 60 sites)
Livermead & Meadfoot Sea Wall(s)	£19,800 (Highways Budget)

Currently Torbay have submitted the following schemes to the E.A. for inclusion on their Medium Term Financial Plan for coastal defences.

- Broadsands Sea Wall repairs £ 150,000
- Torbay Coastal defences £1,085,000 (over 5 years)
- Haldon and Princess Piers £5,989,000
- Meadfoot Sea Wall £ 155,000
- Victoria Breakwater £ 197,000

#### **15. How are repairs and maintenance to the sea defences prioritised alongside other demands?**

Dictated by both severity and location and within the budgets set by Full Council as part of the annual budget review.

**16. What external funding opportunities are being pursued? What discussions are taking place with other authorities and central government about this issue?**

Refer to 14 above.