

Report To: Communities Scrutiny Committee

Date of Meeting: 12 March 2015

Lead Member / Officer: Lead Member for Public Realm/
Head of Highways and Environmental Services

Report Authors: Head of Highways and Environmental Services and
Senior Engineer: Highways and Environmental Services

Title: Rhyl Coastal Defence Assessment

1. What is the report about?

The draft Rhyl Coastal Defence Assessment report, which was commissioned by Denbighshire County Council after the December 2013 coastal floods.

2. What is the reason for making this report?

The Council's Communities Scrutiny Committee considered Denbighshire's Local Flood Risk Management Strategy at its 4 December 2014 meeting. The Committee also expressed a wish to view the Rhyl Coastal Defence Assessment; to understand the Welsh Government (WG) and National Resource Wales (NRW) responses to it, and to consider the implications in terms of any works that might be required, and the availability of potential funding streams.

3. What are the Recommendations?

That the Committee;

- a) notes the contents of the report;
- b) notes (for the sake of clarity) that the overtopping frequencies quoted in the report are not synonymous with the "property flooding frequency" figures, typically used in WG assessments of risk; and
- c) endorses the development of the flood risk mitigation schemes that are now being progressed by the County Council.

4. Report details.

a) Nature of the Rhyl Coastal Defence Assessment

The draft report is included as appendix A. JBA Consulting were instructed to carry out a hydraulic analysis of the east Rhyl coastal defences to establish the standards of protection that they provide. They were asked to consider the likely inundation caused by a 1 in 200 year event, and also to determine the return period (severity) of the December 2013 storm.

The consultants employed current industry standard wave modelling techniques, recognised by both Defra and NRW, and incorporated historical wave data for the Irish Sea, together with available information about the profile of the sea bed (bathymetry).

b) Main conclusions

The consultants concluded that the standard of protection provided by the coastal defences between Splash Point and the east end of Rhyl Golf Course varies between 1 in 5 year and 1 in 50 year, based on an overtopping rate of 10 litres per second per metre. In addition, the rate of overtopping during a 1 in 200 year storm event is predicted to be in the order of 65 litres per second per linear metre of defence at Splash Point. If climate change projections prove to be correct, this could increase to 100 litres per second per metre by 2115.

c) Subsequent discussions with NRW

NRW were provided with a copy of the report and were interested in the predicted rate of overtopping for the 1 in 200 year event, i.e. because the figure was higher than NRW were predicting using its own Flood Forecasting Model NRW have subsequently acknowledged that the JBL model is highly detailed and therefore likely to be accurate

A meeting took place on 30 January 2015 between the Council, NRW and JBA Consulting to discuss the findings and to agree whether or not further work was required. JBA described some recent research and development work they had been involved with, using advanced statistical methods. This included probability analysis of multiple/joint events in severe conditions (e.g. high astronomical tides combined with a storm surge and strong onshore winds). In addition, the historical wave data recently made available by the British Oceanographic Data Centre (33 years of data now available, as opposed to 8 years of data).

The availability of reliable data, and the improved modelling confidence levels that they provide are crucial factors in the development of flood risk mitigation scheme All parties therefore agreed that it would be beneficial for JBA Consulting to carry out further work using the extra data and the more advanced statistical methods.

d) Relevant to property flooding rates

There is a risk that some of the contents of the assessment could be misinterpreted, and might therefore increase anxiety levels in flood risk areas. It is therefore important to emphasise that the analysis work is being done in order to justify expenditure on flood mitigation measures. In order to justify the expenditure, we have to demonstrate the risk.

The overtopping rate of 10 litres per second per metre is based on the hazards to people walking on the promenade. Obviously, the rate of overtopping that would cause flooding to properties will be considerably higher. For example; in the Garford Road area of Rhyl, there is a secondary sea defence, designed to cope with moderate rates of overtopping. JBA have therefore been asked to reassess the rate of overtopping at which property flooding is likely. It is anticipated that the further analysis will be completed by the end of April 2015.

e) Schemes to mitigate risk

- a) The Council has already let a contract to improve the exit from the secondary lagoon onto the golf course (i.e. to disperse any overtopping from behind the Garford road area. Work is underway at the moment
- b) A related scheme will also be undertaken later this year, designed to contain water within the golf course, and release it back to sea at the next high tide. The scheme is currently being designed, in consultation with the Golf Club.

- c) Local residents have been fully informed about the nature of these schemes and how they will reduce flood risk to their properties. The schemes have been well-received.
- d) The main “beach side” coastal defence system (necessary to reduce wave height) has not yet been designed. The scope and nature of the main defence system will be determined by use of the mathematical model that JBA have been working
- e) Funding
 - WG's Head of Flood and Coastal Erosion Risk Management has visited the east Rhyl area on several occasions and is supportive of the Council's efforts to reduce coastal flood risk. The current Minister for Natural Resources, Carl Sargeant AM, visited east Rhyl on 5 January 2015 and has also expressed his support.
 - Regarding the proposals for the golf course, the Council has written to WG seeking confirmation that the proposed works are eligible for grant funding.
 - WG are currently consulting on their Flood & Coastal Investment Programme (closing date 6 March 2015). The consultation makes it clear that WG is committed to continuing funding for flood and coastal defence schemes.
 - The 2013 Rhyl coastal floods were the worst in Wales during the last 25 years. For that reason; we would expect the area to feature in any objective assessment of flood risk. In addition, the Shoreline Management Plan (approved by Welsh Ministers in January 2015) policy for east Rhyl is "hold the line".
 - WG is developing a funding programme for coastal flood risk management work, which will release £150 million between 2018 and 2021. WG has already provided substantial funding (more than £1.3 million) to the Council to carry out urgent coastal defence repair works at a grant rate of 100% (the rate is normally 75% maximum).

5. How does the decision contribute to the Corporate Priorities?

One of the Council's stated priority is to protect vulnerable people. That priority was written in 2012, and was not written with flooding in mind. Nevertheless, it reflects the importance that the Council attaches to the welfare of its residents, and for the people who live in flood risk areas; being safe from flooding is probably their top welfare priority

6. What will it cost and how will it affect other services?

The flood mitigation measures are still being designed, so there are no cost estimates at present. However, the main coastal defence scheme is likely to be a multi-million pound scheme that will need WG support. When major floods occur, the Council incurs significant costs in relation to emergency response functions, and the subsequent welfare-related activities. These costs can be avoided if the flooding can be prevented.

7. What are the main conclusions of the Equality Impact Assessment (EIA) undertaken on the decision?

This is a technical report about flood risk. There are no differential effects on specific groups.

8. What consultations have been carried out with Scrutiny and others?

This is a technical report about flood risk. It is likely to be cited in the preparation of options (for flood risk mitigation), but those options have not yet been prepared.

9. Chief Finance Officer Statement

Not obtained (there is no proposal to spend yet).

10. What risks are there and is there anything we can do to reduce them?

The risks associated with coastal flooding are explained in the report

11. Power to make the Decision

Section 111 Local Government Act 1972 and Section 2 Local Government Act 2000 as general powers, enable the Council to make decisions such as this, and articles 6.3.2(c) and 6.3.3(a) of the Council's Constitution sets out scrutiny's role with respect to policy development.

Contact Officers:

Head of Highways and Environmental Services

Senior Engineer: Highways and Environmental Services