

## **Response to queries from the Abbey Ward Flood Group and the Federation of Bath Residents Association and local residents (February 2016)**

The following responses have been prepared by the Environment Agency and Bath & North East Somerset Council in February 2017:

### **1) What long-term will be the effect of Climate Change on the flood risk**

There are currently around 500 properties at risk of flooding for a 1 in 100 year storm in Bath. This is expected to increase to nearly 1500 in 100 years' time due to climate change. If we stopped all investment in flood risk management in Bath, the flood defence scheme would deteriorate over time, increasing the risk of gate failure and blockages at bridges along the river. If Twerton and Pulteney gates failed shut and there were partial blockages of 4 bridges, there would be approximately 2600 properties at risk during a 1 in 100 year flood event in 100 years' time.

### **2) Will these plans for Twerton and Pulteney have any significant effect on that?**

We will be continuing to invest in flood risk management in Bath to maintain the current standard of protection and manage the risk of gate failure. Under current spending rules, we cannot get funding to protect against the effects of climate change (see question 4). The flood risk will therefore increase over time with climate change, unless funding of further projects can be obtained in the future.

### **3) Has the "Condition Survey" of both Radial Gates been completed? If so what were the results, particularly for Pulteney Gate. If not when will we get it?**

The detailed condition assessment of Pulteney and Twerton gates has now been completed and we are expecting the results from testing that was carried out by the end of March 2017. This will enable us to get an estimate of the remaining life of the gates.

### **4) The maps and "Do Nothing" options were calculated without taking account of Climate Change. What was the reason for this and what effect will climate change have on the conclusions?**

Central government funding for flood defence is allocated based on the benefits gained by protecting against the current level of flood risk. All options and schemes across the country are therefore considered on the same basis, without an allowance for climate change.

### **5) The appraisal time for the gates is taken over 50 years. Is it reasonable to take the same period for the Flood Walls? If not what effect would this have on the cost calculations?**

If we were to progress with the appraisal of the flood walls, we would consider a longer period. However, this would not make a difference to the outcome (see question 6). We will not be taking the option for flood walls further at this stage, because there is a funding shortfall of £40 million.

### **6) Noting that an allowance of 10% has been included for damages to infrastructure etc. in the "Do Minimum", do you think this is adequate allowance for flooding in WHS and with historic listed buildings, care homes, schools, hotels etc.?**

There has been an allowance made for damages appropriate for this stage of work. We have also carried out a sensitivity assessment, which showed that even if we doubled the amount of damages, we would still have a funding shortfall of over £20 million.

**7) Do you think the actual costs of a flood to Bath have been calculated? (it is estimated that the 2013 floods in the Somerset Levels cost Somerset Tourism £200m)**

Because of the way government funding for flood defence is allocated to the Environment Agency, the cost of flooding doesn't make a big enough difference to the amount of grant available. The Council is currently collating available information to estimate the broader costs. See question 6.

**8) Can you estimate how detrimental it would be to ignore a combined scheme?**

The combined scheme, including improved gates and walls would protect around 350 additional properties from flooding and prevent £15 million of damages. However this scheme has a cost of £50 million and would only be eligible for £10 million of government funding. It is therefore unaffordable at the current time.

**9) Walls through town are discounted due to "visual impact". Has this been tested and what difference to the walls being constructed now along Lower Bristol Road?**

Although visual impact would be a consideration, walls have been discounted because there is no funding currently available.

**10) Have the Riparian owners been consulted in any of these plans?**

As we are not progressing with the walls, there will not be a need to consult riparian owners.

**11) Can you elaborate on the second paragraph of the Recommendations mentioning new baseline water levels being set if work at Twerton is completed alone? Will this make any future scheme in Residential areas more difficult?**

Walls would increase the river levels, but an improved gate arrangement at Twerton would reduce the river levels, helping to mitigate this issue. If we were proceeding with the full scheme, then they would have to be considered together. However, as we are not currently progressing this option, this will not be an issue.

**12) What future studies and consultations are planned and are these to the goal of a "holistic flood risk solution for Bath"? (p34)**

We will not be progressing with the wider solution including walls, unless significant funding becomes available. We are however, progressing with the options for the gates and continue to work with developers to manage flood risk at smaller sites along the river.

**13) Are B&NES supporting this "joined up approach"?**

B&NES and the EA have worked closely together to investigate the options available to improve the level of flood risk management in Bath. We will continue to work together in the future to seek a joined up approach to flood management in the city, and wider Bristol Avon catchment.

**14) Have the economic impacts (e.g. impact on tourist income, damages and loss of commercial income etc.) caused by flood events in Bath been taken into account when making the case for government funding?**

Flood Defence Grant in Aid allows the economic impacts of flooding to be factored into the business case in accordance with Government guidance. Accordingly, the joint River Avon Options Appraisal Report did take into account the impact of flooding to the value of an estimated £174 million. A sensitivity test was also carried out, where the cost of these damages were doubled, even with this sensitivity test there was a funding shortfall against eligible government funding of over £20 million. There would therefore be no difference to the affordability of the scheme. It would be difficult to justify the doubling of the cost of these damages in any event.