

Report sponsor: Head of City Development and Growth  
Report author: Principal Project Engineer

## **Our City Our River – Flood Defence Effectiveness**

### **Purpose**

- 1.1 Scrutiny have asked for a report on the **‘What assessment has been carried out to predict the effectiveness of the flood defence system in the event of an extreme event?’**

### **Recommendation**

- 2.1 To note the information provided in this report.

### **Reasons**

- 3.1 To update the Board on the current position.
- 3.2 To allow the Board an opportunity to make any further comments or recommendations.

## Supporting information

- 4.1 The Lower Derwent Flood Risk Management Strategy was developed by the Environment Agency (EA) and adopted in January 2011. The preferred approach to managing flood risk is to maintain the existing defences and continue to provide flood warnings; promote improved upstream land management practices to reduce surface run-off (taken forward as the Derwent Land Management project); and provide new defences to reduce flood risk and improve conveyance around structures which obstruct flow. In Derby the defences are to be set back from the river's edge to make space for flood water and improve conveyance through the city.

The "Our City Our River" Derby Flood Risk and Regeneration Scheme is a project developed from the Environment Agency's Lower Derwent Flood Risk Management Strategy and Derby City Council's (DCC) 2012 adopted Masterplan for the redevelopment of Derby City.

The Our City Our River scheme on the River Derwent through the City of Derby, East Midlands, is a 'change standard of service' project supported by an approved strategy.

The Lead Authority for the delivery of the scheme is Derby City Council

- 4.2 The EA commissioned the design of flood defences through Derby; this was produced by their technical consultants Black and Veatch. In order to design the height of the defences the Derwent river catchment has been hydraulically modelled, this model is then used to simulate various storms up to the required 1 in 100 year design storm, the model includes the proposed flood defences. The defence lines in the model are represented as a 'glass wall' which contains the flood water, and the maximum height of the water is predicted. On top of this peak level a freeboard allowance is added, this is typically 400-500mm. The structures are designed to support the loading from the flood water and impact loading from debris.
- 4.3 The whole project has been split into three work packages stretching a total of 13.2km along the River Derwent, with an optimum sequence of delivering the sites within each package. The sequence has been derived on the basis that benefits from the scheme should be delivered at the earliest opportunity and that the delivery of each site should not increase flood risk to other sites.
- 4.4 Package 1 of the scheme has been completed; this delivers enhanced flood protection to over 800 homes and 400 businesses within this package area.
- 4.5 Work has commenced in Package 2 with work on the west bank of the river between Full Street and Pride Park.

The alignment of the defences on the east bank of the river are being reviewed to offer more regeneration opportunity, better urban open space and produce a more resilient highway infrastructure. These proposals will be subject to a new planning application. These next steps were the subject of a cabinet report 12 February 2020.

- 4.6 The new flood defences consist of passive defences (walls and embankments) and active defences (flood gates, pump stations). The new defences will be operated and maintained by the City Council for their design life of 100 years.

### **Public/stakeholder engagement**

- 5.1 None to note as part of this report.

### **Other options**

- 6.1 None to note as part of this report.

### **Financial and value for money issues**

- 7.1 None to note as part of this report.

### **Legal implications**

- 8.1 None to note as part of this report.

### **Other significant implications**

- 9.1 None to note as part of this report.

**This report has been approved by the following people:**

<b>Role</b>	<b>Name</b>	<b>Date of sign-off</b>
<b>Legal</b> <b>Finance</b> <b>Service Director(s)</b> <b>Report sponsor</b> <b>Other(s)</b>	Catherine Williams	02/09/2020

<b>Appendices:</b>	Appendix 1 - Flood Defence Benefit Map
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