

## Housing and Infrastructure Board

**29 June 2022**

### **Successful Flood Alleviation and Resilience Schemes**

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**Is the paper exempt from the press and public?** No

**Reason why exempt:** Not applicable

**Purpose of this report:** Discussion

**Is this a Key Decision?** No

**Has it been included on the Forward Plan?** Not a Key Decision

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**Director Approving Submission of the Report:**

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#### **Executive Summary**

Following the launch of the Connected by Water Plan, the Board requested information on previously successful flood alleviation and resilience schemes in South Yorkshire. This report provides case studies of such schemes which have been delivered across South Yorkshire in recent years.

#### **What does this mean for businesses, people and places in South Yorkshire?**

Existing flood alleviation and resilience measures contribute to reducing the risk of flooding to homes, businesses and infrastructure, as well as improving the resilience of places to climate change and potential future flooding. The Connected by Water Plan aims to help develop this response further at a catchment scale, identifying and securing additional funding and investment to reduce flood risk.

## **Recommendation**

The Board is asked to:

- Note the case studies in Appendix A of successful flood alleviation and resilience schemes delivered in recent years within South Yorkshire.

## **Consideration by any other Board, Committee, Assurance or Advisory Panel**

N/A

### **1. Background**

- 1.1 The Connected by Water Plan, launched in January 2022, is part of our region's catchment scale response to flood risk and the climate emergency in South Yorkshire. It sets out a strong regional ambition to reduce flood risk and build climate resilience so that people can live, work and thrive in South Yorkshire in the face of a changing climate.
- 1.2 Whilst there is significant work and funding required to implement and deliver the Plan, it is building upon strong foundations with the successful flood alleviation and resilience schemes which have already been implemented across South Yorkshire.
- 1.3 As requested previously by the Board following the launch of the Connected by Water Plan, further information on successful flood alleviation and resilience schemes within South Yorkshire is provided as case studies within Appendix A. These will contribute towards the suite of case studies supporting learning of effective approaches to flood risk and resilience in our region to inform future updates of the Connected by Water Plan.

### **2. Key Issues**

- 2.1 The devastating flood event of November 2019 was a key driver for partners in South Yorkshire to come together to develop a partnership-led, catchment scale approach to flood alleviation and resilience. However, numerous schemes to reduce flood risk and improve resilience have already been delivered. Appendix 1 provides case studies of a number of these successful initiatives:
- Bentley Ings Pumping Station – Doncaster
  - Rotherham Renaissance Flood Alleviation Scheme Phase 1 – Rotherham
  - Lower Don Valley Flood Alleviation Scheme - Sheffield
  - Lang Avenue, Lundwood - Barnsley
- 2.2 **Bentley Ings Pumping Station** lies north-east of Doncaster and protects over 3,000 properties in the wider area as part of active flood management. Built in the 1940s, the pumping station was upgraded following its failure during the 2007 flood event which resulted in flooding to around 600 properties. The £14m refurbishment, officially opened in March 2022, has:
- Reduced flood risk for 1,699 properties.
  - Increased pumping capacity by 20%.
  - Reduced operational carbon emissions by 2%.
  - Improved access and resilience, including electrical controls raised above the 1/1000 flood level.

- 2.3 **Phase 1 of the Rotherham Renaissance Flood Alleviation Scheme** delivered flood defences to a 1 in 100 year probability level, with structure foundations designed to allow raising without further modification for future climate change capacity. In addition to flood defences, working in partnership with a range of organisations the scheme delivered a new wetland nature park which provides compensatory water storage improving flood resilience as well as delivering environmental improvements. The £16.3m scheme has:
- Reduced the risk of flooding to people, property and infrastructure.
  - Created improved economic conditions in key employment areas that protect existing jobs and create new ones.
  - Provided future proofing to enable the construction of future phases.
- 2.4 Completed in 2017, the £21m **Lower Don Valley Flood Alleviation Scheme** stretches 8km along the River Don. It was developed by Sheffield City Council in partnership with the Environment Agency and was supported by the Sheffield Chamber of Commerce and Industry. It delivered new flood defence infrastructure designed to allow for the provision of further climate adaptation in the future, river maintenance, and riverside enhancement, including installation of a fish pass at Sanderson's Weir. The scheme:
- Was innovative in its adoption within a Business Improvement District and a social enterprise, the River Stewardship Company.
  - Better protects over 300 businesses, securing approximately 5,000 jobs.
  - Has improved safety and public access to the river.
  - Improved opportunity for investment and regeneration, to deliver new homes and jobs.
- 2.5 The residential area around **Lang Avenue at Lundwood in Barnsley** is prone to flooding. The most recent flood events saw some properties inundated to a depth of approximately one meter. Following the 2007 floods Barnsley Council undertook a number of proactive steps to improve property resilience, including the installation of flood vents, door guards and waste pipe locks. In 2020, 70 properties were visited to check that defences installed at the properties were still working properly and to identify any works needed. Recognising that further measures may be needed to address the causes of more recently flooding in response to the 2019 flood events, development work has begun to consider further options. In advance of other measures, maintenance work to ditches has taken place which has already resulted in a reduction in flooding in the area.

### **3. Options Considered and Recommended Proposal**

This report and the case studies at Appendix A are presented for information, as requested by the Board. No options are identified for consideration.

### **4. Consultation on Proposal**

The Environment Agency, Sheffield City Council, Rotherham Metropolitan Borough Council and Barnsley Metropolitan Borough Council have assisted in identifying and preparing the case studies presented in Appendix A.

### **5. Timetable and Accountability for Implementing this Decision**

The case studies at Appendix A are presented to the Board for information.

**6. Financial and Procurement Implications and Advice**

There are no financial or procurement issues arising from this report

**7. Legal Implications and Advice**

There are no legal issues arising from this report.

**8. Human Resources Implications and Advice**

There are no human resources implications arising from this report.

**9. Equality and Diversity Implications and Advice**

There are no equality and diversity implications arising from this report.

**10. Climate Change Implications and Advice**

The climate and nature emergency requires a strong collective response to carbon reduction and to be more resilient to the impacts of climate change. The Connected By Water Plan will contribute by capturing actions of partners to reduce flood risk and build climate resilience across South Yorkshire, improving information and evidence to support decision making, and support investment decisions and delivery. It may also support the delivery of net zero targets by the provision of carbon sequestration.

**11. Information and Communication Technology Implications and Advice**

There are no IT issues as a direct result of this report.

**12. Communications and Marketing Implications and Advice.**

There are no direct communications or marketing implications arising from this report.

There may be media communication opportunities when the interventions set out in the Connected by Water Plan are delivered.

**List of Appendices Included**

Appendix A - Case studies of successful flood alleviation and resilience initiatives

**Background Papers**

[Connected by Water Plan](#)