

Northwich Town Centre Flood Mitigation Options – September 2024 Update

Background

On the weekend of 26th to 27th October 2019 and Storm Christoph on the 20th January 2021 major flooding occurred in Northwich Town Centre that affected several residential and business properties. These major flood events triggered the requirements to undertake formal Section 19 Flood Investigations as required by the Flood and Water Management Act 2010. One of the key recommendations identified was to undertake an Integrated Catchment Modelling exercise to reduce and manage the flood levels in Northwich Town Centre including the Bull Ring, London Road, High Street, Weaver Way and Castle Street and discuss opportunities for differing scale/timescale solutions to be developed.

Following Storm Christoph, Cheshire West and Chester Council as the Lead Local Flood Authority has been working very closely with both the Environment Agency and United Utilities through a partnership approach and have been working collaboratively in exploring feasible and optimum solutions to reduce flood risk within Northwich Town Centre.

Integrated Catchment Model Development

An integrated catchment model has been developed by combining the existing Environment Agency hydraulic model of the River Weaver and River Dane and their tributaries with the operational United Utilities model of the sewer network. The integrated model comprises the flood defences on the Weaver and the Dane and the operational rules for sluices and weirs for navigation purposes. Outfalls from the sewer network are connected to the river to model the impact of elevated river levels and the operation of flap valves. In addition, private drainage networks and highway drainage is incorporated into the integrated catchment model.

The integrated catchment model has been calibrated against both the October 2019 and Storm Christoph events and is able to replicate the observed flood impacts and mechanisms. To calibrate against the events some degree of river ingress into the sewer system was required to match those observations which represented some outfalls being unflapped. Since Storm Christoph all outfalls have been flapped and are being properly maintained by the relevant owners. The modelling has also identified additional potential ingress into the sewer system which is currently being investigated. At the current time, the modelling has not been able to define the source and nature of any inflows.

Feasibility Assessment of Flood Risk Measures

A long-list of Measures was developed as part of a workshop between all partners (Cheshire West and Chester Council, Environment Agency and United Utilities) to identify Measures which are applicable to all flooded areas experienced during Storm Christoph.

The long list of Measures was assessed at a high level against a number of factors including Technical Viability, Health and Safety, Costs, Benefits, Funding Potential, Environment, Sustainability, Climate Change Resilience and Stakeholder and Public Perception.

The integrated catchment model has assessed a range of measures including upstream storage, improvements to the sewer network and upgrading the pass forward flows to Northwich Treatment Works to identify the scale of works required and the comparative technical feasibility of measures to reduce flood risk in Northwich Town Centre.

Next Steps

The feasibility assessment has demonstrated that there are no short-term measures to mitigate the flood risk in Northwich Town Centre and large-scale infrastructure works will be required in the long-term. Therefore, all partners will continue to work together in implementing the emergency pumping plan successful in managing flood risk during Storm Babet. Partners will continue to reflect on lessons learned responding to storm events in the short term to assess how and where over-pumping capacity can be increased to provide additional resilience during a storm event.

Long term solutions have been identified for further assessment which include both changes to local planning policy, green solutions (e.g., SuDS, WINEP) and large-scale infrastructure works (e.g., storage). Further assessment is to be undertaken of large-scale infrastructure works in terms of technical feasibility, land availability, environmental impacts, cost benefit analysis and funding options to determine preferred option.