Ousemere Lode, Billingborough

Review of Flooding 6th to 7th January 2025

Executive Summary

What happened

Late December 2024 to early January 2025 brought extreme wet, and wintry weather. Record rainfall occurred on 5th January, exacerbated by saturated and frozen ground, leading to significant flooding. Over 50mm of rain fell in some areas from 4th–6th January, causing extensive flooding in Lincolnshire, with homes, schools, and farmland affected. Billingborough experienced internal property flooding to 15 homes, with river levels peaking at 9.79m above sea level in the early hours of 6th January 2025. Severe runoff from frozen, saturated ground exceeded river defences, causing channel exceedance in Billingborough.

Investigation into main river flooding

An investigation was conducted by the Environment Agency into the possible contributing factors for the flooding. Key areas reviewed include:

- Rainfall, catchment conditions, and river responses.
- Surface Water runoff and land drainage.
- Local drainage network.
- Impacts of Black Sluice Pumping Station's decommissioning.

Key Findings

- **Rainfall and Catchment Conditions**: High rainfall (43.6mm) fell on saturated and frozen ground, coupled with minimal vegetation interception, resulting in record river levels. These river levels exceed the modelled prediction for a 1 in 1000 (0.1%) chance in any one year plus an allowance for climate change level. This caused the river to exceed its channel capacity.
- **Surface Water runoff**: Runoff due to intense rainfall created overland flow pathways which is deemed as the initial onset of flooding.
- **Local Drainage network:** Following investigations there were some concerns and questions surrounding the conveyance issues within Billingborough. Some of the open ditches and culverted access bridges along Folkingham Road, may have reduced the effectiveness of water flow and other drainage networks became overwhelmed quickly based on local accounts.

Black Sluice Pumping Station Decommissioning:

The pumping station ceased operation in 2018 due to its minimal impact on flood risk compared to high refurbishment and operational costs. Data and observations confirm it would not have prevented flooding in Billingborough for three reasons:

- The pumping station's effect diminished upstream of Donington Bridge
- Peak levels were experienced in Billingborough, many hours before river levels had started to rise in Boston
- Billingborough is elevated at 9-10m above sea level, whereas the pumping station is much lower at sea level, and could reduce levels at this much higher ground

Actions which mitigated the impacts of the flooding:

- The flood warning service was used effectively offering warnings ahead of the flooding.

Key Actions the Environment Agency will be taking forward:

- **Flood warnings:** discuss with residents and the community about signing up to the flood warning service. Only 15% of residents were signed up to the flood warning service in January 2025.
- **Model review:** the Environment Agency will commission specialist modelling consultants to simulate the January 2025 floods to validate past predictions and inform future decisions. In addition, the Environment Agency will bid for funding to update the South Forty Foot model to incorporate advanced software, recent data, and climate change projections.
- **Work with Local Resilience Forum:** although we already do this, supporting the LRF in development of community emergency response plans is key to better protect the community from future flooding.
- **Support other Risk Management Authorities:** in their investigations to understand whether there are conveyance issues under the old railway embankment and how these can be mitigated.
- **Flood Action Group:** Support, assist and be visible with the flood action group for Billingborough and offer advice where appropriate on future schemes and developments within the community regarding flood risk.

Final Considerations

The Environment Agency recognises that while steps can be taken to improve resilience, flood risk cannot be eliminated. Future flooding events may exceed design standards for defences. Any proposals for improving flood protection must meet strict cost-benefit criteria based on predicted damages and frequency of flooding amongst wider issues.