

Horncastle Investigation Initial Findings – 30 November 2023

Storm Babet brought significant heavy rainfall across the county – the Bain catchment had up to two months of rain in a day. Some locations saw the highest recorded river levels – including on the River Waring.

How the reservoir works

The Horncastle Flood Storage Reservoir was constructed to reduce flood risk for properties from the River Bain in Horncastle and villages downstream, however flood risk cannot be removed entirely.

A control structure at the reservoir limits the flow of water from the Upper Bain catchment (north of the reservoir) by temporarily storing water in the reservoir. This control structure operates without any intervention and limits the flow of water downstream through Horncastle.

A separate sluice gate is in place to drain the agricultural land within the lowest part of the reservoir when it is not in use. The sluice gate is designed to close automatically several hours before the reservoir starts to fill. This allows time for the sluice gate to be closed manually, if required, and ensures the downstream flow is limited to reduce flood risk to properties alongside the River Bain in Horncastle and villages downstream.

Why did the sluice gate not operate as designed?

The sluice gate should have started to close automatically at 3.23am on 20 October. Issues with the sluice gate operating systems meant that it did not close as designed, nor did it give an adequate alert for it to be closed manually at that time.

We had duty teams working around the clock but the sluice gate was not closed manually until 2.15pm. This is because we were responding to multiple issues related to the significant heavy rainfall across the county.

What next?

The investigation, led by our Chief Engineer, into why the reservoir did not work as designed and the impacts of this remains active and ongoing. Unfortunately, it won't be completed by the end of November as we had hoped owing to the complexity of the technical work required. We are sorry about this and appreciate it may cause frustration.

We need to run additional computer modelling to fully understand the impact of the sluice gate not being closed sooner, given the significant heavy rainfall over the River Bain and its tributaries. This will simulate the run off response from the rainfall for each of the tributaries, as well as the River Bain. It will take into account the distribution and timing of rainfall, soil conditions and how the flow passes along the river systems. We hope to share the full findings in early 2024.

We are confident the flooding along Thunker Drain and the River Waring was not related to the sluice gate at the reservoir. This flooding was solely down to the quantity of rainfall in such a short period of time, resulting in the highest levels for 30 years.

We are making improvements to the asset to ensure it operates as designed. We have updated our operating procedures and have modified the software that controls the sluice gate. We continue to monitor the reservoir closely. We await the full findings of the investigation to see whether any further changes may be required.

We have sent letters to those in Horncastle and the surrounding areas inviting them to complete a data collection survey. This information will also help us understand what happened and inform how flood risk is managed in the future. The survey is online here www.smartsurvey.co.uk/s/LincsFlooding or we can post hard copies out. We would like to thank those who have already taken the time to complete this.