Flood Investigation Report

Storm Henk

2nd January 2024

Asfordby and Asfordby Valley

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Asfordby village is located within the Melton District approximately 3.5 km west of Melton Mowbray. Asfordby Valley is a smaller settlement, located approximately 1km to the east of Asfordby, adjacent to the Welby Brook.

The reported number of internal flooded properties did not trigger a formal investigation for Asfordby and Asfordby Valley.

12.1 LOCAL DRAINAGE CONTEXT

The River Wreake (an EA designated Main River) flows in a south-easterly direction to the south of Asfordby and Asfordby Valley as illustrated in Figure 12-1. Another Main River, Welby Brook, flows in a south-westerly direction alongside Welby Road and joins the River Wreake downstream of Asfordby Valley at Ordnance Survey national grid reference (OSNGR) SK 71565 18885. The responsible agency for managing the risk from Main Rivers is the EA. Details relating to RMA responsibilities can be found in Section 21 of the main Storm Henk report.

The flow routes within two defined Flood Areas (A and B) within Asfordby Valley and Asfordby respectively are illustrated in Figure 12-2 and Figure 12-3.

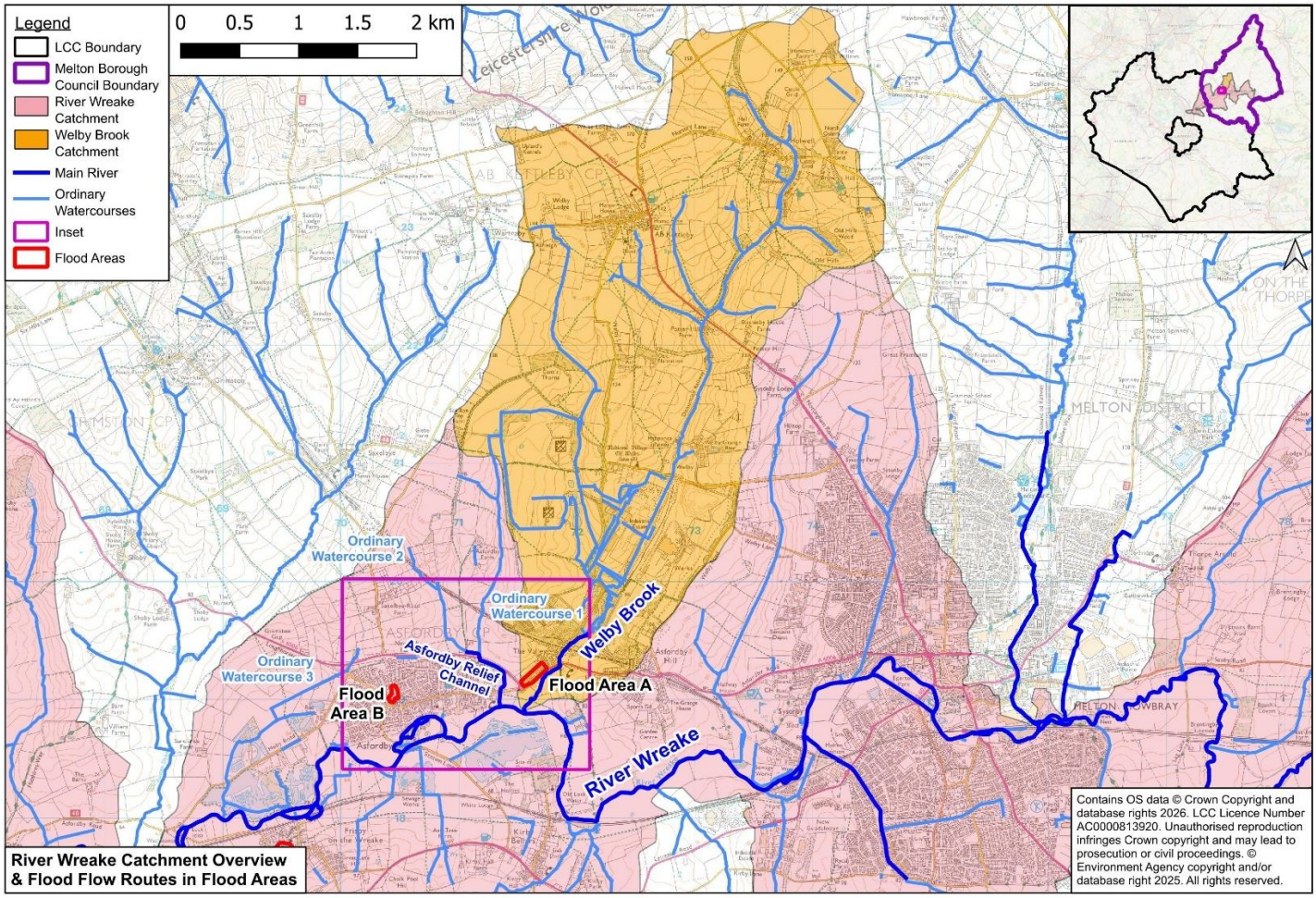


Figure 12-1: Asfordby and Asfordby Valley Location Plan, relevant Watercourse Catchment (INSET 5)

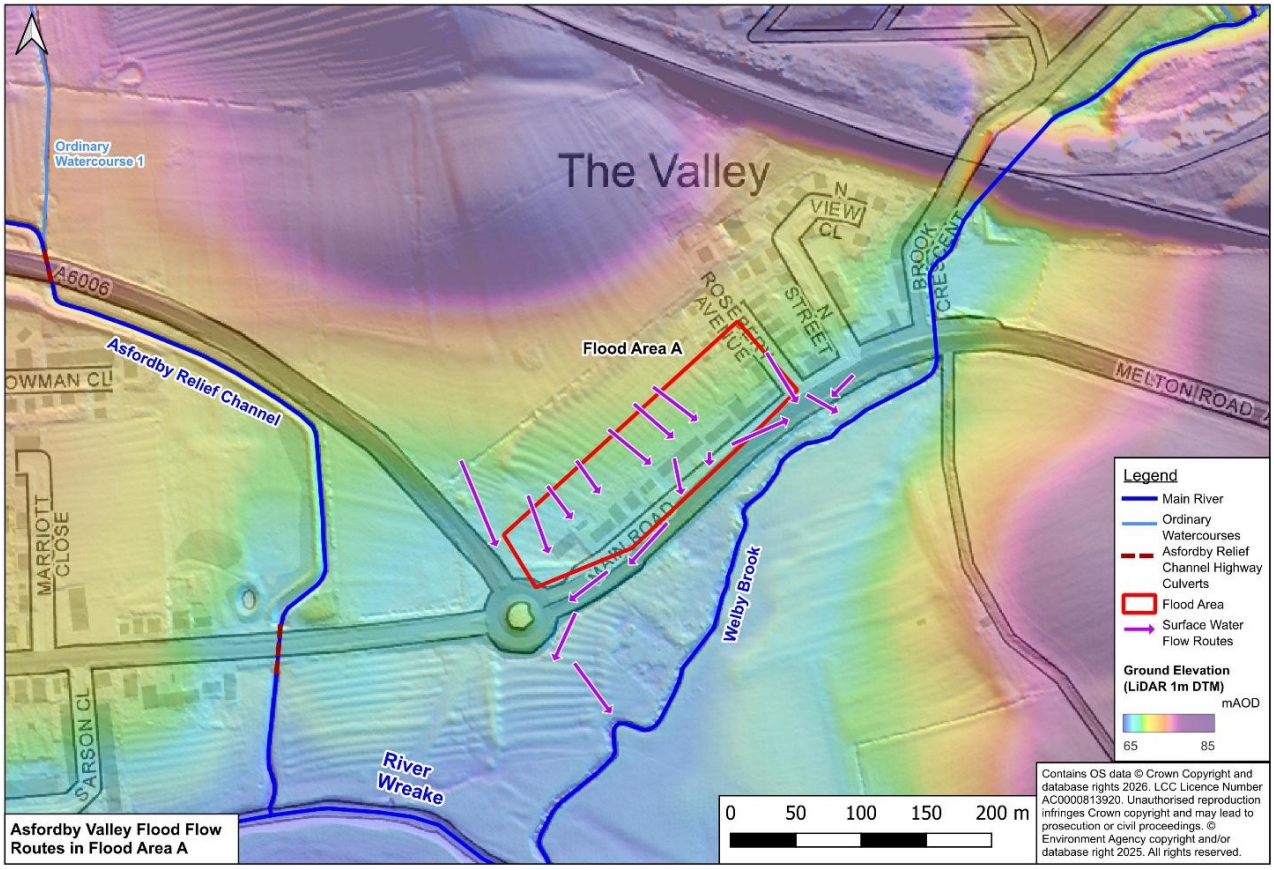


Figure 12-2: Asfordby Valley Flow Routes through Flood Area A (INSET 5)

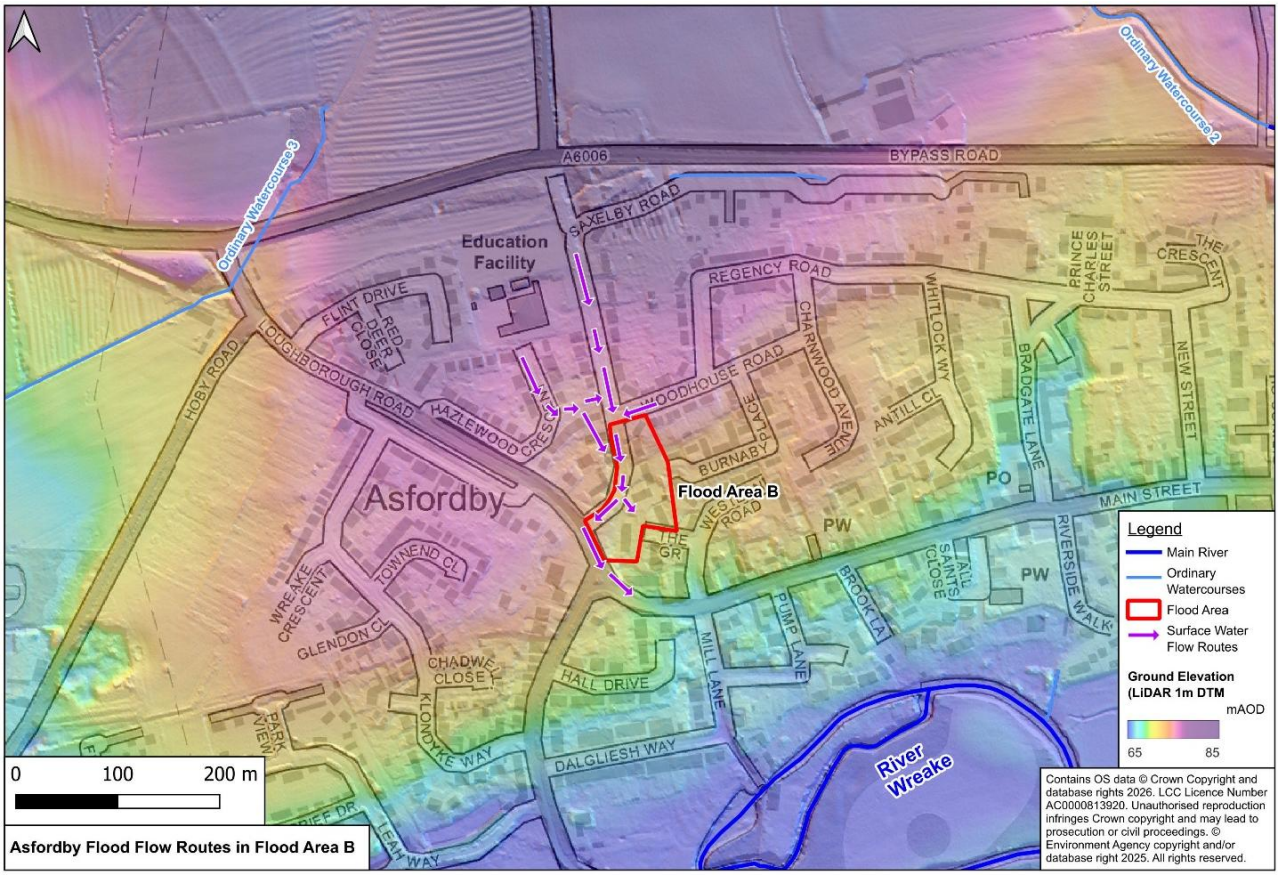
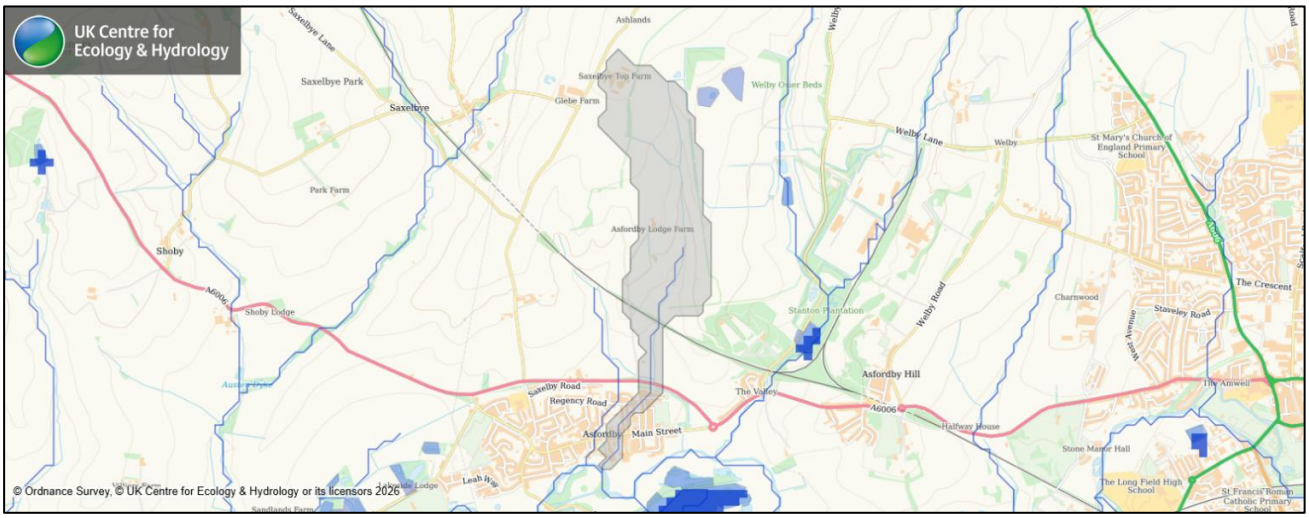


Figure 12-3: Asfordby Flow Routes through Flood Area B (INSET 5)

The UK Centre for Ecology & Hydrology's Flood Estimate Handbook (FEH) Web Service[1] provides strategic level catchment mapping for the tributary watercourses of the River Wreake in the vicinity of Flood Areas A and B, as illustrated in Figure 12-4.

1.



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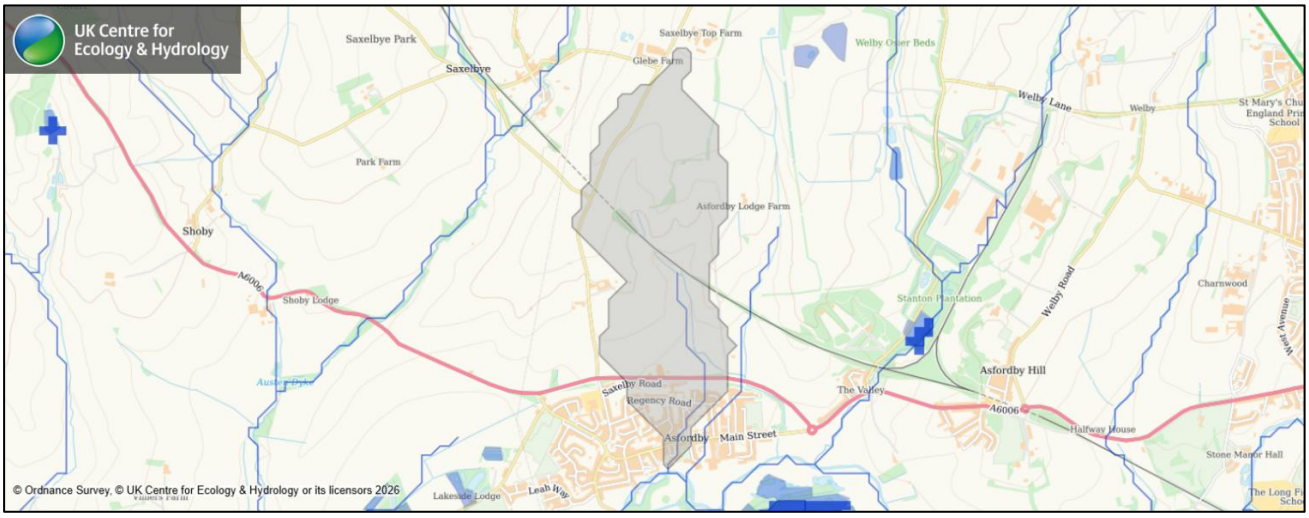

3.

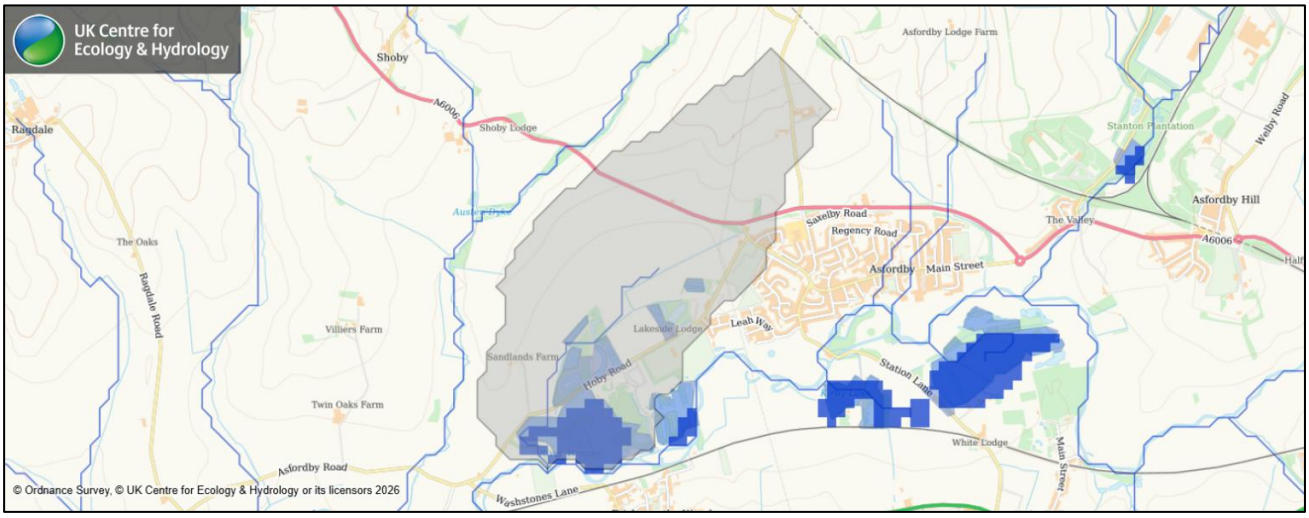

Figure 12-4: FEH Web Service Catchment Extents of Ordinary Watercourses 1 and 2 upstream of A6006 (1. and 2.), and Ordinary Watercourse 3 west of Asfordby (3.)

[1] Centre for Ecology & Hydrology (2026) FEH Web Service https://fehweb.ceh.ac.uk/Map

Flood Area A is located within the catchment area draining directly to Welby Brook (as illustrated in Figure 12-1), which is predominantly rural, but relatively steep**,** characteristic of flashy runoff. Its catchment area comprises 11.2km^2 at its confluence with the River Wreake.

The two un-named ordinary watercourses north east of Asfordby drain rural catchment areas southwards to the A6066 bypass road (as illustrated in Figure 12-4). That to the east, Ordinary Watercourse 1 drains a catchment of 0.89km^2 to the River Wreake, and that to the west, Ordinary Watercourse 2 drains a catchment of 1.2km^2 to the River Wreake. However, these are not open channels flowing through Asfordby as illustrated by the FEH Web Service.

Where these watercourses enter Asfordby, they were channelised eastwards alongside the A6006 Bypass and converge becoming the Asfordby Relief Channel which conveys flows beneath the Bypass within a culvert (Figure 12-2). Asfordby village has suffered from significant flooding in the past from overland flow generated in higher areas of land to the north, notably during Easter 1998. The Asfordby Relief Channel, constructed around the year 2000, has helped reduce the risk of flooding. This relief channel reappears as an open channel downstream of the Bypass and flows through the eastern edge of Asfordby. It passes beneath Main Street within a second culvert and continues southwards as an open channel discharging into the River Wreake approximately 235m downstream of Welby Brook/River Wreake confluence (Figure 12-2).

A third un-named open channel, Ordinary Watercourse 3, flows in a south-westerly direction alongside the western edge of Asfordby to its confluence with the River Wreake south of Holby Road.

Flood Area B (Figure 12-1) is located between the catchment extents of Ordinary Watercourse 2 (east of Saxelby Road) and Ordinary Watercourse 3 (west of Saxelby Road). It is therefore located in the smaller intervening catchment draining directly to the River Wreake (mainly south of the Bypass), and is predominantly ***urban***, characteristic of flashy runoff.

12.1.1 GEOLOGY

A review of geological information from the BGS online mapping system[2] identified that this area of Leicestershire is dominated by the Mudstone Bedrock lithology, characterised by superficial deposits of predominantly poorly sorted sands and gravels. These ground formations are associated with relatively poor permeability, low infiltration rates. Superficial deposits with higher infiltration potential may have higher potential for groundwater flooding.

[2] British Geological Survey (2026) BGS Geology Viewer. https://geologyviewer.bgs.ac.uk/

12.1.2 NATIONAL SCALE PREDICTIVE FLOOD MAPPING

The EA provides flood risk mapping nationally for both rivers and surface water as detailed within Section 2.7.6 of the main Storm Henk report. The extents of EA's Flood Map for Planning (NaFRA2) Flood Zones 2 and 3 (medium and high risk of river flooding respectively) associated with the watercourses identified above are illustrated in Figure 12-5.

Flood Area A north of Main Road is entirely located within Flood Zone 1 (low risk of river flooding) from Welby Brook. However, the central and south-western extent of Flood Area A is located within an area identified as being at medium to high risk of surface water flooding.

Flood Area B at Saxelby Road is located within Flood Zone 1 from the River Wreake (low risk) of river flooding and within an area identified as being partially at a low, medium and high risk of surface water flooding, and within as illustrated in Figure 12-5.

Areas of the village are also identified as being at a high, medium and low risks of flooding in the national EA's Risk of Flooding from Surface Water (RoFSW) (NaFRA2) map, as illustrated in Figure 12-5. The risks however can be exacerbated above what is illustrated in the RoFSW extents by localised ground elevation/landscaping detail or drainage infrastructure limitations. But, the risk can also be underestimated if underground drainage and flood mitigation measures (such as the Asfordby Relief Channel culvert) were not necessarily represented in detail in the modelling methodology.

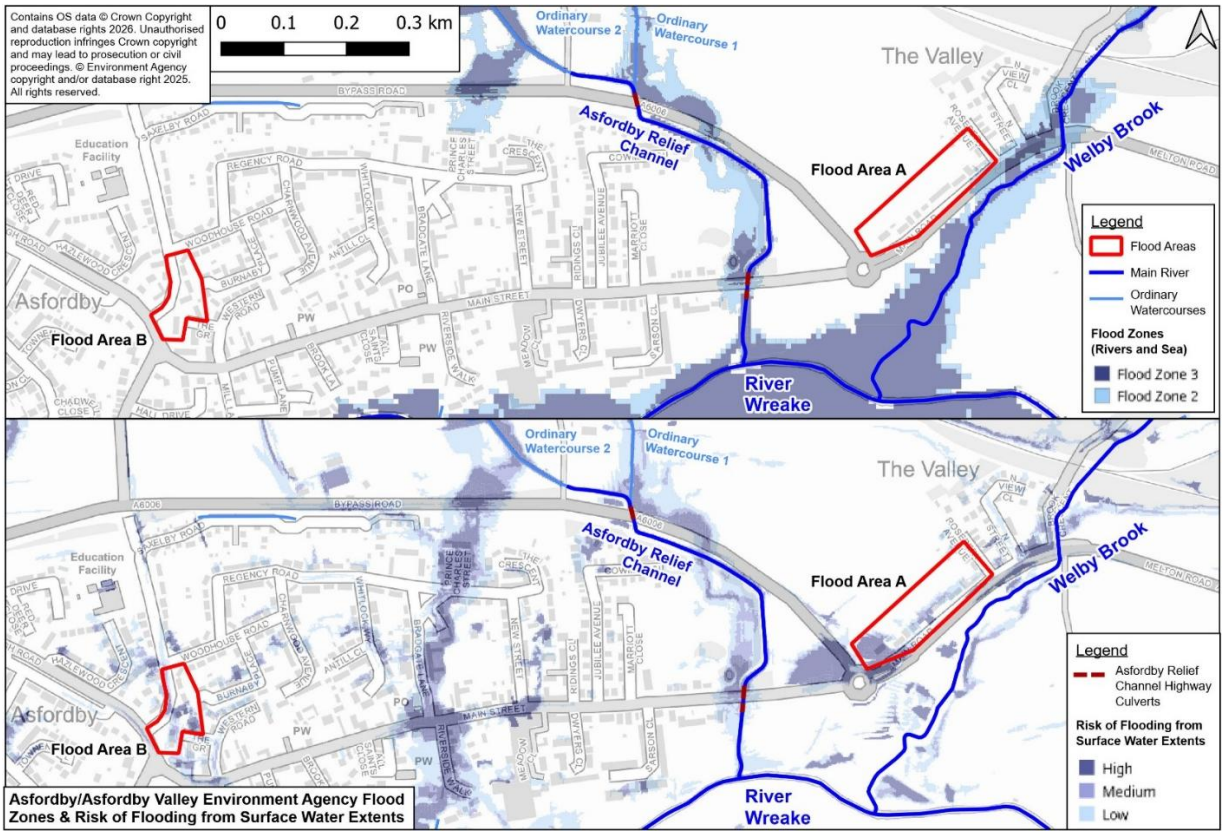

Figure 12-5: Asfordby and Asfordby Valley EA Flood Map for Planning Flood Zones[3] and Risk of Flooding from Surface Water Extents[4] in Flood Areas (INSET 5)

[3] Environment Agency (2026) Flood Map for Planning – Flood Zones https://flood-map-for-planning.service.gov.uk/map
[4] Environment Agency (2026) Risk of Flooding from Surface Water map. https://check-long-term-flood-risk.service.gov.uk/map

12.1.3 FLOOD WARNINGS

The River Wreake at Asfordby (Code: 034FWFWRASFRDBY) EA Flood Warning Area exists for Asfordby. However, this warning area is associated directly with the River Wreake and not relevant to Flood Areas A or B, only the river corridor to the south. The EA confirmed that a Flood Warning was issued for this area for Storm Henk, but there are no Flood Warning Areas covering Flood Areas A or B specifically as they are not within the modelled flood extents of Welby Brook or the River Wreake.

12.2 WHAT HAPPENED AND WHY?

WHO OR WHAT WAS AFFECTED?

2 properties reported as internally flooded

At least 3 properties reported as externally flooded

During the high-intensity rainfall event on 2nd January 2024, the land drainage quickly became overwhelmed. Pre-existing soil saturation within agricultural land rapidly reduced infiltration capacity, resulting in accelerated surface runoff towards the River Wreake. The flooding which occurred in Flood Areas A and B closely matches the predicted outlines of the EA's RoFSW mapping, as shown in Figure 12-5.

12.2.1 FLOOD AREA A (ASFORDBY VALLEY)

The two affected properties along the A6006, the Valley reported surface water flowing over the fields in a southerly directly towards the rear of their properties and then onto the A6006. It is therefore understood that the primary source of flooding here was not from Welby Brook Main River, but was a result of intense rainfall generating a large volume of overland flow of surface water runoff within fields to the north of the A6006 that followed the local ground levels downhill towards the brook (Figure 12-1). It was reported that floodwater entered one property from the rear via air bricks causing internal flooding. The second property reported that they experienced external property flooding to the rear.

12.2.2 FLOOD AREA B (ASFORDBY)

Internal flooding was reported at one property and external flooding at two properties on Saxelby Road during the Storm Henk event.

As part of the investigation, a report was received of blocked highway drainage on Saxelby Road. A review of the drainage in this area has identified a 225mm diameter (dia) STW public surface water sewer and a 150mm dia STW public surface water sewer draining Saxelby Road in Flood Area B. These surface water sewers join and proceed southwards beneath Main Street and Mill Lane before out-falling into the River Wreake at OSNGR SK 70575 18757. A small number of highway gullies are present along Saxelby Road, south of the A6006 Bypass Road, including two at the junction of Saxelby Road with Woodhouse Road which connect in the STW public surface water sewer.

A site visit by Leicestershire County Council (LCC) Local Highways Authority (LHA) was undertaken after Storm Henk to verify the presence or source of any blockages. A highway gully was confirmed to be blocked and required cleansing at the southern extent of Saxelby Road. However, anecdotal reports were received that residents had already unblocked this gully during the event which reportedly managed to limit the impact from the flood event.

Typically, road drainage networks are designed to accommodate limited rainfall events on the contributing area of highway itself, but not for any additional volumes of overland flow originating from land adjacent to the highways as occurred in Flood Area B (or overtopping onto them from any watercourses). When gullies are reportedly blocked, this can appear that this was the initial cause of the flooding. However, this is generally not the case. As floodwater recedes into the drainage systems it can naturally draw in flood debris and sludge into them, particularly around gully grates. LCC is not aware of a blockage before the event. It is likely therefore that the gully became blocked during the flood event.

It is therefore concluded that the intense rainfall event generated a large volume of overland flow of surface water on the highway that followed the local ground levels downhill southwards along the easiest route of the highway (as illustrated in Figure 12-1). It then ponded at the bottom of the hill where the limited highway drainage was overwhelmed, a gully became blocked, and was unable to drain the water away sufficiently. Ponded floodwater then accumulated and exceeded the threshold of one adjacent property, located at a low point, via their driveway flooding it internally. Two additional properties also flooded externally as a result of water flowing down Saxelby Road. The location of these coincides with the area at high risk along Saxelby Road identified in the RoFSW map (Figure 12-5).

Ground elevations near the STW surface water sewer outfall into the River Wreake are at least 7m lower than at Saxelby Road, so high water levels in the Wreake at the time would not have likely caused water to back up in the drainage network as far as Saxelby Road.

Anecdotal reports indicated that surface water flowed off the fields and a development site adjacent Saxelby Road north of the A6006 Bypass and travelled down Saxelby Road; however, no evidence was collated to substantiate these accounts as part of this investigation.

12.3 WHAT HAS BEEN DONE?

A summary table of the actions undertaken by the relevant RMAs across Leicestershire is provided in Section 2.7 of the main Storm Henk report. A summary table of actions and any relevant next steps specific to Asfordby and Asfordby Valley is provided in Section 12.4. The relevant RMAs that are involved in this area will continue to monitor and resolve any outstanding works.

Whilst the actions from this investigation will help to reduce flood risk, communities should also take steps to be prepared for future flooding, especially with climate change increasing the risk of occurrence. More information can be found in Section 21.8 of the main Storm Henk report.

12.4 ASFORDBY & ASFORDBY VALLEY ACTIONS

The following actions will be monitored by LCC, as Lead Local Flood Authority (LLFA), through their local coordination role. This action plan is live and will be subject to change as actions are progressed.

Actions taken during and in the immediate aftermaths of the event, such as the closure of roads and set-up of rest centres are not detailed. Further details on RMAs and their roles, and how they work in partnership, can be found in the Leicestershire Local Flood Risk Management Strategy[5].

[5] Leicestershire County Council (2024) Leicestershire Local Flood Risk Management Strategy - https://www.leicestershire.gov.uk/environment-and-planning/flooding-and-drainage/lead-local-flood-authority/flood-risk-management

12.4.1 SHORT-TERM ACTIONS (0 - 6 MONTHS)

<table>
<tr><th>ACTION</th><th>ACTION DETAIL</th><th>LEAD RMA</th><th>CURRENT STATUS</th></tr>
<tr><td>Additional Gully Cleanse</td><td>Following Storm Henk, an additional cleanse was arranged for the affected locations in Leicestershire. The data collected from this process was used to help reprioritise gully cleansing in flood affected areas; as a result, frequency of cleansing increased for 5240 gullies across the County.

Priority changes implemented to the gullies in Asfordby:

<table>
<tr><th>Street Name</th><th>Old Priority</th><th>New Priority</th></tr>
<tr><td>North Street</td><td>P3</td><td>P2</td></tr>
<tr><td>Main Road Service Road</td><td>P3</td><td>P2</td></tr>
<tr><td>Roseberry Avenue</td><td>P3</td><td>P2</td></tr>
<tr><td>South View</td><td>P3</td><td>P2</td></tr>
<tr><td>Klondyke Way</td><td>P3</td><td>P2</td></tr>
<tr><td>Regency Road</td><td>P3</td><td>P2</td></tr>
<tr><td>Dalgliesh Way</td><td>P3</td><td>P2</td></tr>
<tr><td>Station Lane</td><td>P1</td><td>P1</td></tr>
<tr><td>Prince Charles Street</td><td>P2</td><td>P1</td></tr>
</table>
Priority (P) 1 – Cleansed every 10 months, P2 – Cleansed every 20 months</td><td>LCC LHA</td><td>Complete</td></tr>
<tr><td>Riparian Responsibilities Campaign</td><td>Distribute informational leaflets to raise community awareness of riparian responsibilities and associated activities, with the aim of strengthening local flood resilience.</td><td>LCC LLFA</td><td>Completed</td></tr>
</table>

ACTION	ACTION DETAIL	LEAD RMA	CURRENT STATUS
Henk Property Flood Resilience Repair Grants	No applications were received from affected residents in Asfordby or Asfordby Valley. Awareness of the grant was raised at flood drop ins, online and on site visits etc.	LCC LLFA	Complete
Community Drop-in Sessions	A number of public flood drop-in sessions were arranged and attended by all Risk Management Authorities including EA, Melton Borough Council (MBC), LCC LHA, LCC LLFA and the LCC Local Resilience Forum (LRF). Following Storm Henk, five drop in events were arranged in Loughborough, Blaby, Melton and Syston.	LCC LLFA	Complete
Site Walkovers to Inform Investigation	MBC engaged with affected residents in both Asfordby and Asfordby Valley following the flood event, providing advice on the available grants and identifying any additional support that could be offered.	MBC	Complete
Surface Water Drainage Review	Review development north of A6006 and liaise with the MBC Local Planning Authority (LPA) to ensure it was built in accordance with the relevant policies. What was approved at planning and everything was in accordance with the relevant policies. Therefore, any evidence that can be provided indicating the development has been built different to the approved plans would need to be raised to the MBC LPA.	LCC LLFA MBC	Complete

12.4.2 MEDIUM-TERM ACTIONS (6 - 12 MONTHS)

ACTION	ACTION DETAIL	LEAD RMA	CURRENT STATUS
Welby Brook Inspection and Maintenance	There are two flood defence embankments located alongside the A6006 Bypass Road and through the Play Area. Maintenance is listed below; – Grass cut carried out 3-4 times per year – Monthly vermin inspection and treatment, where necessary – Annual asset inspection to ensure flood defence assets are still at the designed standard of protection Review the condition of this section of the brook and undertake maintenance where appropriate.	EA	Completed

12.4.3 LONG-TERM ACTIONS (12 MONTHS +)

ACTION	ACTION DETAIL	LEAD RMA	CURRENT STATUS
Review of the Flood Warning Service for Asfordby	Review the Flood Warning for 'River Wreake at Asfordby'.	EA	Completed