Flood Investigation Report

Storm Henk

2nd January 2024

Twyford

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19 TWYFORD

Twyford is a small village within Melton District, located approximately 9 km to the south of Melton Mowbray, and 10 km north east of Leicester.

The number of internal flooded properties reported during Storm Henk did not trigger a formal investigation for Twyford. For more information see the main Storm Henk report.

19.1 LOCAL DRAINAGE CONTEXT

Gaddesby Brook (an EA designated Main River) flows in a general north-westerly direction alongside the northern edge of the village draining a rural/agricultural catchment area of 28km^2 at the Main Street bridge. 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.

Two unnamed ordinary watercourses also flow north-eastwards through the centre of the village from agricultural land to the south. One flows from the south, north-eastwards through the village converging with Gaddesby Brook north of Church View (Ordinary Watercourse 1). The second issues at Elms View Farm (Ordinary Watercourse 2) and flows north-eastwards north of the B6047, converging with Gaddesby Brook to the west of Tilton Road.

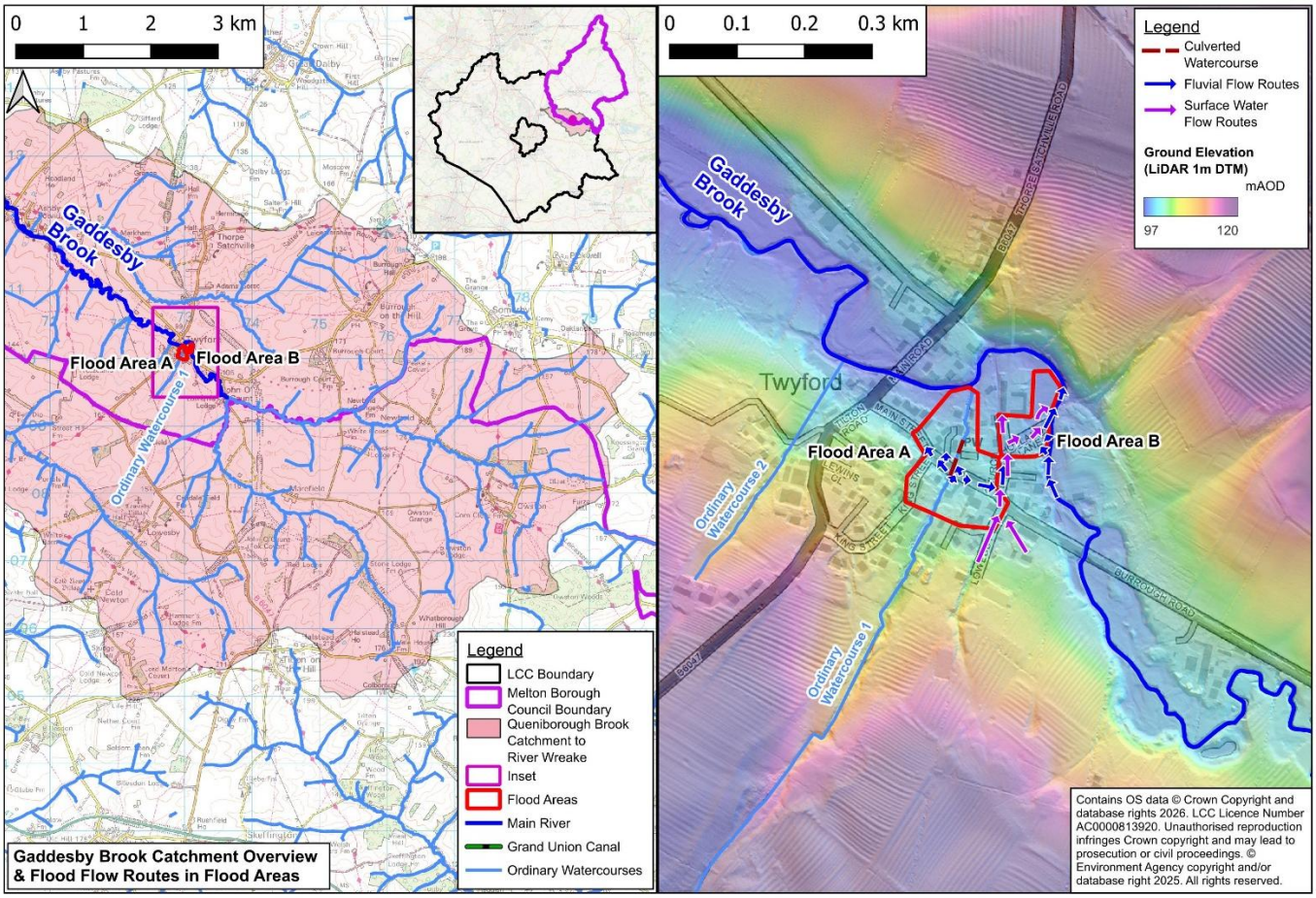

Figure 19-1: Twyford Location Plan, relevant Watercourse Catchment and Flow Routes through Flood Area (INSET 8)

The UK Centre for Ecology & Hydrology's Flood Estimate Handbook (FEH) Web Service[1] provides strategic level catchment mapping. Figure 19-3 defines the catchment for Ordinary Watercourse 1, a tributary of Gadddesby Brook, between King Street and Lowesby Lane. This identifies that the far downstream reach, north of Main Street, progresses down Church Lane and converges with Gaddesby Brook at the end of Hollows Lane.

However, site inspection and review of OS mapping and Severn Trent Water (STW) sewer records identified that the route of open channel ordinary watercourse actually progresses northwards beneath Main Street within a culverted watercourse (150mm diameter (dia) pipe) between Church View and St. Andrew's Church. This then outfalls into an open channel that converges with Gaddesby Brook at approximate Ordnance Survey National Grid Reference (OSNGR) SK 72992 10196, further downstream than is illustrated by the FEH Web Service. The responsible agency for this culverted watercourse is currently under investigation by Leicestershire County Council (LCC) Lead Local Flood Authority (LLFA) and STW.

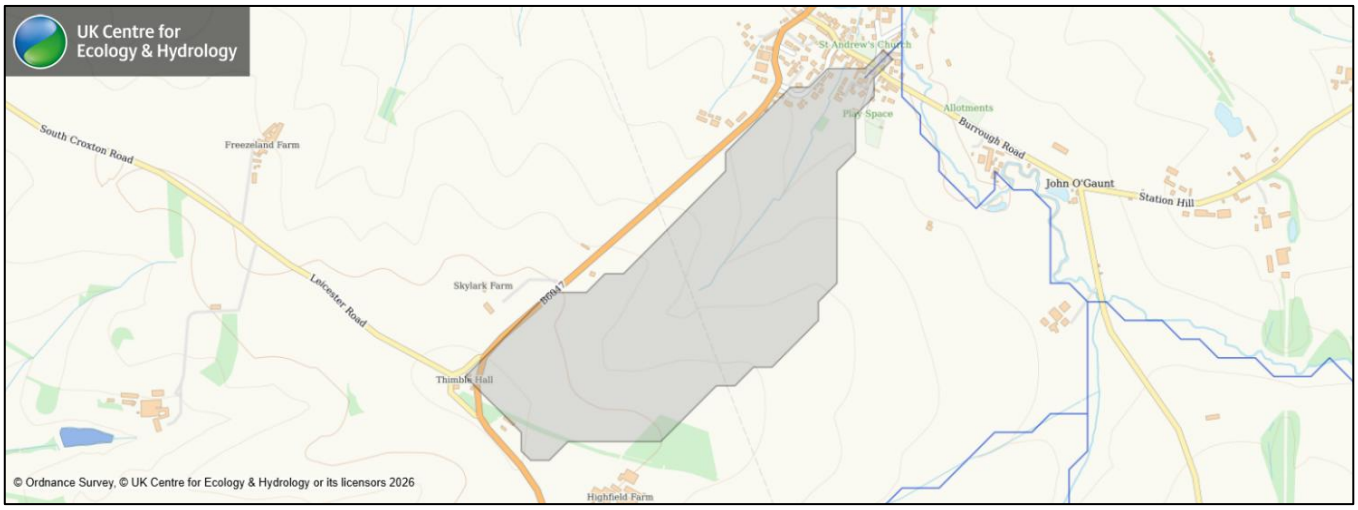

Figure 19-2: FEH Web Service Catchment of Ordinary Watercourse 1 Tributary of Gaddesby Brook at Twyford

A 150mm dia public STW surface water sewer also runs northwards beneath the northern extent of King Street. This redirects east-wards along Main Street before redirecting again northwards between Church View and St. Andrew's Church alongside the culverted watercourse, and then outfalls in Gaddesby Brook.

The FEH Web Service dataset however does not differentiate a discrete catchment of Ordinary Watercourse 2 to the north-west (issuing at Elms View Farm and proceeding north-eastwards) from the larger Gaddesby Brook lateral intervening catchment. A culverted watercourse is also present within the B6047 highway which starts beneath Thimble Hall Road near Elms View Farm, continues beneath Tilton Road and Main Road and is believed to outfall shortly downstream of the Main Road bridge (size unknown). A Section 104 150mm dia sewer also conveys runoff collected from the Lewins Close development beneath Tilton Road and Main Road to Gaddesby Brook at the same location as the culvert described above. Elsewhere a larger network of 150-225mm dia public STW combined sewers drain some of

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

the remaining village highways towards a pumping station upstream of Main Road.

19.1.1 GEOLOGY

The BGS's online mapping system[2] identifies that this area of Leicestershire is dominated by a mudstone lithology, characterised by superficial fluvial deposits of predominantly sands and gravels, and a bedrock of Charmouth Mudstone. These ground formations are associated with relatively low general permeability, low infiltration rates, with a potential for a high water table in proximity to Gaddesby Brook with a geology susceptible to groundwater flooding.

19.1.2 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 the EA's Flood Map for Planning (NaFRA2) Zones 2 and 3 associated with Gaddesby Brook through the village (medium and high risk of river flooding respectively) are illustrated in Figure 19-3. The northern extent of Flood Area A in open land and the northern extent of Flood Area B along Church Lane and Hollands Lane are most at risk from Gaddesby Brook.

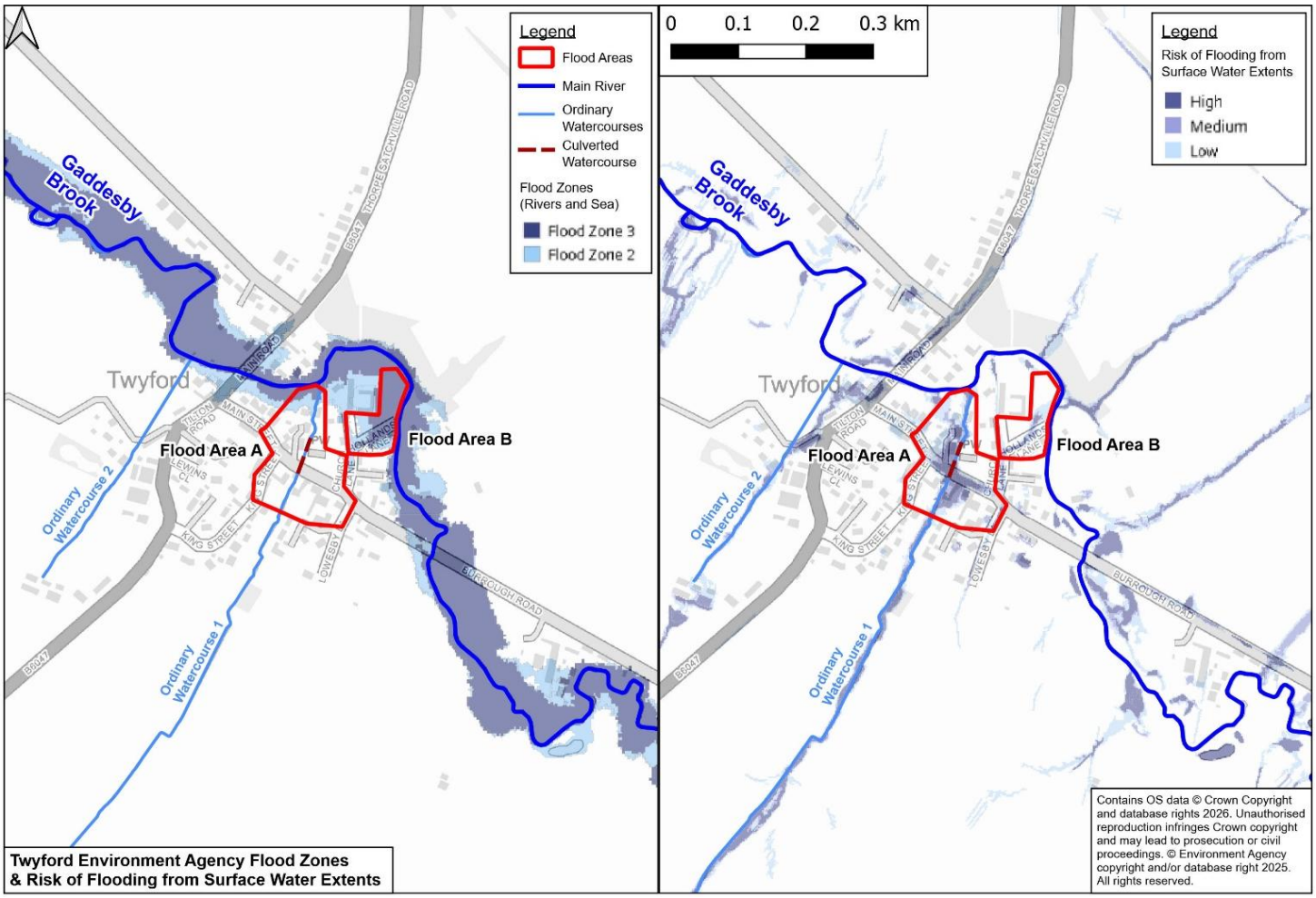

Figure 19-3: Twyford EA Flood Map for Planning Flood Zones[3] and Risk of Flooding from Surface Water Extents[4] in Flood Areas (INSET 8)

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

Areas of the village are also identified as being at a high, medium and low risks of flooding in the national EA Risk of Flooding from Surface Water (RoFSW) (NaFRA2) are illustrated in Figure 19-3. The key surface water flow route through the village of interest for this summary report pass northwards through the centre of the village along the route of Ordinary Watercourse 1 and down Church Lane and Hollands Lane. Smaller routes follow Lowesby Lane northwards towards Church Lane and northwards along Ordinary Watercourse 2 that issues at Elms View Farm.

19.1.3 FLOOD HISTORY

Prior to this flood event, Leicestershire County Council was in receipt of a minimal number of enquires relating to flooding and local drainage issues. These were largely limited to routine maintenance related enquiries relating to the local piped drainage networks maintained by the Local Highway Authority (LHA) and STW. Enquires regularly indicated that high water levels in the Gaddesby Brook impeded the performance of the piped networks resulting in capacity exceedance as their outfalls were submerged.

19.1.4 HYDROMETRY

The EA currently monitor river levels at Gaddesby Brook level station at Marefield gauge[5] located shortly downstream of Marefield Lane approximately 3km upstream of Twyford. River levels here peaked at 17:15 hours on 2nd January 2024.

19.1.5 FLOOD WARNINGS

There are no EA Flood Warning Areas along Gaddesby Brook or covering the Twyford Flood Areas. Twyford however is covered by an EA Flood Alert which is associated with the fluvial flood risk along the River Wreake and tributaries from Langham to the River Soar at Syston[6]. This Flood Alert covers a large area and is for low lying land and roads, not property flooding.

[5] Environment Agency (2026) Gaddeby Brook at Marefield – river level gauge. https://environment.data.gov.uk/hydrology/station/64809f2f-343b-4667-b323-c9f393afb542

[6] Environment Agency (2026) River Wreake in Leicestershire Flood Alert Area - River Wreake and tributaries from Langham to the River Soar at Syston. https://check-for-flooding.service.gov.uk/target-area/034WAF404

19.2 WHAT HAPPENED AND WHY?

WHO OR WHAT WAS AFFECTED?

1 property reported as internally flooded

0 properties reported as externally flooded

Given the significant intensity and the resultant volume of rainfall that fell, and the catchment conditions prior to the event (see Sections 2.3 and 2.4 respectively of the main Storm Henk report), this caused the water level within Gaddesby Brook to rise sharply within the village. Residents reported a significant amount of large woody debris collected upstream of the road bridge at Main Road, likely mobilised by floodwater from the upstream, predominantly agricultural, catchment. No properties were reported as having been internally flooded directly from the Gaddesby Brook.

19.2.1 FLOOD AREA A

A large volume of overland surface water runoff also flowed northwards through Flood Area A, primarily along Ordinary Watercourse 1 (illustrated in Figure 19-1). This watercourse exceeded the bank capacity on the southern side of Main Street where the watercourse is conveyed into a culvert inlet, and caused flooding to a single property along Main Street situated adjacent to the watercourse. As described in Section 19.1, this proceeds beneath Main Street to its outfall north of the church and continues towards Gaddesby Brook (see Figure 19-1). High water levels in Gaddesby Brook likely restricted the ability of this watercourse to discharge at the confluence. The capacity of the watercourse would have been exceeded, causing the culvert inlet to surcharge onto Main Street. Flooding was reported to have occurred from midday.

19.2.2 FLOOD AREA B

Areas of Church Lane and Hollands Lane (Flood Area B as illustrated in Figure 19-1) reportedly became impassible after being inundated by ponded floodwater. It is likely this was generated from intense rainfall that resulted in surface water runoff from higher ground to the south of Lowesby Lane proceeding northwards, in combination with the floodwater on Main Street from Ordinary Watercourse 1.

Three properties along Hollands Lane adjacent to Gaddesby Brook requested sandbags, but fortunately, they did not flood internally.

Highway gullies along Church Lane were anecdotally reported as being overwhelmed, and ponded water reportedly damaged parked vehicles. No reports of any highway gully blockages were received, however, Church Lane gullies are known to connect to a 150 dia STW public surface water sewer which outfalls to Gaddesby Brook shortly upstream of the Ordinary Watercourse 1 confluence.

High river levels in Gaddesby Brook would therefore have also likely submerged the outfalls of this STW public surface water sewer and restricted its ability to discharge into the brook. The gullies connecting into these would have then likely surcharged as the sewer conveyance capacity became exceeded.

Typically, road drainage networks are designed to accommodate limited rainfall events on the contributing area of highway itself. But they are not designed to accommodate any additional volumes of overland flow originating from land adjacent to the highways or overtopping onto them from watercourses, as both occurred here.

Following Storm Henk, the local community raised concerns that development in Twyford contributed towards the flooding. However, no evidence has been provided or found as part of this investigation to verify this. New development is required to comply with the National Planning Policy Framework (NPPF) (and previously, the Planning Policy Statement 25) and associated guidance. By complying with these requirements, new development is designed to mitigate the impact downstream by restricting flows on-site through provision of on-site storage for surface water. Additionally, development design also accounts for climate change in line with EA guidance, which would further protect the downstream catchment in the future. LCC, as the LLFA, has been responsible for reviewing all major planning applications since 2015 (prior to this, the EA was responsible), to ensure that the correct level of mitigation provided.

19.3 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 Twyford is provided in Section 19.4.

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 about personal and community preparedness can be found in Section 21.8 of the main Storm Henk report.

On 6th January 2025, another major countywide flood event occurred which resulted in widespread internal property flooding to Twyford. This 2025 flood event is being investigated separately. This report will therefore focus on the actions agreed and undertaken in relation to this 2024 event only. Any actions, investigations or engagement undertaken following the 6th January 2025 event will be covered in that report.

19.4 TWYFORD ACTIONS

The following actions will be monitored by LCC 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[7].

19.4.1 SHORT-TERM ACTIONS (0 - 6 MONTHS)

ACTION	ACTION DETAIL	LEAD RMA or ORGANISATION	CURRENT STATUS
Site Walkovers to Inform Investigation	Officers from MBC, EA and LCC LLFA completed a number of site visits within the village following flood event to review key locations affected within the community.	All RMAs	Complete
Assessment of Local Development	Review the impact of development within the catchment to address local community concerns.	MBC	Ongoing
Community Resilience	Local Resilience Forum (LRF) to work with the community to review community emergency procedures and any further actions that can be taken to improve resilience to flooding.	LRF	Complete
Highways Asset Maintenance	An additional gully cleanse was provided in affected areas due to additional debris being washed into the highway gullies during the flood event.	LCC LHA	Complete

[7] 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

19.4.2 MEDIUM-TERM ACTIONS (6 - 12 MONTHS)

ACTION	ACTION DETAIL	LEAD RMA	CURRENT STATUS
Henk Flood Recovery Framework support	MBC (Melton Borough Council) administered £500 residential grants, £2,500 business grants, council tax exemptions and business rates relief.	MBC	Complete
Community Drop-in sessions	A number of public flood drop-in sessions were arranged and attended by all Risk Management Authorities including EA, CBC, LCC LHA, LCC LLFA and the LRF. The aim of these sessions was to better understand what happened after the flood events but also to promote flood resilience for future events.	All RMAs	Complete Following Storm Henk five drop in events were arranged in Loughborough, Blaby, Melton and Syston.

19.4.3 LONG-TERM ACTIONS (12 MONTHS +)

ACTION	ACTION DETAIL	LEAD RMA	CURRENT STATUS
Henk Property Flood Resilience Repair Grants	LCC LLFA administered the National Flood Grant for Property Flood Resilience on behalf of DEFRA following Storm Henk. No properties accessed the grant.	LCC LLFA	Complete
Flood Warning System	A new Flood Warning for Gaddesby Brook is planned to be introduced in 2026.	EA	Ongoing
Establish Ownership of Ordinary Watercourse Culvert	Site visit to be held with LCC LHA and STW to identify inlet/outfall/manholes and any connections with STW public surface water sewer network.	LCC LLFA, LCC LHA, STW	Ongoing – site visit arranged for April/May 2026