

Flooding in Cranberry, Staffordshire

January 2024

Investigation under Section 19
of the Flood and Water Management Act 2010

This report has been prepared by Staffordshire County Council as Lead Local Flood Authority for Staffordshire County, under Section 19 of the Flood and Water Management Act 2010, with the assistance of the Highway Authority.

This report is based on the information available at the time of preparation. Consequently, there is potential for further information to become available, which may lead to future alterations to the conclusions drawn in this report for which Staffordshire County Council cannot be held responsible.

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1 Executive Summary

This Section 19 Flood Investigation Report has been prepared in response to the flood event that occurred in Cranberry, Staffordshire, during Storm Henk on 2nd January 2024, also considering the history of flooding in the area. The purpose of this report is to investigate the causes, impacts, and responses to this flood event and to provide recommendations to mitigate future flood risks.

The flooding at Cranberry in January 2024 occurred as a result of rapid surface water runoff from agricultural land to the east of the village. Storm Henk formed the eighth named storm of the 2023-2024 storm season with several storms occurring in close succession. Whilst the estimated rainfall runoff return period for the storm was less than a 2-year rainfall event, records indicate it was a wetter-than-average winter. By the time Storm Henk arrived, the catchment was saturated and drainage ditch networks were at elevated base-flow levels.

The primary cause of the flooding was an exceedance event which followed a prolonged period of wet weather throughout the Autumn/Winter of 2023/2024. The volume of surface water runoff from the agricultural land to the east of the village overwhelmed the drainage ditch at the top of the village and exceeded the capacity of the 150mm diameter inlet pipe which connects into the local drainage network. Water spilled out onto the highway and towards property. One property reported internal flooding with several other residents reporting flooding to driveways, gardens and the highway.

The Risk Management Authorities (RMAs) with relevant flood risk management functions are:

- **The Highway Authority** (Staffordshire County Council) – responsible for the highway gullies and drains within the highway.
- **Lead Local Flood Authority** (Staffordshire County Council) responsible for investigation and reporting of flooding, supervision of ordinary watercourses.

Each RMA was notified of the flooding and asked to investigate and report on the status of assets under their responsibility, and whether they have taken or are proposing to undertake actions to mitigate the risk of future flooding.

Some actions have been completed, and further actions are in progress or recommended for the future. These are summarised at the end of the report.

2 Legislative Context

Under Section 19 of the Flood and Water Management Act 2010, Lead Local Flood Authorities (LLFAs) are required to investigate flood incidents in their area (Figure 1). This investigation aims to determine the causes of the flooding, the responsible authorities, and the actions taken to manage the risk and impact of the flooding.

Flood and Water Management Act 2010

19	Local authorities: investigations
(1)	On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate— <ol style="list-style-type: none">which risk management authorities have relevant flood risk management functions, andwhether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.
(2)	Where an authority carries out an investigation under subsection (1) it must— <ol style="list-style-type: none">publish the results of its investigation, andnotify any relevant risk management authorities.

Figure 1: Flood and Water Management Act 2010 - Section 19

2.1 Staffordshire County Council Flood Investigation Policy

Staffordshire County Council will undertake/coordinate a Flood Investigation in accordance with Section 19 of the Flood and Water Management Act (2010) when one or more of the following thresholds are exceeded:

- Five or more residential properties are reported to have been internally flooded during a single flood event in one location; or
- Two or more business properties are reported to have been internally flooded during a single flood event in one location; or
- One or more items of critical infrastructure are reported to have been adversely affected during a single flood event in one location; or
- One or more residential properties in the same location are reported to have been internally flooded more than once during a 5-year period.

SCC may investigate flooding outside these categories, but only when all outstanding issues with a higher priority have been considered. These guidelines set numerical thresholds, however, in recognition of the fact that all floods will be different; a certain amount of discretion will be required in order to implement this policy effectively.

This report describes the flooding that occurred in Cranberry during Storm Henk on the 2nd January 2024, providing an overview of the flood event, data and analysis, risk management authorities with relevant functions, and the actions taken or proposed.

This data is the best currently available and is being verified and quality checked for accuracy.

It should be noted that this investigation does not oblige the LLFA or other risk management authorities to resolve the flooding issues investigated herein, nor is it possible for the LLFA to enforce others to undertake any of the recommended actions.

3 Incident Overview

3.1 Location Description

Cranberry is a small village and Civil Parish in Staffordshire. The village lies to the west of the A519 Newcastle to Newport Road, approximately four miles north of Eccleshall in the Borough of Stafford (Figure 2).

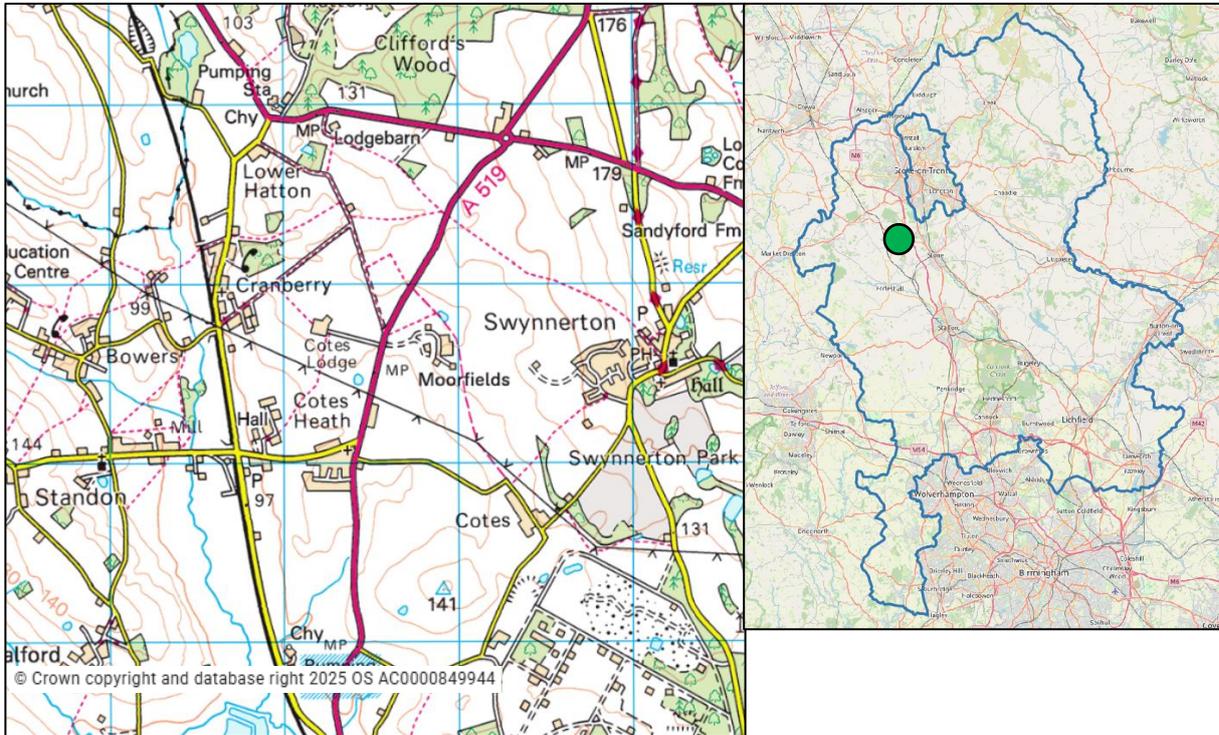


Figure 2: Location of Cranberry within Staffordshire

3.2 Event Background – Storm Henk

Storm Henk formed the eighth named storm of the 2023-2024 storm season, bringing damaging winds and heavy rain to Scotland and central and southern parts of England and Wales. In the weeks preceding the flood event, the MET Office issued several national Yellow and Amber warnings, in addition to Yellow Rain warnings. A prolonged spell of wet weather led to average daily totals of 10mm of rainfall across the UK for more than 5 days between the 26th December 2023 to 4th January 2024.

On the morning of 2nd January 2024, the MET Office named an area of low pressure crossing southern UK as Storm Henk¹. Warnings issued on 2nd January 2024 (Figure 3) listed the West Midlands Authorities and neighbouring authorities as potential areas that may be affected.

By the time Storm Henk arrived, several locations across the UK experienced significant flooding problems in areas that had already been impacted by the wet weather during Autumn 2023

¹ Storm Henk, 2nd January 2024. Met Office: [Microsoft Word - 2024_01_storm_henk_v1.docx \(metoffice.gov.uk\)](#)

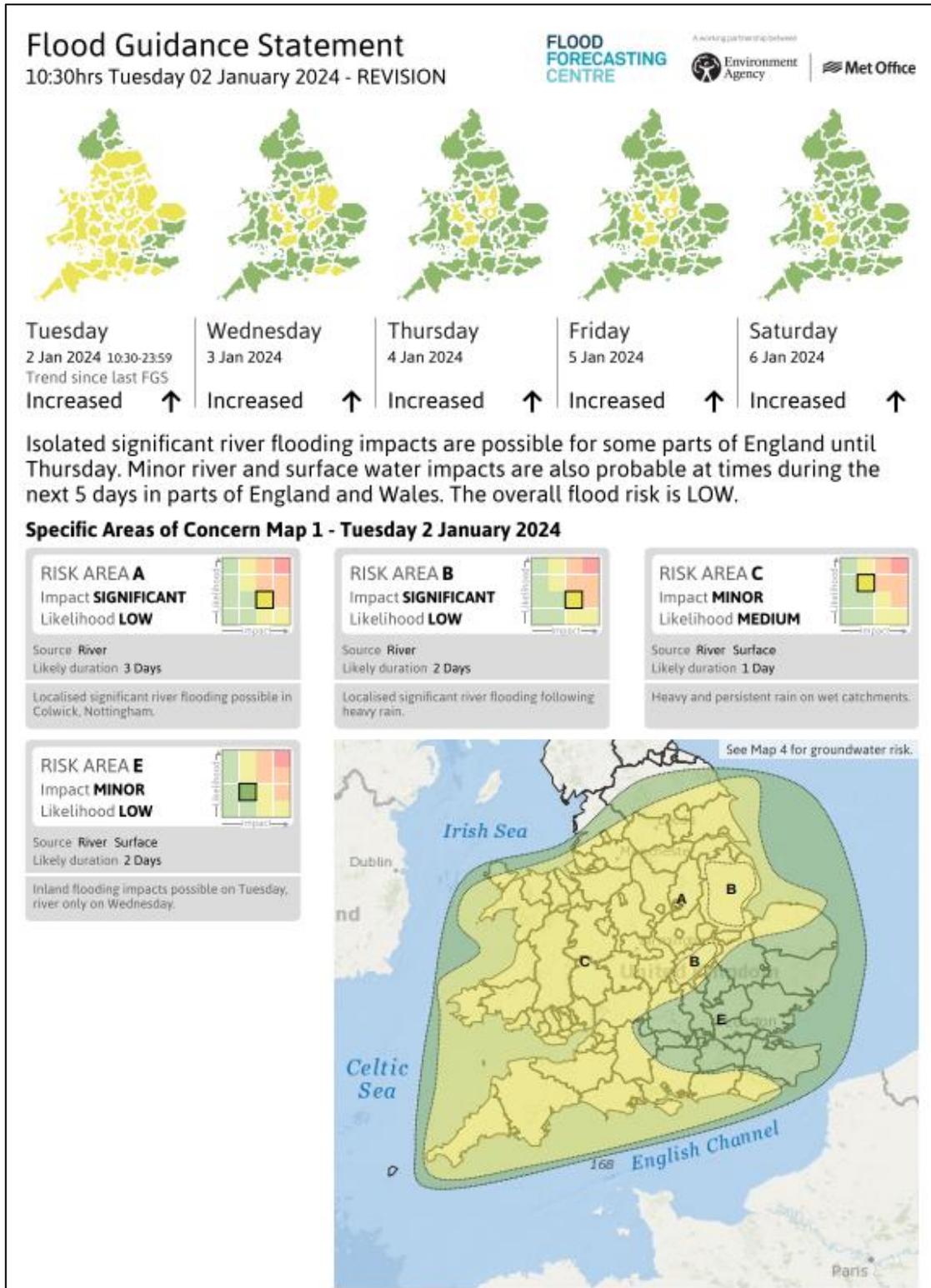


Figure 3: Extract from MET Office Flood Guidance Statement 2nd January 2024

Figure 4 presents the Met Office rainfall-radar image at 12:00UTC on 2nd January 2024. This shows heavy rain across central England from weather fronts associated with storm Henk.

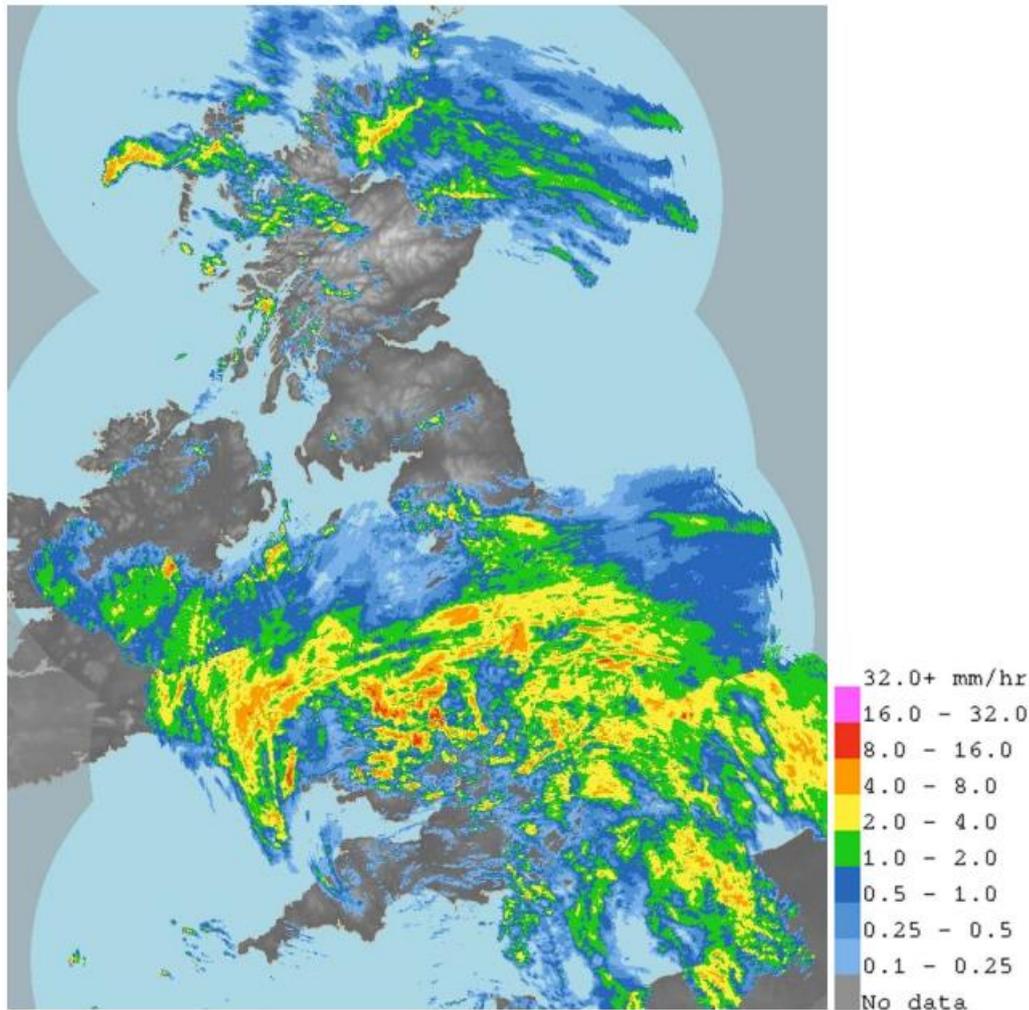


Figure 4: Rain-radar images at 12:00UTC on 2nd January 2024 showing the heavy rain associated with Storm Henk across central and southern England and Wales (Source: MET Office)

Figure 5 overleaf shows the accumulated rainfall total for the first two days of January. Within the first two days of the month, 30mm of rainfall fell widely across much of the Midlands. In the first four days of January (Figure 6), most of England and Wales and parts of eastern Scotland had received 30-50mm of rainfall. By the 5th of January, many parts of central England had received two-thirds or more of the whole-month average rainfall. The January rainfall total for England was 85mm which represents 106% of the 1961 to 1990 LTA for the time of year². Whilst this was a reduction in comparison to previous months, this was still above average for many locations within the UK. In addition, soil moisture deficits across the midlands remained at or close to zero meaning there was generally little to no capacity within soils to drain or infiltrate rainfall.

² Environment Agency – Monthly Water Situation Report: England – Summary January 2024 ([Water situation report England January 2024 \(publishing.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/118444/water-situation-report-england-january-2024.pdf))

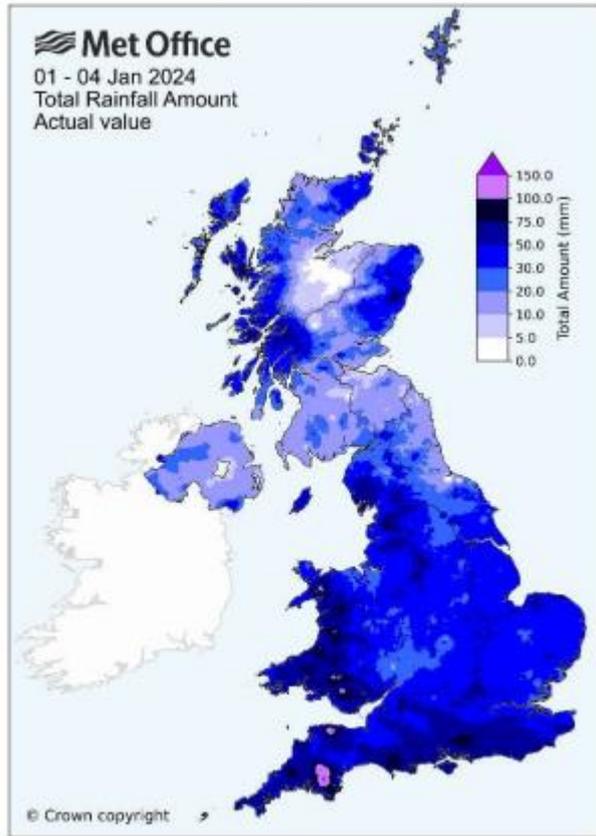
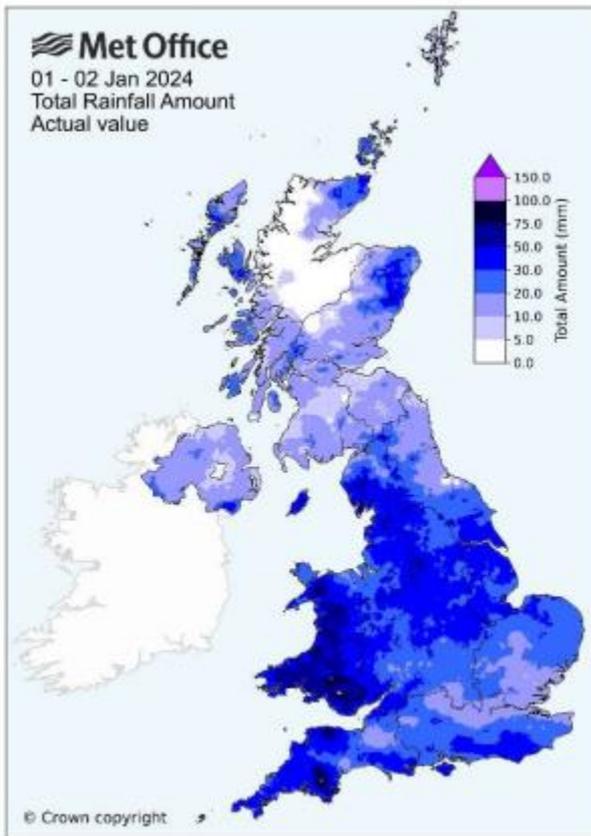


Figure 5: Total rainfall amount (mm) 1st to 2nd January 2024 Figure 6: Total rainfall amount (mm) for the first four days of January 2024

The resulting impacts of Storm Henk were significant at several locations across the UK. With watercourses full and the ground already saturated from the persistent rain throughout December, the additional rainfall from Henk resulted in further flooding across Staffordshire. At Cranberry, one residential property experienced internal flooding, with further flooding reported to gardens, outbuildings, highways and surrounding agricultural land.

4 Data and Analysis

4.1 Catchment Characteristics

Cranberry is predominantly rural in nature, surrounded by pasture and arable land. Residential properties are located along Biddles Lane, Back Lane and Sandy Lane. The closest watercourse is Meece Brook. The watercourse does not flow through the village itself but is culverted beneath the West Coast Mainline 400m to the north of the village, before flowing in a southerly direction on the western side of the railway (Figure 7).

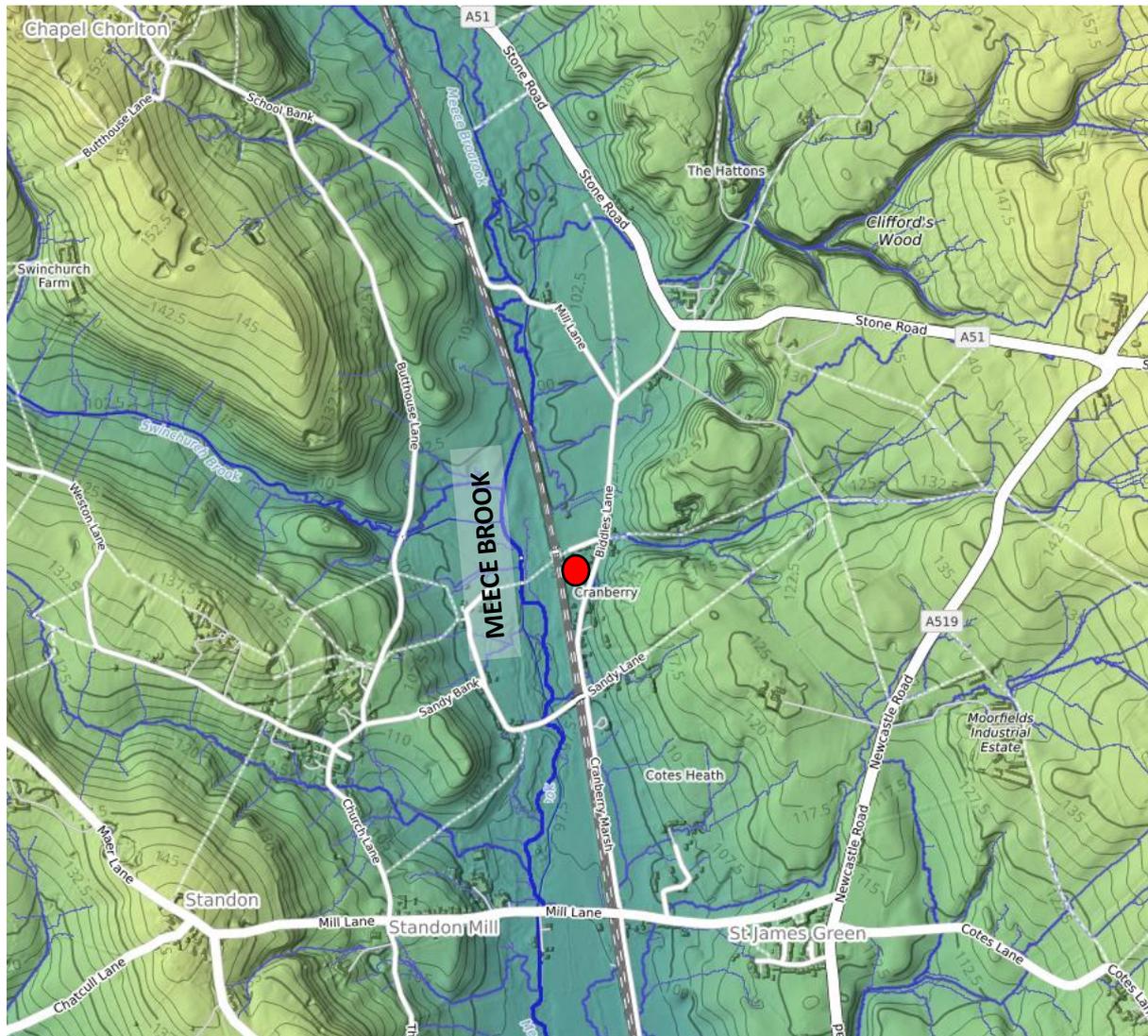
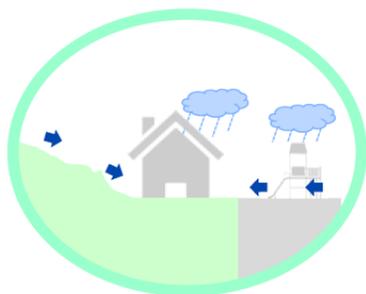


Figure 7: Elevation data for Cranberry and surrounding area (Source: SCALGO Live)

Data shows that the village sits at an elevation of approximately 100m AOD within the valley of the Meece Brook. To the east, the ground rises up steeply to elevations of around 190m AOD at the highest point. The West Coast Mainline railway forms the western boundary of the village. Biddles Lane forms the main route through the village ranging in elevation from 100m AOD at the northern extent of the village to 99m AOD in the southern extent of the village.

4.2 Drainage Networks

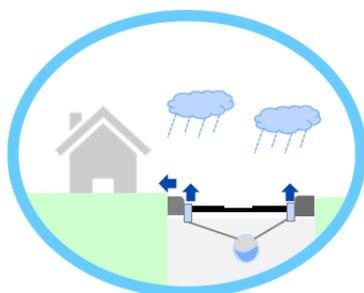
The various elements of the drainage network at Cranberry are illustrated in Figure 8 and described in more detail below.



Surface Water

Soft surfaces, known as *permeable surfaces*, allow water to soak (infiltrate) into the ground. These are typically in the form of gardens, parks, fields, and green spaces.

Hard surfaces, known as *impermeable surfaces*, do not allow any rainfall to soak into the ground and this rainfall will become (surface water) runoff. Runoff is usually very quick too. These are typically in the form of highways and roads, roofs, car parks and public squares.



Highway Drainage

Highway drainage consists of gullies, drainage channels and other features which collect and drain rainfall away from the highway. These features are typically located on one, or both, side(s) of the highway where they connect to an underground highway drainage system which ultimately connects to the public sewer infrastructure.

Figure 8: Elements of the drainage network at Cranberry

4.2.1 Surface Water

Recent flood events have highlighted the risk of flooding from rapid surface water runoff from agricultural land to the east of the village. Mapping software called SCALGO has been used in conjunction with site observations to identify the predominant surface water flow routes within the village. Figure 9 shows the catchment area conveying surface water runoff from the agricultural land to the east of Cranberry with a rainfall depth of 37mm applied to an uninterrupted catchment.

This shows that surface water flows in a westerly direction towards the village with the catchment covering an area of around 160ha. The topography is steep, ranging from 190mAOD in the upper catchment (east of Bottom Lane) to approximately 100mAOD in the lower catchment adjacent to Biddles Lane. Surface water flows follow the prevailing topography to an open ditch which runs parallel to Gorse Covert, before entering a 150mm diameter pipe just upstream of Biddles Lane. This pipe discharges into the Highway Drainage Network along Biddles Lane.

Figure 9 demonstrates that there is a natural low point to the east of Newcastle Road (A519) that holds back runoff from the catchment to the east (59ha). At this point there is a 250mm culvert in the highway, but in recent flood events the highway was overtopped, with water continuing to flow towards the village.

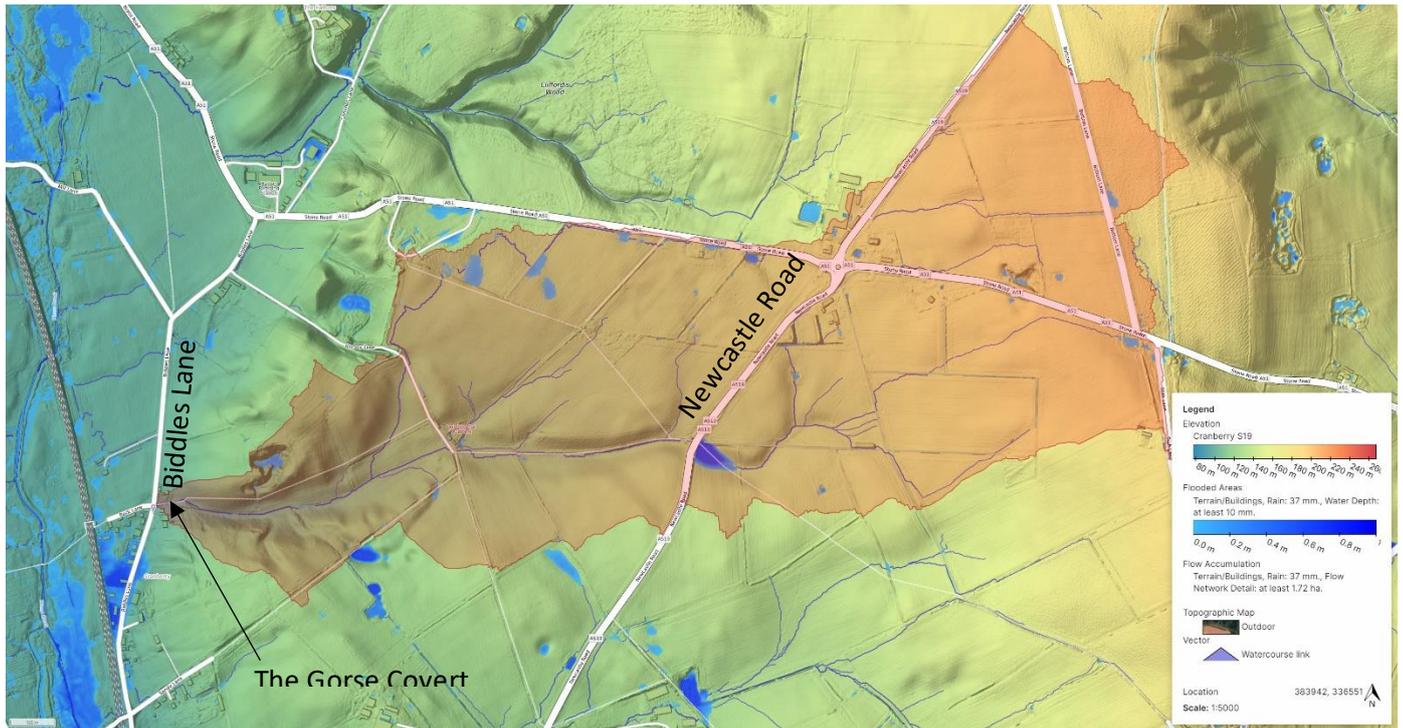


Figure 9: Cranberry surface water catchment with 37mm rainfall applied as defined by SCALGO Live

4.2.2 Highway Drainage

Surface water that flows onto the highway is collected via the highway drainage network comprising traditional highway gullies and connections. Investigations have shown that the highway drainage network connects into a pipe that is situated in the rear gardens of properties situated on the western edge of Biddles Lane (Figure 10, blue line). This pipe flows in a southerly direction for approximately 25m before being culverted beneath the West Coast Mainline and ultimately discharging to Meece Brook approximately 150m to the west of the village.

Staffordshire County Council (SCC) Highway Authority are responsible for the highway drainage network along Biddles Lane. Consultation with SCC Highways has indicated that the highway drainage network also conveys the surface water runoff from the agricultural land to the east (refer to Section 4.2.1 above).

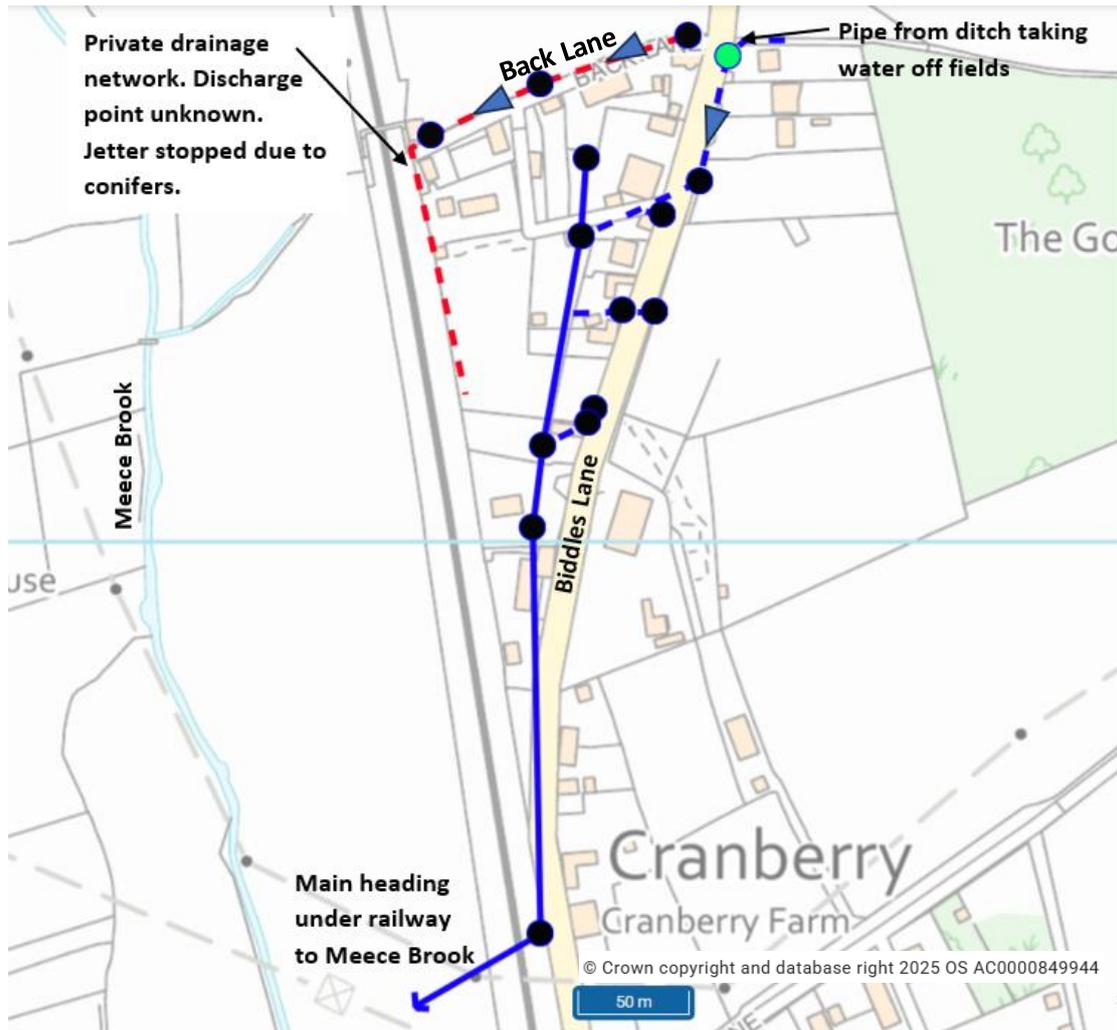


Figure 10: Local drainage networks identified in Cranberry from previous investigations (Note: locations are approximate, and further investigation is required to determine exact locations and connectivity of the drainage network)

4.2.3 Private Drainage Networks

Surface water runoff from Back Lane discharges into a 150mm diameter pipe (Figure 10, red dashed line) that flows in a westerly direction towards the West Coast Mainline. Previous investigations have been undertaken by SCC Highways to determine where this drainage pipe discharges, however, this was inconclusive and not investigated further as the road is classified as a private highway and does not fall under the responsibility of SCC Highways.

Properties at Cranberry are understood to be served by their own private drainage systems, predominantly discharging to septic tanks and soakaways. Consultation with SCC Highways has indicated that roof water and septic tank overflows from some properties discharge into the highway drainage network.

4.3 Predicted Flood Risk

Flooding is difficult to predict, and while there are many local factors that influence flooding, there are a number of publicly available, national information tools which can enhance our understanding of the potential risks within a local area, more specifically risk of flooding from surface water and from rivers.

Information predicting the long term flood risk for an area is publicly available to view using the following Gov.UK link:

<https://www.gov.uk/check-long-term-flood-risk>

It should be noted that this information informs as to the long-term risk for an area, the possible causes of flooding and how to manage flood risk from rivers and the sea, surface water, reservoirs and groundwater. It does not inform how likely it is that an individual property will flood or flood risk from sources such as blocked drains and burst pipes.

4.3.1 Flooding from Rivers and the Sea

Cranberry is located within Flood Zone 1 of the Environment Agency’s flood map for rivers and the sea (Figure 11).

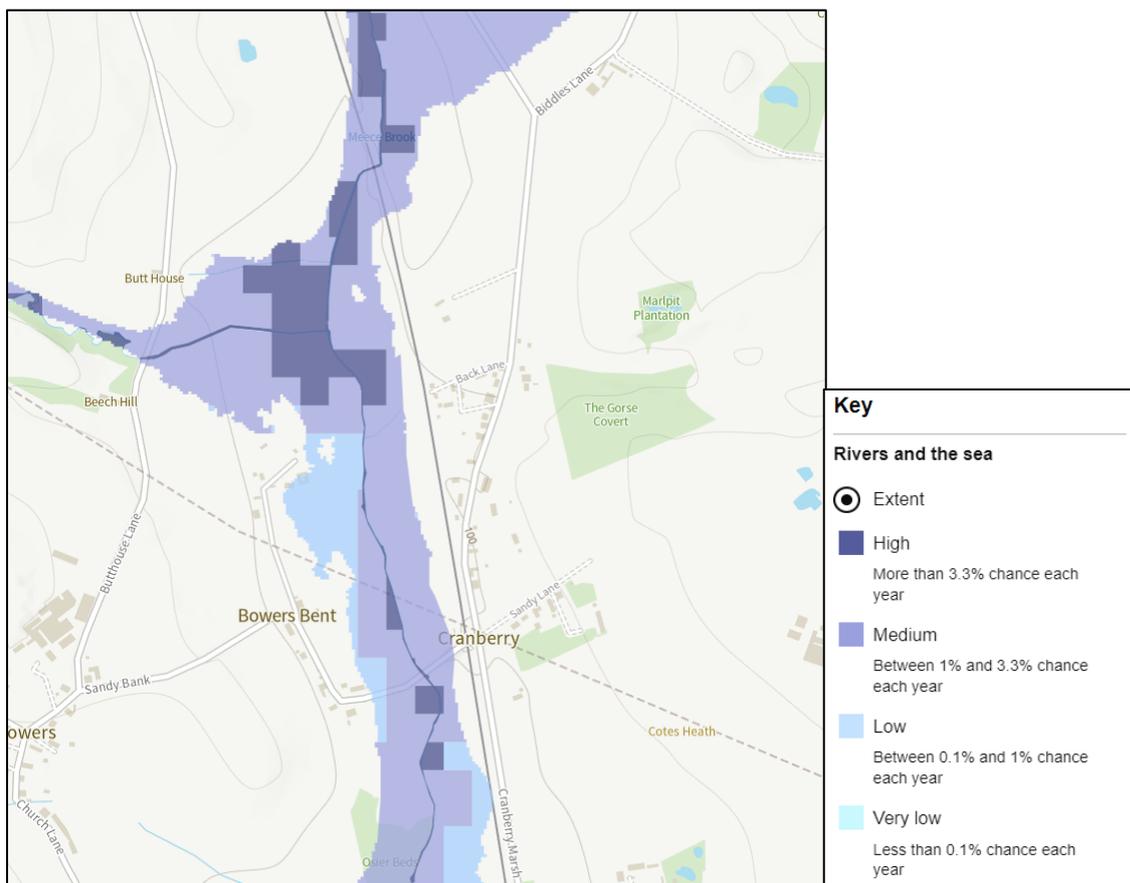


Figure 11: Environment Agency rivers and sea flood risk map for Cranberry. Source: Environment Agency.

The Environment Agency defines the yearly chance of flooding from rivers and the sea as ‘Very low’ for Cranberry. This means that there is less than a 0.1% chance of flooding from the rivers or sea each year.

4.3.2 Flooding from Surface Water

Surface water flood risk maps from the Environment Agency are presented in Figure 12.

The Environment Agency defines the yearly chance of flooding from surface water as ‘Low’ throughout much of the village. This means that there is less than a 0.1% and 1% chance of flooding from the rivers or sea each year. Areas of ‘High’ surface flood risk are shown within central and southern parts of the village. At these locations, there is more than a 3.3% chance each year of surface water flooding.

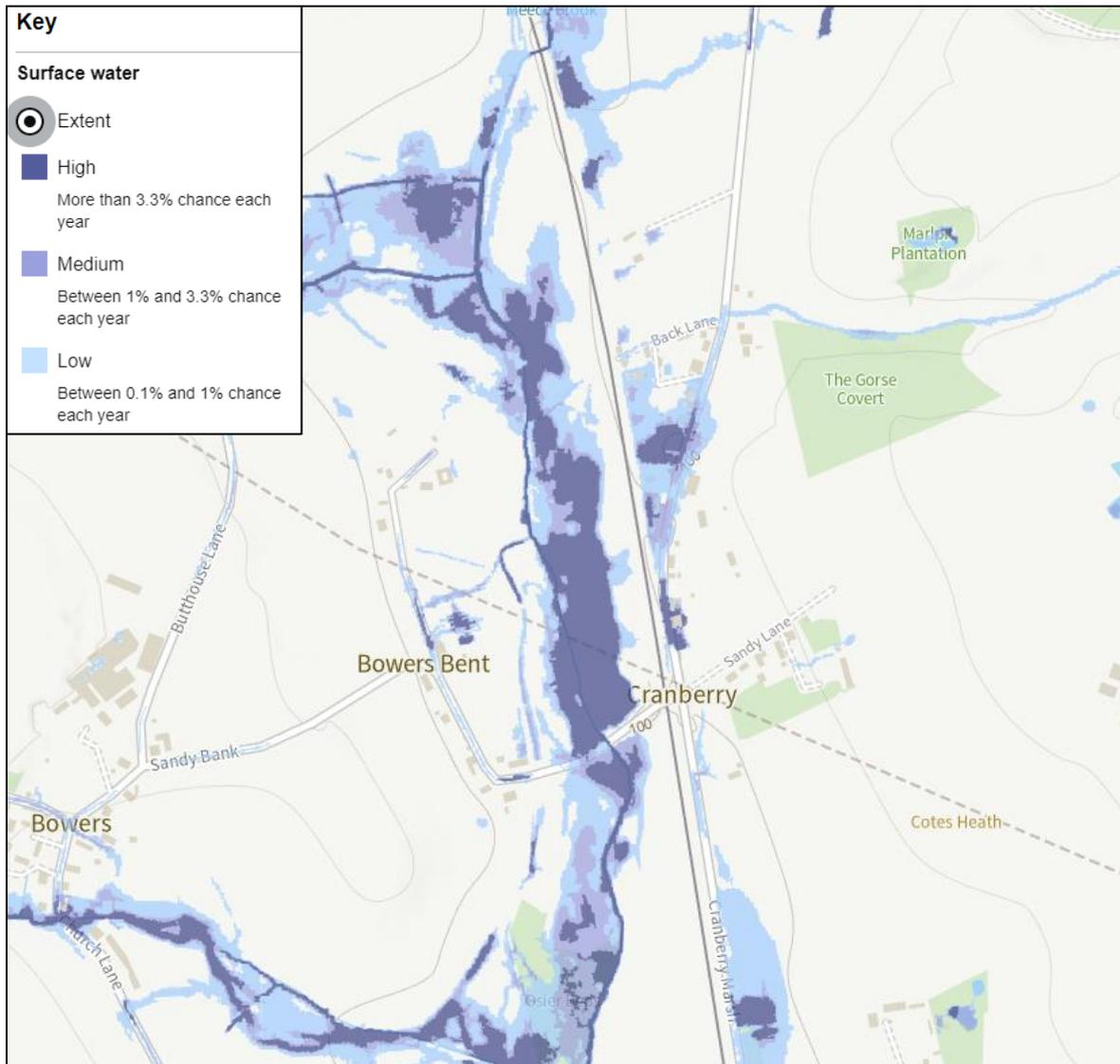


Figure 12: Environment Agency surface water risk map for Cranberry. Source: Environment Agency.

4.4 Previous Flood Events

Cranberry has suffered severe flooding on several occasions recently, including August 2020 and January 2021.

The most significant event to date was recorded on 12th August 2020. Consultation with the Parish Council and local residents confirmed that at least 10 properties experienced internal flooding at locations including Back Lane, Biddles Lane and Gorse Lane. Records show that during the August 2020 flood event, rainfall associated with a series of thunderstorms resulted in a rapid onset of flooding. Review of the MET Office monthly water situation report for the Midlands for August 2020³ demonstrates that many parts of the Midlands received 'Above Normal' amounts of rainfall compared to the long-term average throughout August 2020. This resulted in soils becoming much wetter and soil moisture deficits being larger than the long-term average. During the event, 40.2mm of rainfall fell in a 4.5 hour time period which equated to a rainfall return period of <10 years and >20 years. The intense rainfall falling in a short amount of time led to rapid surface water runoff from agricultural land to the east of the village which exceeded the capacity of the local drainage network and culvert crossings beneath the West Coast mainline located to the west of the village. Internal flood depths of up to 4 feet were reported in parts of the village and emergency services were called to rescue residents from their properties.

The January 2021 event was associated with Storm Christoph. Records indicate that 40.7mm of rainfall fell over a 77 hour period (Source: HydroMaster). No internal property flooding was reported during this event due to intervention by local residents, however the flooding mechanisms described by residents were the same as those in both August 2020 and the more recent flooding associated with Storm Henk (January 2024). The MET Office monthly water situation report for the Midlands area for January 2021⁴ indicates that January 2021 was a wet month with all areas reporting 'Above Normal' or higher rainfall. Soil moisture deficits at the time were almost zero, meaning that the ground was heavily saturated. The volume of rainfall falling on already saturated ground led to rapid surface water runoff from agricultural land to the east of the village which exceeded the capacity of the local drainage network.

The consequences of flooding at Cranberry in recent years have been severe with the community being deeply affected by the tragic fallout from the flooding.

4.5 Previous Investigations

A formal Section 19 Investigation was not undertaken following the 2020 flood event as at the time, the number of properties that reported internal flooding to the LLFA was below the threshold to trigger a Section 19 investigation. However, given the significant impacts of the flooding, the LLFA worked in conjunction with the local Highway Authority and Network Rail to investigate the flooding issues further.

It was concluded that the rapid surface water runoff from the agricultural land to the east exceeded the capacity of the local drainage network and culvert crossings beneath the West Coast Mainline. To reduce the risk of flooding, several actions were undertaken including:

³ Environment Agency Monthly water situation report – Midlands Area – Summary – August 2020 (Source: [Water situation: area monthly reports for England - GOV.UK](#))

⁴ Environment Agency Monthly water situation report – Midlands Area – Summary – January 2021 (Source: [Water situation: area monthly reports for England - GOV.UK](#))

- The Highway Authority inspected and cleared highway drains, providing additional investigation above and beyond routine maintenance.
- Network Rail surveyed and cleared culverts under the West Coast Mainline to the Meece Brook to the west to ensure there were no blockages.
- Discussions were held with the local landowner who introduced land management changes to help reduce rapid runoff from the wider catchment.

4.6 Rainfall Data

Rainfall data has been obtained from various sources to obtain a better understanding of the January 2024 event. Figure 13 shows 5-minute HydroMaster rainfall data for Cranberry between 01/01/2024 and 03/01/2024. Two distinct periods of rainfall are observed. The first occurred on 01/01/2024 between 13:15 and 22:50, with 13.5mm of rainfall falling over a 9.5 hour period. The second, more prolonged period of rainfall occurred on 02/01/2024 between 07:10 and 19:00, with an additional 23.6mm of rainfall falling over a 12 hour period. This accumulates to a total of 37.1mm of rain over a 48hour period.

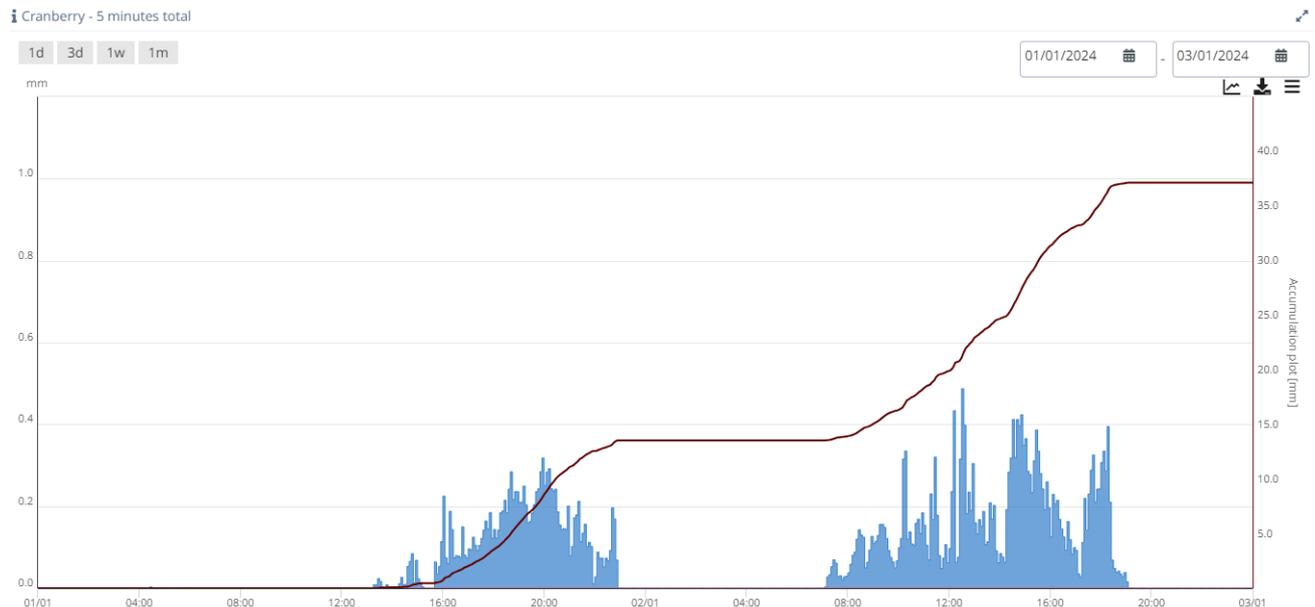


Figure 13: 5-minute recorded rainfall and accumulation for Cranberry, 1st to 3rd January 2024 (Source: HydroMaster)

Similar rainfall totals for the same period were recorded by DEFRA Environment Agency rain gauges within the area. The closest gauge, Stone (6.5km from Cranberry), recorded daily (24hour) rainfall totals of 13.4mm on the 1st January 2024, and, 21.0mm on 2nd January 2024; with a total of 34.4mm recorded over the two day period.

HydroMaster software has identified the average rainfall return period during the event at Cranberry as less than a 2 year rainfall event for the 24-hour and 48-hour storm durations (Figure 14).

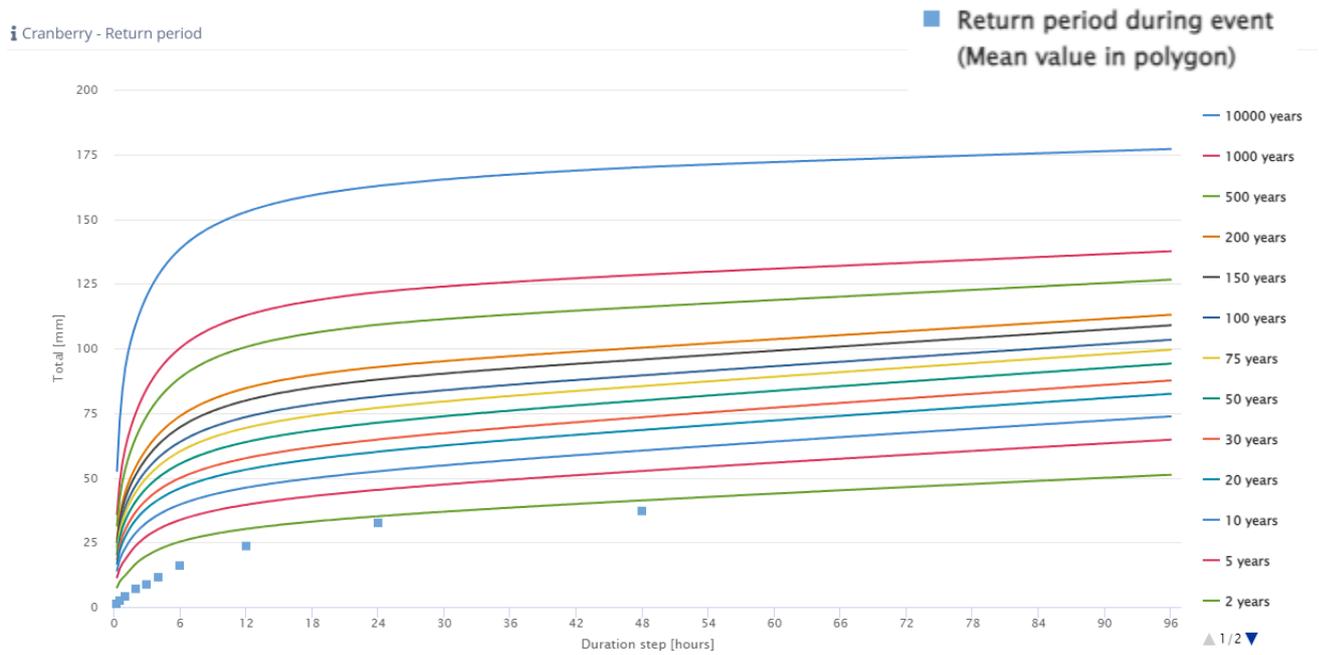


Figure 14: HydroMaster return periods for different storm durations during Storm Henk at Cranberry

Rainfall modelling from FEH has further identified the rainfall return period as a 2.11-year rainfall event for the entire storm duration (37.1mm rainfall during a 28 hour period). Figure 15 shows the amount of rainfall that correlates to specific return periods for the Cranberry catchment, identifying that 37.1mm of rainfall in 28 hours from 1st January to 2nd January 2024 is less than a 10-year return period.

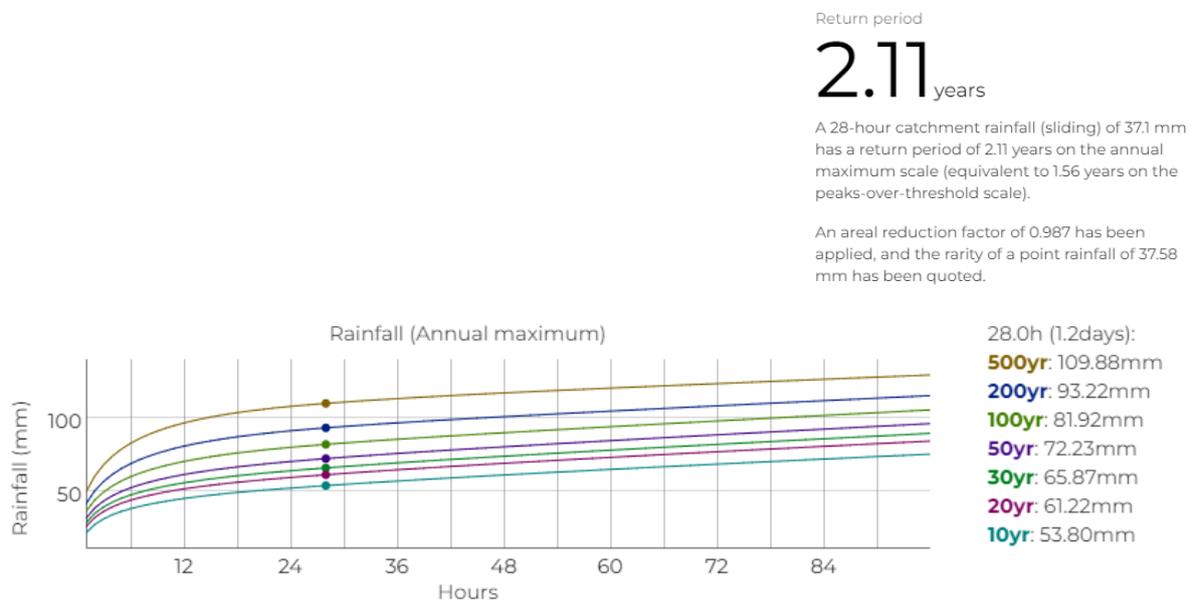


Figure 15: FEH rainfall return period for the Cranberry catchment estimated as 2.11 years for the 37.1mm of rainfall that was recorded during the entire event (28hours). The graph indicates rainfall values for the return periods from 10-years upwards.

ReFH (Revitalised Flood Hydrograph) software has been used to create a hydrograph from the observed rainfall and catchment characteristics, along with a series of uncalibrated modelled hydrographs for design storms of different return periods (Figure 16). Comparison of the peak flows enabled the rainfall runoff return period to be estimated. Figure 16 shows the modelled hydrograph for the Cranberry catchment, demonstrating that for Storm Henk, the peak runoff was equivalent to an event with a return period of a 1 in 200 year event.

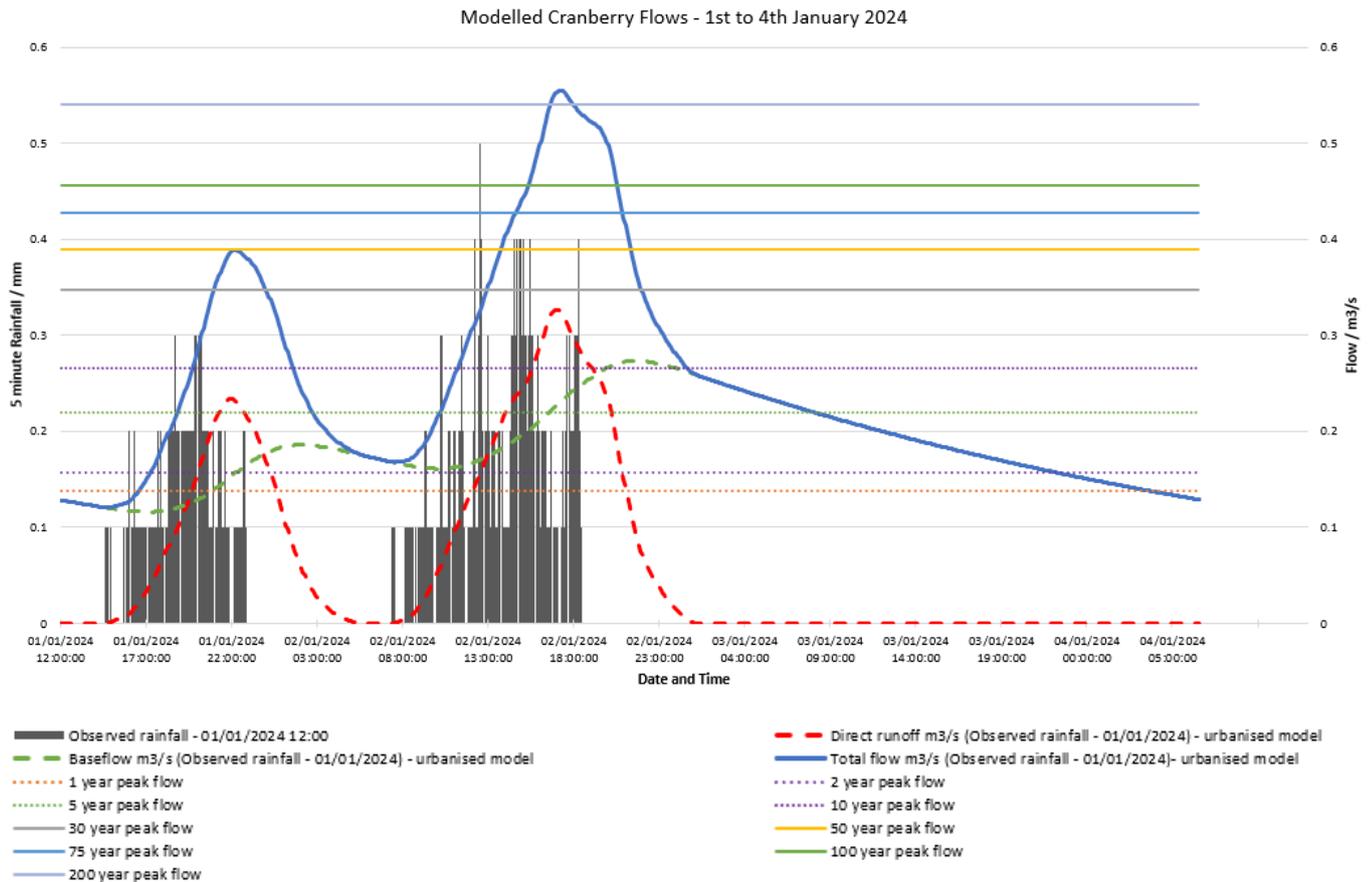


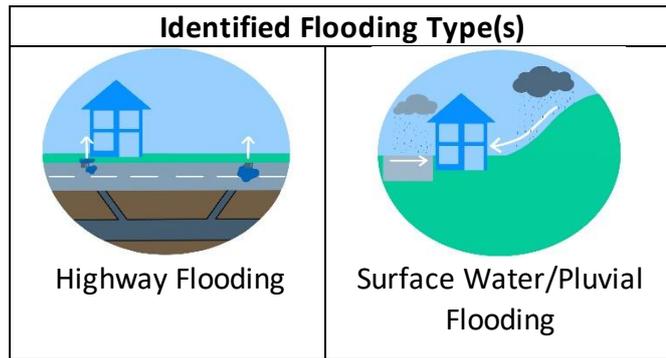
Figure 16: ReFH design flood hydrograph for Cranberry catchment following Storm Henk rainfall event on 1st and 2nd January 2024

Whilst the recorded rainfall totals were not particularly extreme volumes on their own, the 37.1mm of rainfall over the 28hour period fell on already saturated ground. This, combined with the steep nature of the catchment resulted in rapid runoff response.

4.7 Description of Flooding at Cranberry on 2nd January 2024

On 2nd January 2024, Biddles Lane and Back Lane were affected by surface water flooding, affecting the Highway Drainage Infrastructure, driveways and residential properties.

Staffordshire County Council LLFA were first made aware of flooding by a representative from Standon Parish Council on 15th January 2024 who reported that at least one property had flooded internally.



Following the reported flooding, Flood Risk Officers met on site with the Parish Council to discuss the flooding issues. Residents were also invited to complete an online flood questionnaire to confirm which properties had flooded internally both on 2nd January and in previous flood events. This was to ensure a comprehensive history of flooding was obtained.

Figure 17 shows the flow routes observed by residents during the flood event on 2nd January 2024.

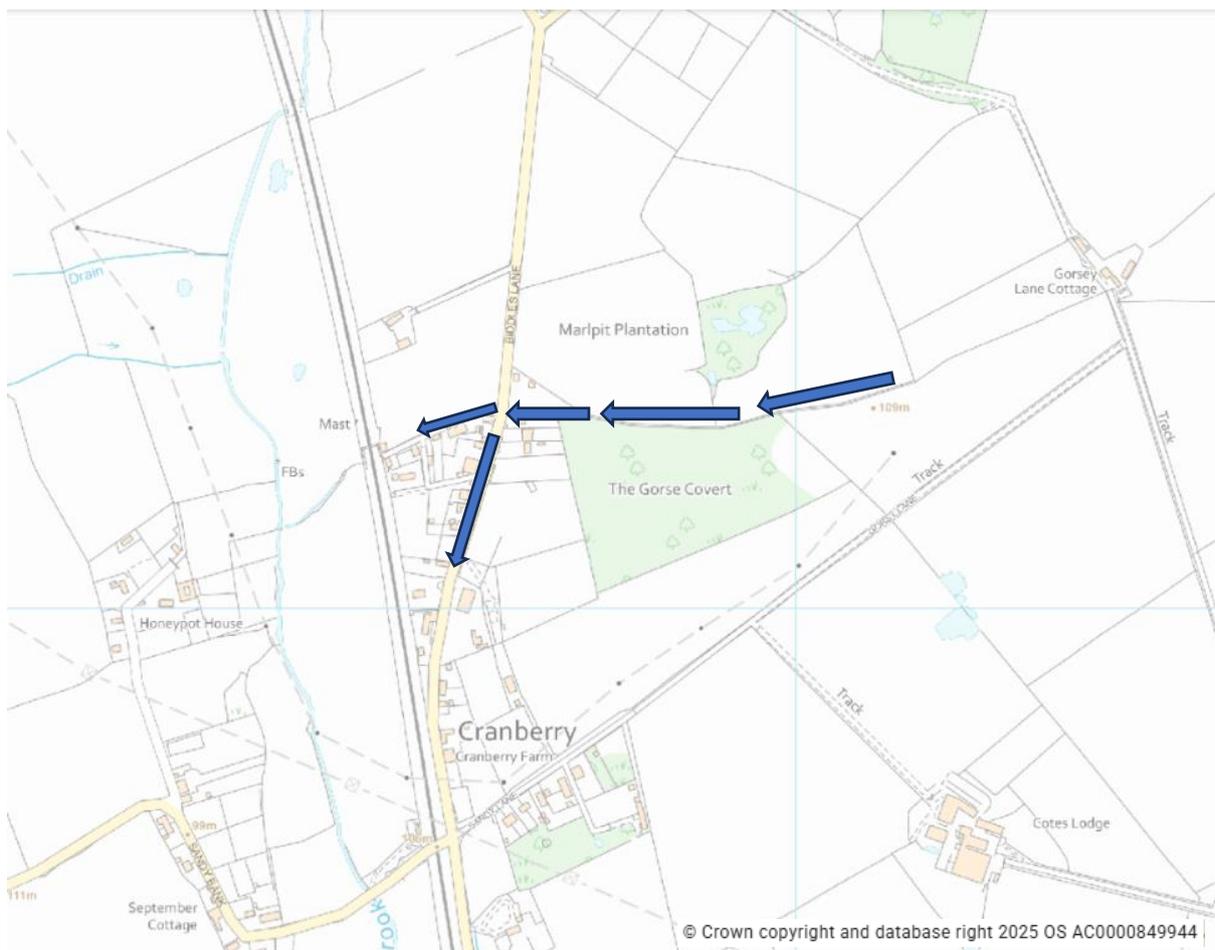


Figure 17: Surface water flow routes observed by residents on 2nd January 2024

Residents described how water flowed from agricultural land to the east of the village towards the small ditch that is situated adjacent to the footpath alongside The Gorse Covert. Once the capacity of the pipe inlet at the downstream end of the ditch adjacent to the footpath was exceeded, water spilled onto the footpath adjacent to the ditch and flowed westerly towards Biddles Lane and Back Lane (Figure 17).

SCC Highway Authority attended site and provided sandbags to residents who placed them across the entrance to the footpath adjacent to The Gorse Covert in an attempt to prevent water spilling onto the highway (Figure 18). Unfortunately, the volume of water was too significant, and water flowed over the sandbags towards the highway.



Figure 18: Surface water flowing from Gorse Covert footpath (Photos provided by resident)

Additional sandbags were also placed across the highway between Biddles Lane and Back Lane to divert the flow of water in a southerly direction through the village (Figure 19).



Figure 19: Sandbags placed between Biddles Lane and Back Lane to divert water away from properties on Back Lane during Storm Henk (Photo provided by resident)



Figure 20: Water flowing in a southerly direction along Biddles Lane during Storm Henk (Photo provided by resident)

To further reduce the impact of flooding, residents pumped water from the highway into a manhole located on the surface water drainage network in the works area adjacent to the West Coast Mainline. Discussion with the Parish Council indicates that this point in the network had sufficient capacity to take the volume of water being pumped into it.

Records indicate that at least one property experienced internal flooding during Storm Henk, with many more properties flooded within their curtilage. Discussion with the Parish Council highlighted that if it had not been for the effort of the local community who used sandbags to divert the flow of water and purchased pumps, the extent of flooding would have been significantly worse.

5 Risk Management Authority Functions

The Risk Management Authorities (RMAs) with relevant flood risk management functions at Cranberry are:

- **Staffordshire County Council Lead Local Flood Authority (LLFA)** – required to prepare and maintain a strategy for local flood risk management in their areas, investigate significant local flooding incidents and publish the results of such investigations and play a lead role in emergency planning and recovery after a flood event.
- **Staffordshire County Council Highway Authority** (Staffordshire County Council) - responsible for providing, maintaining and managing highway drainage infrastructure.

Other interested parties at Cranberry include:

- **Network Rail** – responsible for culverted watercourses beneath the West Coast Mainline.

5.1 Immediate Actions following January 2024 Flood Event

The primary Risk Management Authority in Cranberry is the Highway Authority.

Records indicate that upon being made aware of the flooding, sandbags were issued by SCC Highways to residents who then used the sandbags to divert flow away from properties along Back Lane.

Following the flood event meetings were held between officers from Staffordshire County Council's Highway Authority and the Lead Local Flood Authority to discuss the flooding issues.

SCC Highway's commented that in most instances; the local drainage network has the capacity to accommodate surface water runoff. Flooding to property has only really become an issue in recent years, with flood events generally occurring following periods of prolonged rainfall associated with named storm events, and particularly when several storms have occurred in close succession, such as experienced in the Autumn/Winter of 2021 (Storm Christoph) and 2023-2024 (Storm Henk). When the ground is saturated and there is an increased volume of surface water running off the agricultural land to the east, the 150mm diameter pipe that conveys the surface water from the ditch adjacent to The Gorse Covert has insufficient capacity, and water spills out onto the highway.

SCC Highways also raised concerns that the drainage network serving the village is significantly under capacity for the size of catchment flowing into it and previous investigations had determined that the drainage network is receiving additional flow from roof and septic tank overflow. Opportunities to upsize the systems should be considered but would be dependent on the capacity of the culverts beneath the railway.

SCC Highways raised further concerns over the capacity of the local drainage system in the southern part of the village. Further investigation is required to determine the capacity of the drainage network, including discussion with network rail, particularly in the southern part of the village where access to manholes is restricted where fencing has been placed over the manhole cover.

The Parish Council and several residents raised concerns over a potential blockage within the drainage network that runs to the rear of properties on Biddles Lane. This was discussed with SCC Highways who indicated that they were not aware of a blockage in this part of the network but

commented that they had undertaken previous investigations of the private network serving Back Lane (Figure 10, red dashed line). Investigations as to the discharge point of this pipe were inconclusive and since this is a private drainage network that does not fall under the responsibility of SCC Highways, no further action was taken at the time.

Several reports of blocked gullies were received immediately following the flood event. Consultation with SCC Highways confirmed that all the gullies within the village of Cranberry are on a triennial cleanse. Given the volume of floodwaters experienced in these events, it is unlikely that the condition of the gullies would have been a significant contributing factor to the flooding experienced in recent events. During normal conditions, the gullies operate effectively.

5.2 National Flood Recovery Framework

The Flood Recovery Framework (FRF) to help communities recover from the impacts of Storm Henk was announced by the UK Government on 6th January 2024⁵. This was a national scheme which was made available to eligible areas in England that experienced exceptional localised flooding.

Following an initial survey to gather information on potential impacted residents and businesses across the County, Stafford Borough Council and Staffordshire County Council worked in partnership to contact affected residents and establish whether they were eligible to access the funding, that required properties to be internally inundated or for residents to be without access or services for 24/48-hours during the Storm Henk event (between 2nd and 12th January 2024).

Residents and businesses were also invited to submit an Expression of Interest to apply for a Property Flood Resilience (PFR) Repair Grant Scheme. This grant was made available to help improve the flood resilience of the property and to allow residents to recover more quickly from future flooding⁶. The application process closed on 15th July 2024 and at the time of publishing this report SCC are engaging with approved contractors to undertake property surveys and any subsequent recommended PFR installation works.

⁵ [Government payments for communities affected by flooding - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/government-payments-for-communities-affected-by-flooding)

⁶ [Get Help After Storm Henk Flooding - Staffordshire County Council](#)

6 Conclusions

Significant flooding occurred in Cranberry in January 2024 following a period of heavy and persistent rainfall. A series of named storm events occurred throughout Autumn/Winter 2023-2024 resulting in a wetter-than-average winter. By the time Storm Henk arrived, catchments were saturated and drainage ditch networks were at elevated base-flows. Whilst the rainfall return period for the event was not particularly significant (less than a 2 year event), the increased volume of surface water runoff from agricultural land to the east of the village exceeded the capacity of the 150mm inlet pipe at the end of the footpath adjacent to The Gorse Covert ditch.

This resulted in water spilling out onto the highway and towards properties. One property reported internal flooding, in addition to flooding to driveways, gardens and the highway. Had the local community not intervened by using sandbags to divert flow away from property and by pumping water into the downstream part of the network that had sufficient capacity, the extent of flooding may have been significantly worse.

The Risk Management Authorities (RMAs) with relevant flood risk management functions are Staffordshire County Council Lead Local Flood Authority and Staffordshire County Council Highway Authority. Each RMA was notified of the flooding and asked to investigate and report on the status of assets under their responsibility, and whether they have taken or are proposing to undertake actions to mitigate the risk of future flooding.

The Highway Authority were made aware of blocked gullies within the village and have subsequently confirmed that routine cleansing has been undertaken and gullies were running on departure and in reasonable condition. Whilst some investigation of the Private Drainage network along Back Lane was undertaken by SCC Highways following the August 2020 event, no further action is proposed at this location as this is a privately owned asset that is not maintained by the Highway Authority.

Previous work has been undertaken by National Rail who surveyed and cleared culverts under the West Coast Mainline to ensure there were no blockages.

Anecdotal evidence suggests there may be a blockage within the drainage network to the rear of properties along the western side of Biddles Lane. This requires further investigation along with further connectivity investigation of the private drainage network from Back Lane.

Properties impacted by internal flooding were invited to apply for Property Flood Resilience funding as part of the Flood Recovery Framework grant scheme. This work is ongoing with property surveys expected to commence in early 2025.

Further investigation is required to determine whether there are options within the wider catchment to mitigate the risk of flooding to properties in Cranberry.

The actions taken to date by the Risk Management Authorities and further recommended actions are summarised in Section 7.

7 Recommended Actions

As part of this flood investigation, in addition to determining what contributed to flood event, a set of recommended actions have been proposed that may help to alleviate flooding in the future or at least reduce risk to properties.

Table 1 below sets out relevant Risk Management Authorities (RMAs) and other interested parties, actions that have been taken to date since the flood event on 2nd January 2024, and, those actions proposed for the future, with the relevant RMA who will lead.

Table 1: Risk Management Authorities and recommendations and actions

RMA/Party	Actions to date	Further Actions
SCC Highway Authority	Gullies jetted and cleansed as part of triennial cleansing regime.	Ensure gullies are maintained and kept clear (ongoing in-line with policy parameters).
SCC Lead Local Flood Authority	Implementation of the Flood Recovery Framework (FRF) for Staffordshire for residents affected by internal property flooding.	<p>Realisation of the PFR aspect of the FRF for properties in Cranberry that submitted an application (priority).</p> <p>Upon completion of Phase 1 of the FRF PFR, consideration of additional properties that may be included in Phase 2 (after July 2025)</p>
SCC Lead Local Flood Authority	Section 19 Investigation completed, RMAs notified.	<p>Continue to work in partnership with relevant RMAs.</p> <p>Further consideration of the viability of flood mitigation measures and potential funding opportunities.</p> <p>Investigate connectivity and capacity of wider drainage network in Cranberry and investigate reports of blockage.</p>