



**Somerset
Council**

Flood Investigation Report

*Section 19 Flood and Water
Management Act 2010*

**Croscombe, Bowlish
& Shepton Mallet**
3rd & 4th October 2020

Organisation	Somerset Council
Title	Flood Investigation Report: Croscombe, Bowlish & Shepton Mallet
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Owner	Somerset Council LLFA
Primary Legislation	Flood & Water Management Act 2010

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Executive Summary

Event summary	
Date	3rd & 4th October 2020
Location	Croscombe, Bowlish & Shepton Mallet
Source of flooding (surface run-off, river, groundwater, coastal)	Surface water runoff and fluvial flooding from the River Sheppey with associated groundwater flooding from raised groundwater levels and seepage from below-ground infrastructure.
Number of properties flooded internally	26 reported in total 10 in Croscombe 10 in Bowlish 6 in Shepton Mallet
Maximum Depth of internal flooding	380mm reported in one property in Croscombe 914mm reported in one property in Bowlish 457mm reported in one property in Shepton Mallet
Duration of internal flooding to properties	Predominantly up to 24 hours although one property in Shepton Mallet reported one week.
Strategic infrastructure affected	Highway
Depth of flooding of strategic infrastructure	Estimated up to 200mm in Croscombe 305mm in Shepton Mallet
Duration of flooding to strategic infrastructure	Unknown however it is assumed flood duration was similar to that reported of property flooding.

Responsible Flood Risk Management Authority	Lead Local Flood Authority
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Disclaimer

This report summarises the findings of an investigation into a specific flood event based on information available to the Lead Local Flood Authority at the time of publication.

Acknowledgements

Somerset County Council Lead Local Flood Authority and the other risk management authorities are grateful to the residents, businesses, and elected members of Croscombe Parish Council and Shepton Mallet Town Council who have come forward with information to support this investigation.

Introduction

Lead Local Flood Authority Duty to Investigate:

Under the Flood and Water Management Act 2010, Somerset County Council (SCC) is designated as the Lead Local Flood Authority (LLFA) for Somerset. This Act sets out a number of responsibilities for the County Council with regard to flooding, including a duty to investigate flood events within its area as it deems necessary:

(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:

(a) which risk management authorities have relevant flood risk management functions, and

(b) whether 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:

(a) publish the results of its investigation, and

(b) notify any relevant risk management authorities.

SECTION 19, FLOOD AND WATER MANAGEMENT ACT 2010.

When considering if it is necessary or appropriate to investigate a flood event Somerset County Council (SCC) reviews the severity of the incident, the number of properties affected and the frequency of such an occurrence.

This report has been produced to comply with legislation and to determine the main causes of the flooding. It should be noted that SCC has opted to develop this report beyond the requirements of the Flood and Water Management Act to include actions that should be considered by the relevant Risk Management Authorities (RMAs) or in some cases, by the landowner or local community action group.

There are various levels of action that can be taken depending on the severity of the situation, availability of funding and the feasibility of practical solutions to reduce the risk of further flooding. This being the case the recommended actions will generally fall into one of the following categories:

Short-term delivery of schemes or actions: a measure that can be implemented quickly by a Risk Management Authority at relatively low cost.

Further investigation/research: Further investigations such as catchment studies and hydrological/hydraulic assessments to understand the flow rates and directional paths and extent of flooding. A study may also assess the options for and impact of mitigating measures.

Long-term scheme or actions: Where the risk of flooding cannot be mitigated by quick win measures then a larger scale flood alleviation scheme may be required, possibly identified by further investigations and research. The assessment, design and construction of larger flood alleviation schemes will be reliant on the availability of funding.

Landowner action: Members of the public who own land adjacent to watercourses have riparian responsibilities, which include a duty to maintain their section of watercourse to ensure there is no impediment of flow. Other works to protect the property may also need to be funded by property owners to ensure delivery where public funding is not available.

Community action: In some cases, the community may come forward to deliver and maintain their own local schemes. Whilst in some cases, this may generate further contributions from the Risk Management Authorities.

This flood investigation is a starting point in identifying and understanding a flooding problem and opportunities for mitigation.

Scope

Somerset County Council in their role as Lead Local Flood Authority (LLFA) considered it necessary to complete and publish an investigation into the flood event at Croscombe, Bowlish and Shepton Mallet for the flood event occurring on the 3rd & 4th October 2020.

This report provides a summary of the event and probable causes based on the available evidence and next steps. This includes information gathered during the site walkover of Croscombe on the 4th December 2020 with representatives from the LLFA (SCC), Wessex Water (WW), Mendip District Council (MDC) and Croscombe Parish Council and community members / residents. The Croscombe Flood Committee was set up in response to Storm Alex and has aided in the information gathering.

An online Zoom meeting was held with Shepton Town Council on the 14th December 2020, in which the Town Council delivered a presentation about the flood event to the LLFA (SCC), MDC, EA, Wessex Water and community members / residents.

The report records the actions taken and/or proposed and the organisation or individuals responsible for completing them.

It is important to note that the investigation was directly impacted by the Coronavirus-19 Pandemic, the associated lockdowns and restrictions on movement / travel and limitations on face-to-face meetings. All of which extended the timeframe to deliver this report to the communities.

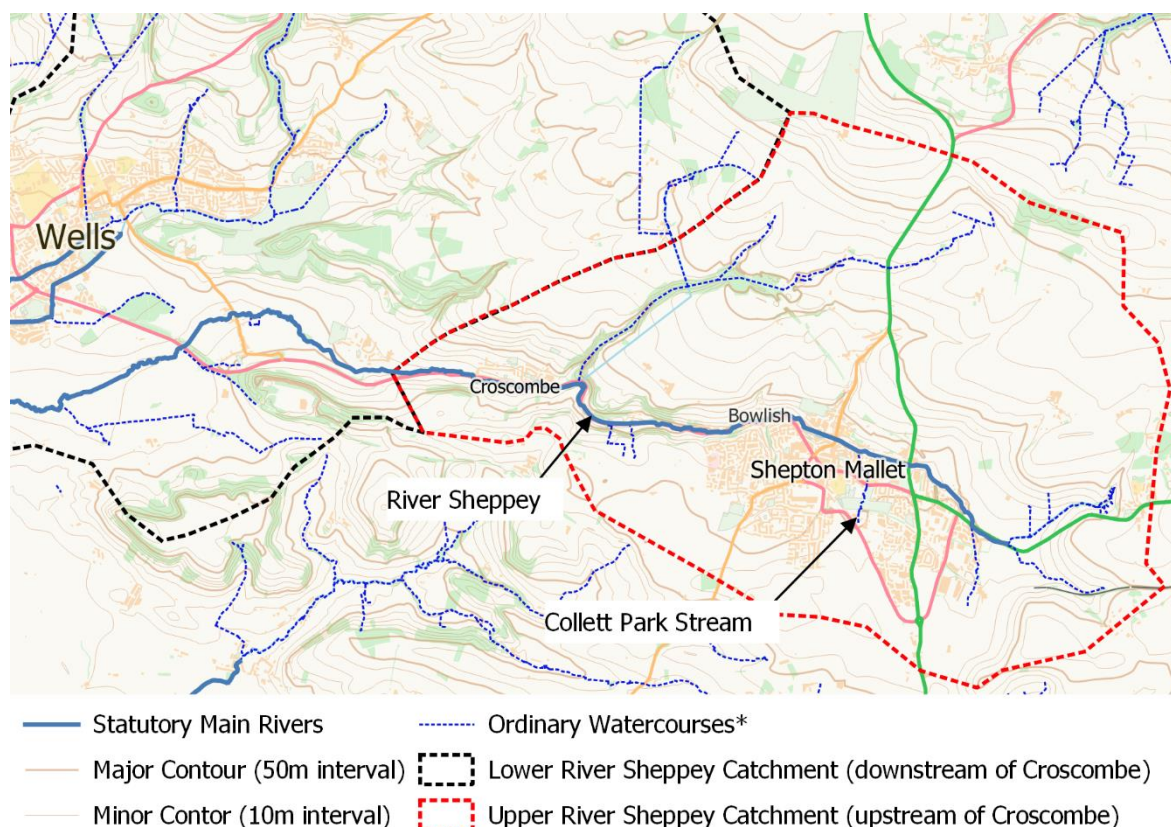
Site Location and context

River Sheppey and Catchment Characteristics

Croscombe, Bowlish and Shepton Mallet are collectively located within the River Sheppey catchment in the centre of Mendip District. The catchment is circa 25km south west of Bath and 4 to 8km west of Wells. The River Sheppey catchment is illustrated below in Figure 1.

The Sheppey catchment is steeply sided and topographic contours are illustrated within Figure 1; closer together contours indicate steeper topography.

Figure 1 - Study Area Location



* Many ordinary watercourses are small and ephemeral, with unknown land drainage connections. These are therefore poorly mapped and shown here for illustration only.

The River Sheppey rises to the east of Shepton Mallet and west of Doultling and subsequently flows in a westerly direction towards the Somerset Levels. The river passes through Shepton Mallet along the northern side of the town before passing through Bowlish, a village on the edge of Shepton Mallet. 2km downstream from Shepton Mallet, the River Sheppey passes through Croscombe village.

The River Sheppey is classified as a Main River for much of its length which means the Environment Agency has the overarching responsibility for flood risk

management of the watercourse. It should be noted however riparian owners retain responsibility for maintenance and this is discussed further in Section 0.

The River Sheppey is supplemented with many other Ordinary Watercourses which drain into the Sheppey. The LLFA is responsible for managing flood risk associated with these watercourses however, as with Main Rivers, riparian owners retain responsibility for maintenance.

Croscombe

Croscombe is contained within a very steep sided valley and the surface water drainage catchment lies predominantly to the east and north of the village. The sub-catchment is largely rural, consisting of a combination of arable, pasture and woodland. It should also be noted the area to the north of Croscombe is species-rich grassland.

Within Croscombe, this study focuses on the areas surrounding the A371, Long Street, Jack's Lane, and Old Street Lane. It is understood from the Croscombe Flood Committee during the site walk-over that no properties had flooded east of the junction of Rock Street and the A371 Long Street.

The River Sheppey has been highly modified by the historic construction of numerous mills that are now disused. The River Sheppey bifurcates at Jack's Bridge with the main river flowing adjacent to Long Street and a millstream (lead) passing under the Manor House, re-joining the River Sheppey before it passes into a culvert for 200m.

Figure 2 - Croscombe - River Sheppey Watercourse



In addition, a number of smaller Ordinary Watercourses discharge into the River Sheppey either upstream or in close proximity to Croscombe. A major tributary flows in a south-westerly direction through Hams Wood and valley, joining the River Sheppey upstream of Croscombe.

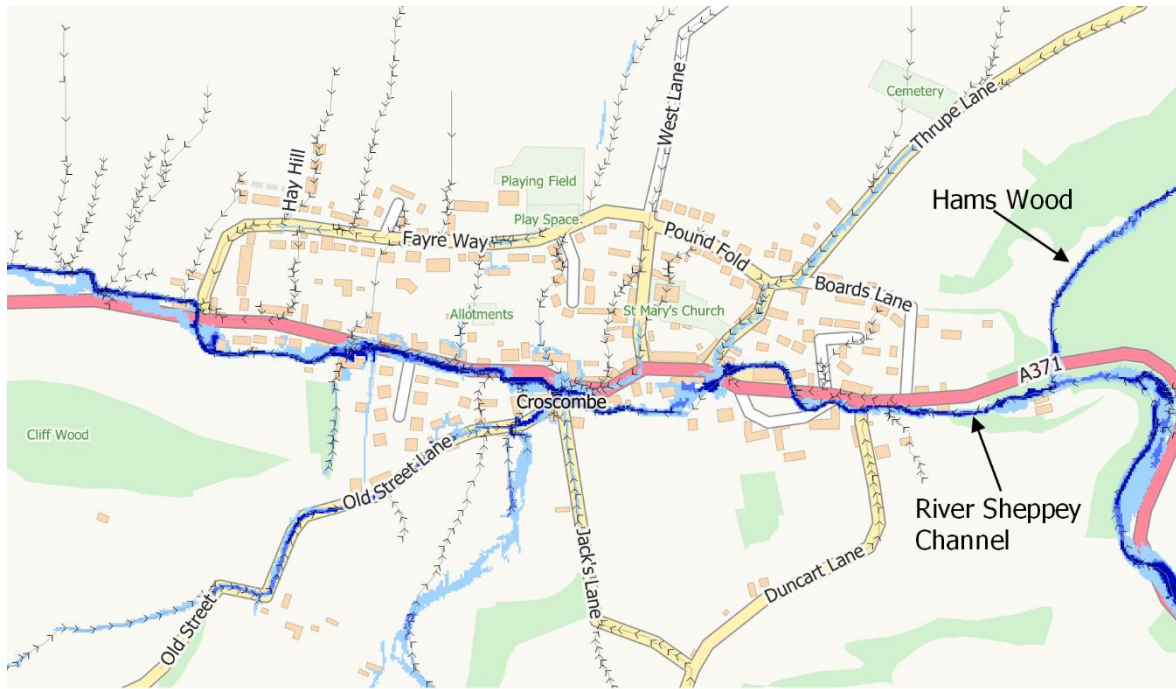
Many of these watercourses are ephemeral (i.e. seasonally dry out) and the only areas of standing water/flow were observed within the stream and ditch network in the upper area of the catchment.

As the River Sheppey is a Main River, this means the Environment Agency is responsible for flood risk management activities including any hydraulic modelling and mapping. The Environment Agency publishes this mapping in the form of the Flood Map for Planning and the Flood Risk from Surface Water maps which are shown below in Figure 3 and Figure 4.

Figure 3 - Croscombe - Flood Map for Planning



Figure 4 - Croscombe - Flood Risk from Surface Water Map



Risk of Flooding from Surface Water

- High Risk
- Medium Risk
- Low Risk

→ Other potential flow paths*

* From the 'South West Region Arc Hydro Rapid Response Catchment Analysis' undertaken by JBA Consulting on behalf of the Environment Agency, December 2012.

Bowlish

Bowlish is located on the western side of Shepton Mallet and this study focuses on the areas in the vicinity of the A371 Pike Hill and A371 Wells Road. Like Croscombe, the surrounding topography is very steep and the River Sheppey has been heavily modified as a result of construction of numerous mills that are now disused along with the construction of the Wells to Shepton Mallet road (now the A371) which was initially constructed in the 1850s.

In addition to the River Sheppey which passes through Bowlish east-to-west, a number of other tributaries have been culverted over the years including along Coombe Lane running south to north and discharging into the River Sheppey.

As noted above, the River Sheppey is a Main River and the Flood Map for Planning and the Flood Risk from Surface Water maps are shown below in Figure 5 and Figure 6.

Figure 5 - Bowlish- Flood Map for Planning

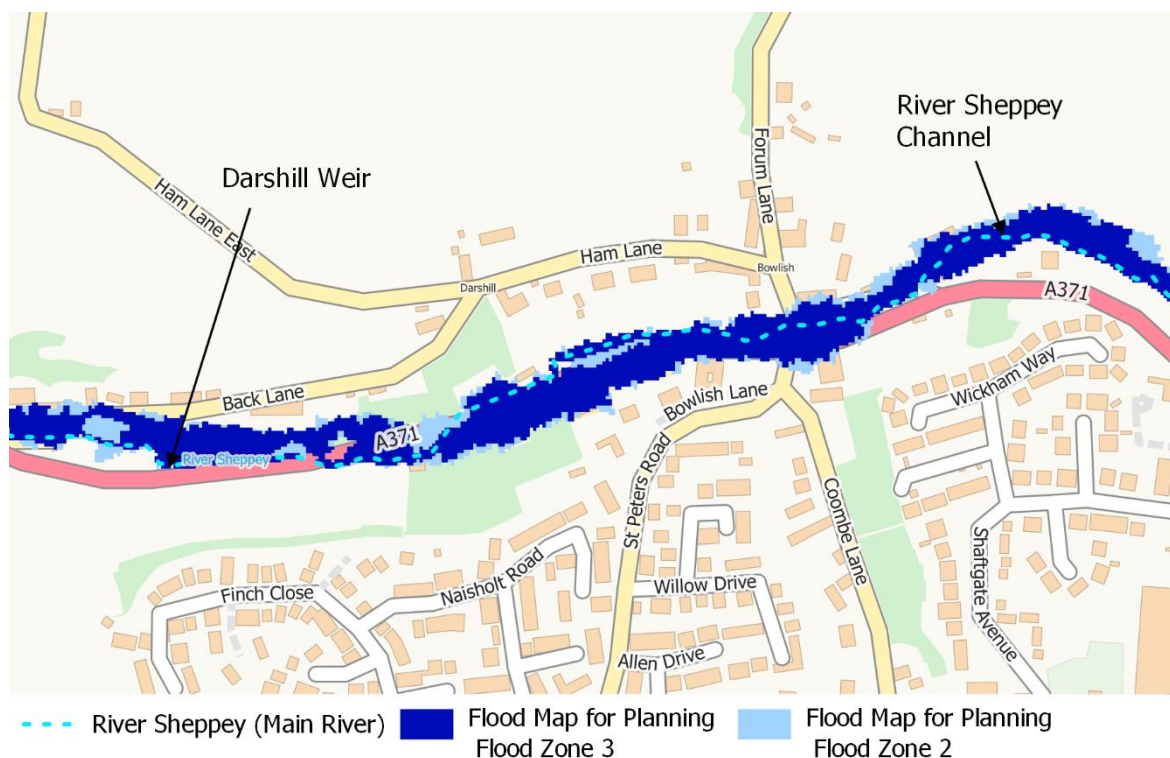
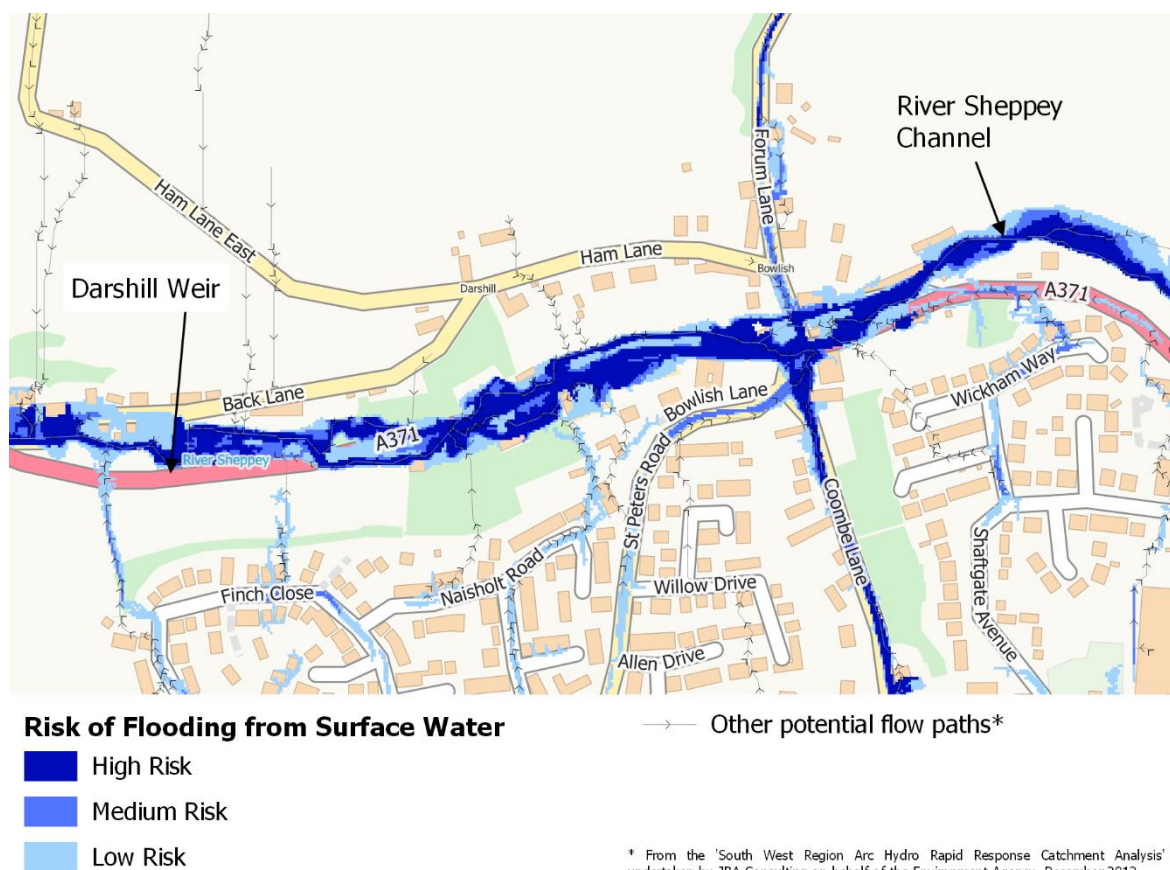


Figure 6 - Bowlish- Flood Risk from Surface Water Map



Shepton Mallet

Shepton Mallet is located in the headwaters of the River Sheppey and the town is surrounded by largely rural land use, predominantly pasture with occasional arable intensively farmed land use (i.e. maize). Like both Croscombe and Bowlish, the watercourse has been heavily modified with a number of culverts and within Shepton Mallet, this study focuses on the area in the vicinity of Leg Square, Gaol Lane, Lower Lane, and Cornhill in the north-eastern side of Shepton Mallet.

There are also a number of Ordinary Watercourse tributaries that drain into the River Sheppey and of particular importance is the Collett Park Stream which flows in a northerly direction through Collett park and is culverted beneath the former HMP Shepton Mallet Prison, continuing along Leg Square, and discharging into the River Sheppey culvert to the north of Lower Lane, this is illustrated in Figure 7.

The Flood Map for Planning and the Flood Risk from Surface Water maps are also shown below in Figure 8 and Figure 9.

Figure 7 - Shepton Mallet Drainage Context Map

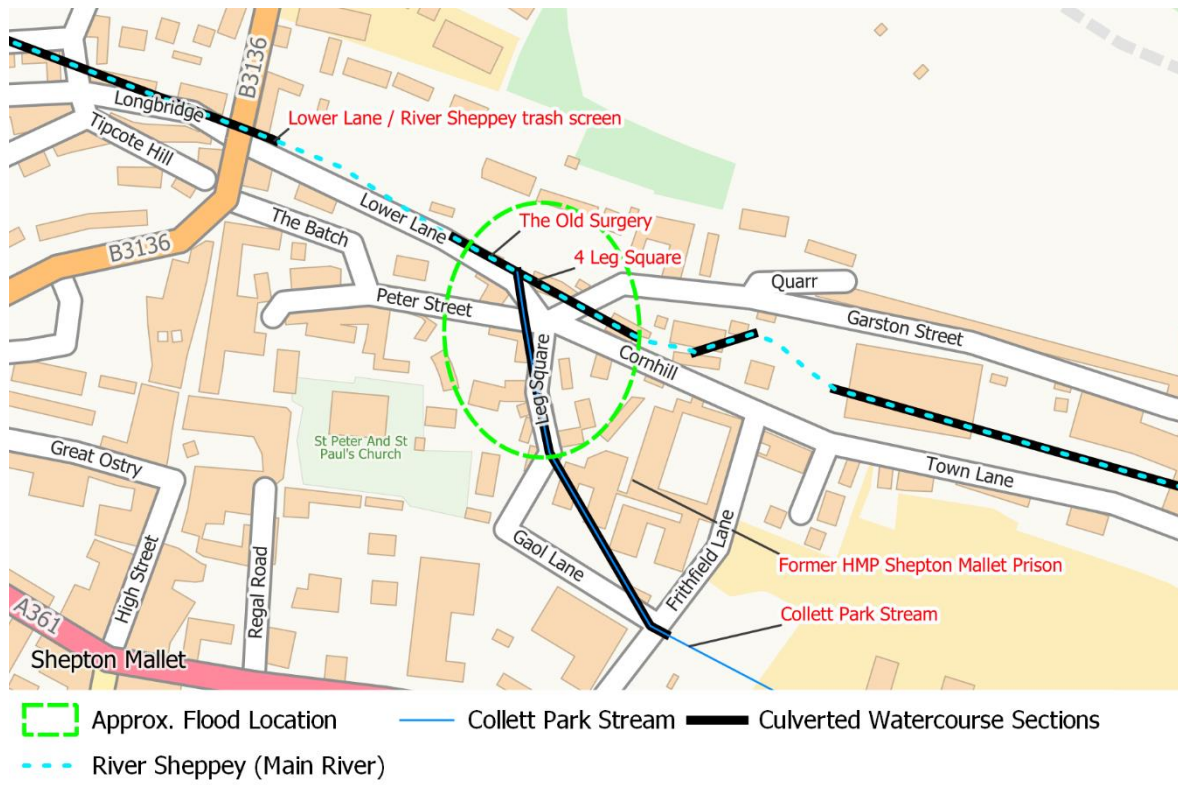


Figure 8 - Shepton Mallet - Flood Map for Planning

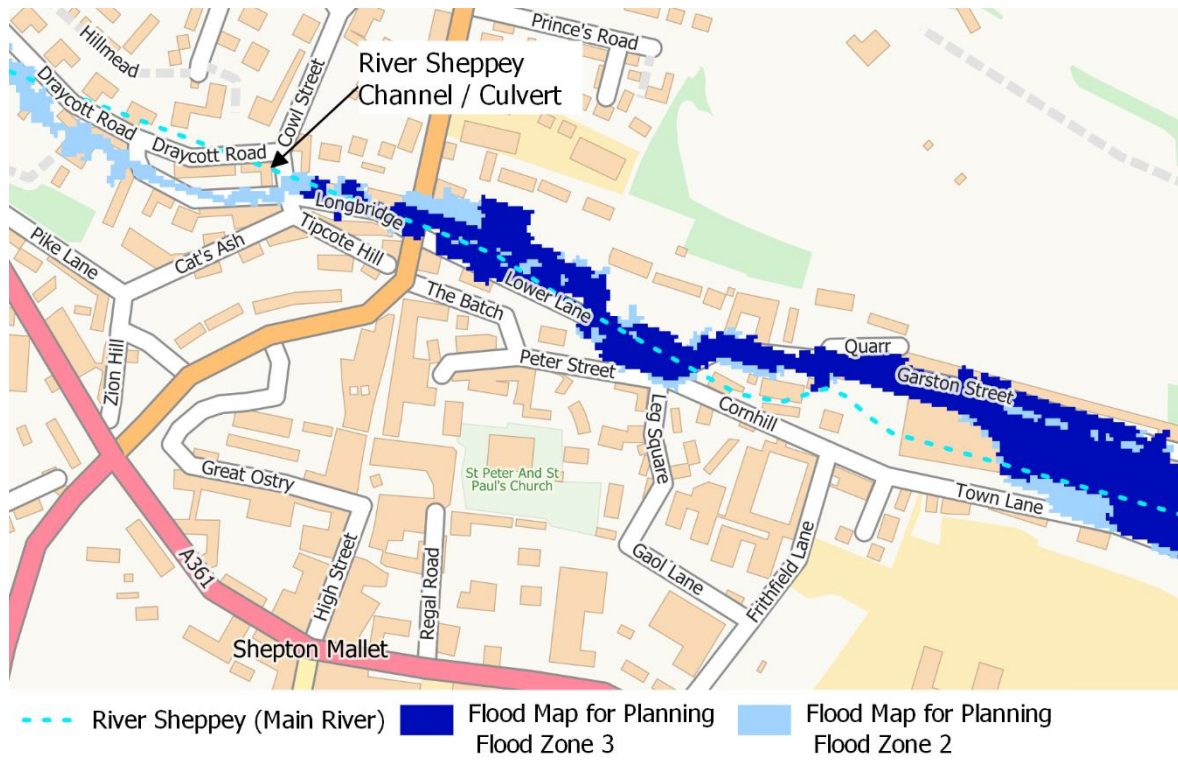
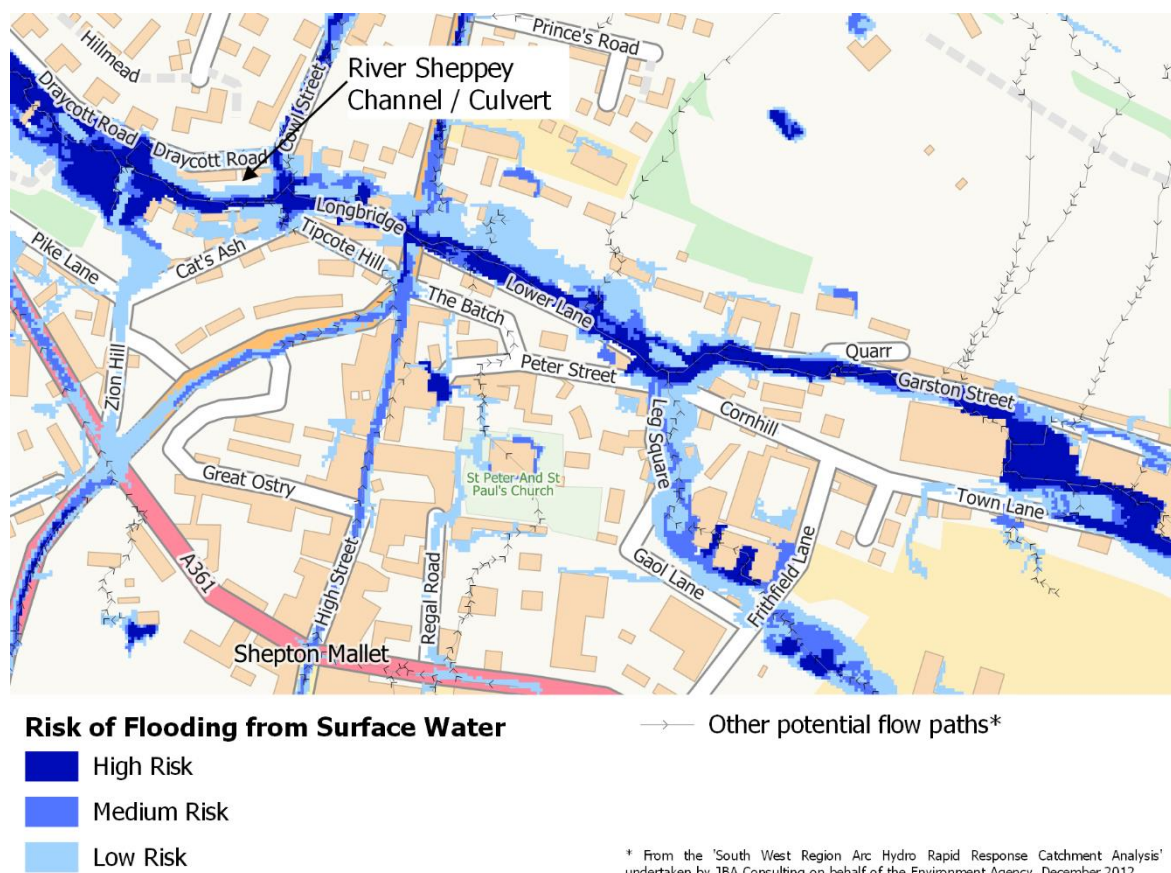


Figure 9 - Shepton Mallet - Flood Risk from Surface Water Map



Flood History

Croscombe, Bowlish and Shepton Mallet have suffered numerous flood events in recent years, the most notable being February 1990, March 1996, August 1996, December 2008, November 2011, and July 2012.¹

Table 1 below outlines the historic flood events reported to the LLFA and as illustrated below, the majority of historic events have occurred during the autumn and winter months, between October and February.

Historically properties have been flooded from surface water, blocked culvert / drainage issues and high levels in the River Sheppey. Some improvements to the surface water drainage system in the Croscombe area were carried out by Area Highways after the 2008 event with additional gullies being installed.

This list is not exhaustive. Not all flooding is reported to the LLFA, or indeed to other partners. Poor historic record keeping means some records are apparently lost. This list is to give a context of areas which flood repeatedly.

¹ The LLFA's Section 19 Flood Investigation Report for the 2012 flood event states "a number of properties" having flooded and the LLFA's historical flood database shows 4 properties having flooded. However, Section 19s are usually triggered by 5 or more properties flooding internally. It may therefore be reasonable to assume that the flood event of 2012 was the worst flood event in recent years that Croscombe has experienced prior to the flood event of the 3rd and 4th October 2020.

Table 1 - Table of historic events that have been reported to the LLFA RMA

Date	Location	Flooded	Flood Source(s)	Depth if known
12/07/1982	Lower Lane, Shepton Mallet	Property x15, school	River Sheppey	
01/02/1990	Long Street, Croscombe	Property x1	Surface	
22/03/1996	Long Street, Croscombe	Property x3	Surface	
21/08/1996	Long Street, Croscombe	Property x1	Surface	
?/10/1998	Upstream of Jacks Bridge, Croscombe	Details unknown	River Sheppey	
18/08/2006	Long Street, Croscombe	Property x3	River Sheppey	
21/08/2006	Long Street, Croscombe	Highway	Blocked drainage	
08/09/2006	Long Street, Croscombe	Highway	Surface	
20/10/2006	Wells Road, Bowlish	Property x3	River Sheppey	
27/10/2006	Long Street, Croscombe	Highway	Blocked drainage	
14/08/2007	Pike Hill, Bowlish	Property x3	River Sheppey	
24/10/2007	Long Street, Croscombe	Highway & Property x1	Surface	
06/12/2007	Wells Road, Bowlish	Highway	Drainage	
11/01/2008	Victoria Grove, Shepton Mallet	Property x1	Surface	
29/05/2008	Cannards Grave Rd, Shepton Mallet	Property x5, shops	River Sheppey	
10/11/2008	Long Street, Croscombe	Highway	Blocked drainage	
13/12/2008	Long Street, Croscombe	Property x4	River Sheppey	
04/11/2009	Wells Road, Bowlish	Highway	Surface	
12/11/2009	Long Street & Boards Lane, Croscombe	Highway	Drainage	
24/11/2009	Commercial Road, Shepton Mallet	Highway	Drainage	
29/01/2010	Long Street, Croscombe	Highway	Drainage	
16/02/2011	Long Street, Croscombe	Highway	Blocked drainage	
24/06/2011	Back Lane, Darshill	Property x1	Drainage	
19/07/2011	Charlton Road, Shepton Mallet	Highway	River Sheppey	
03/11/2011	Back Lane, Darshill	Highway	Drainage	
04/11/2011	Charlton Road, Shepton Mallet	Highway	Drainage	
04/11/2011	Wells Road, Bowlish	Highway	Surface	~150mm
04/11/2011	Long Street, Croscombe	Highway	Drainage	~130mm
06/11/2011	Old Wells Road, Darshill	Highway	Culvert	
18/11/2011	Wells Rd / Back Ln, Bowlish	Highway	Drainage	~150mm
03/01/2012	Charlton Road, Shepton Mallet	Highway	Surface	~600mm
03/01/2012	Charlton Road, Shepton Mallet	Highway	Surface	
03/01/2012	Cannards Grave Rd, Shepton Mallet	Highway	Surface	
03/01/2012	High Street, Shepton Mallet	Highway	Surface	
26/01/2012	Old Wells Road, Darshill	Highway	Surface	
02/05/2012	Old Wells Road, Darshill	Highway	Drainage	
23/06/2012	Old Wells Road, Darshill	Highway	Drainage	

11/07/2012	Wells Road, Bowlish	School	River Sheppey	
11/07/2012	Cannards Grave Rd, Shepton Mallet	Highway	Surface	
11/07/2012	Charlton Road, Shepton Mallet	Highway	Surface	
11/07/2012	Old Wells Road, Darshill	Highway	Surface	~1m
11/07/2012	Cannards Grave Rd, Shepton Mallet	Highway	Surface	
11/07/2012	Lower Lane, Shepton Mallet	Property x1	River Sheppey	
11/07/2012	West Shepton, Shepton Mallet	Highway	Drainage	~100mm
11/07/2012	Long Street & Church Street	Highway & Property x4	River Sheppey	~609mm
11/07/2012	Croscombe – details unknown	Details unknown	Details unknown	
09/10/2012	Frog Lane, Shepton Mallet	Highway	Drainage	
09/10/2012	Knowle Lane, Shepton Mallet	Highway	Drainage	
10/10/2012	Frog Lane, Shepton Mallet	Highway	Drainage	
04/11/2012	Cannards Grave Rd, Shepton Mallet	Highway	Surface	
04/11/2012	Shepton Road	Highway & Property x1	River Sheppey	
21/11/2012	Frog Lane, Shepton Mallet	Property x1, Highway	Surface	
21/11/2012	Cannards Grave Rd, Shepton Mallet	Property x3, Highway	Surface	
21/11/2012	Paul Street, Shepton Mallet	Highway	Drainage	
20/12/2012	Cannards Grave Rd, Shepton Mallet	Highway	Drainage	
29/12/2012	Cannards Grave Rd, Shepton Mallet	Highway	Drainage	
02/01/2013	Thrupe Lane	Highway & Property x1	Blocked culvert / drainage	
02/01/2013	Croscombe	Details unknown	Details unknown	
11/11/2013	Old Wells Road	Highway	Blocked culvert / drainage	
15/11/2013	West Shepton, Shepton Mallet	Highway	Surface	
24/12/2013	Long Street	Highway	Not recorded	
24/12/2013	Croscombe	Details unknown	Details unknown	
30/12/2013	Frithfield Lane, Shepton Mallet	Highway	Drainage	
06/01/2014	Cannards Grave Rd, Shepton Mallet	Highway	Surface	
14/01/2014	Back Lane, Darshill	Highway	River Sheppey	
12/02/2014	Long Street	Highway	Surface	
12/02/2014	Croscombe	Details unknown	Details unknown	
21/11/2016	Croscombe	Property x3, Highway	Surface, River Sheppey	
Recorded as 'various'	Long Street & western end of village	Property x4	Surface	
Recorded as 'various'	Croscombe	Details unknown	Details unknown	
Various	Charlton Road, Shepton Mallet	Highway	Surface	
03 & 04/10/2020	Long Street / Jack's Lane, Croscombe	Highway & Property x10	River Sheppey	

03 & 04/10/2020	Wells Road, Bowlish	Highway & Property x10	River Sheppey	
03 & 04/10/2020	Leg Lane and Leg Square, Shepton Mallet	Highway & Property x6	River Sheppey and drainage	

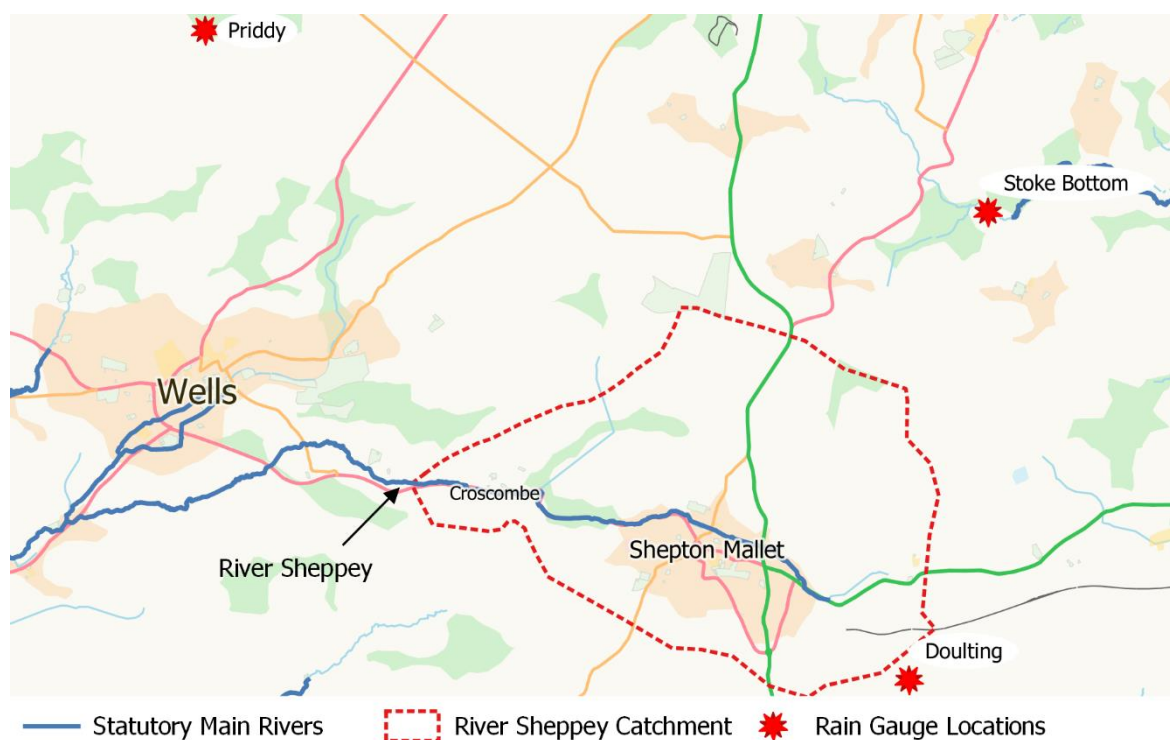
Storm Alex

Storm Alex brought torrential downpours of rain between midnight on Friday 2nd October and 3am on Sunday 4th October 2020 to Croscombe, Bowlish and Shepton Mallet, and the wider region, causing widespread flooding, internal flooding of properties, road closures and some travel disruption.²

Rainfall Analysis

Three Environment Agency rain gauges are located in the vicinity of the River Sheppey catchment, the locations of these are illustrated in Figure 10.

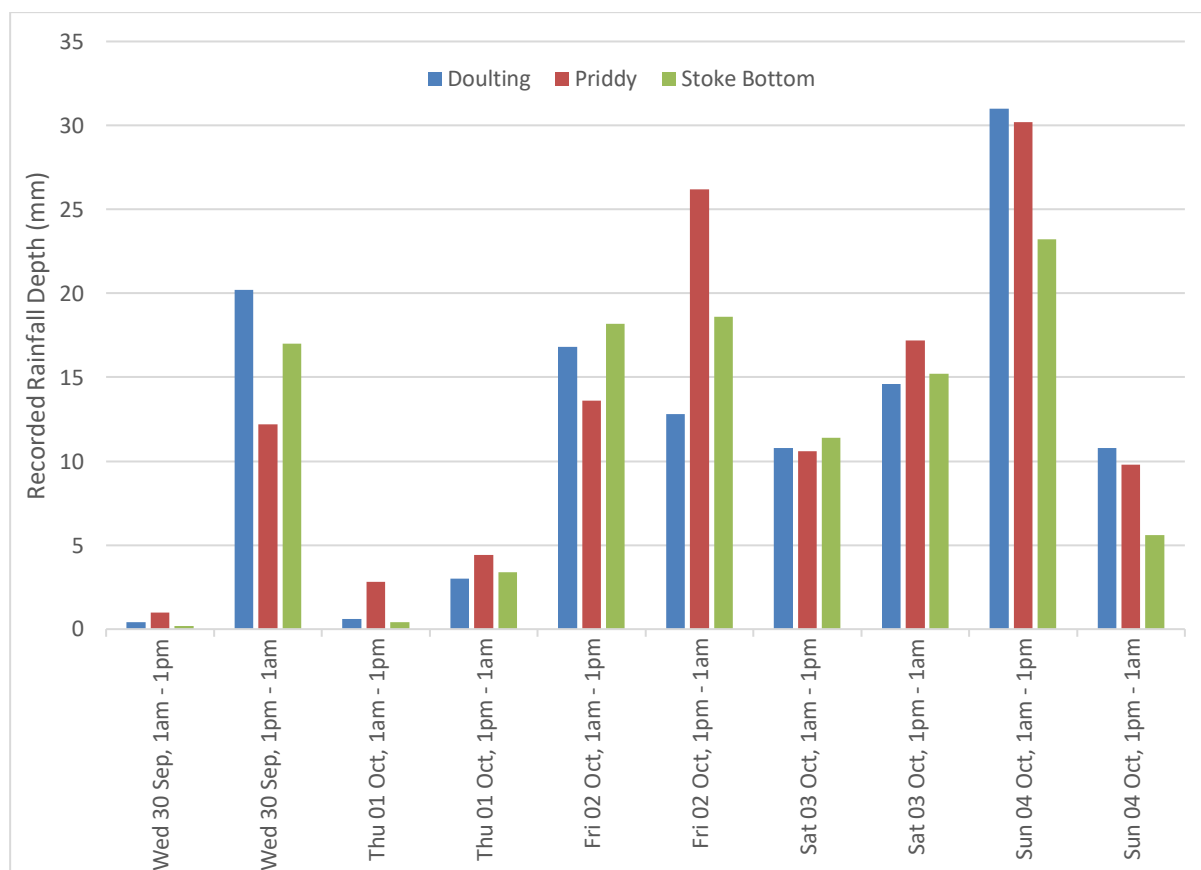
Figure 10 - Raingauge Locations



The rainfall data recorded preceding and during Storm Alex is presented in Figure 11 below. The three rain gauges record differing rainfall amounts as the storm passed through the area. However, as illustrated, similar rainfall patterns are experienced across all three gauges and rain occurred on all days leading up to the main rainfall event on Sunday 4th October.

² <https://www.itv.com/news/westcountry/2020-10-04/storm-alex-brings-months-worth-of-rain-fall-to-somerset-and-devon-in-just-two-days>

Figure 11 - Rainfall Data



Given the rainfall commenced on the 30th September and continued at various rates through to 4th October, it is believed that the wider catchment was saturated. Thus ground permeability capacity would have been reduced with the consequence of increased surface water run-off and high river levels.

To provide context, it is worthwhile comparing the storm event on the 3rd and 4th October to historical averages, recorded in the Sheppey catchment through the National River Flow Archive data³. Average October rainfall total is circa 92.3mm and a daily average of approximately 2.9mm per day.

Table 2 below summarises the rainfall totals in the week preceding and on Sunday 4th October. This also provides a comparison with the wider October average rainfall and daily average rainfall.

Table 2 - Rainfall Totals and Historic Comparison

	Doultling	Priddy	Stoke Bottom
30 th September - 4 th October Total rainfall depth	121mm 1.3x October Average	128mm 1.4x October Average	113.2mm 1.2x October Average
4 th October Daily total rainfall depth	41.8mm 14.4x Daily Average	40mm 13.8x Daily Average	28.8 9.9x Daily Average

³ [NRFA Station Data for 52009 - Sheppey at Fenny Castle \(ceh.ac.uk\)](https://ceh.ac.uk/nrfa/)

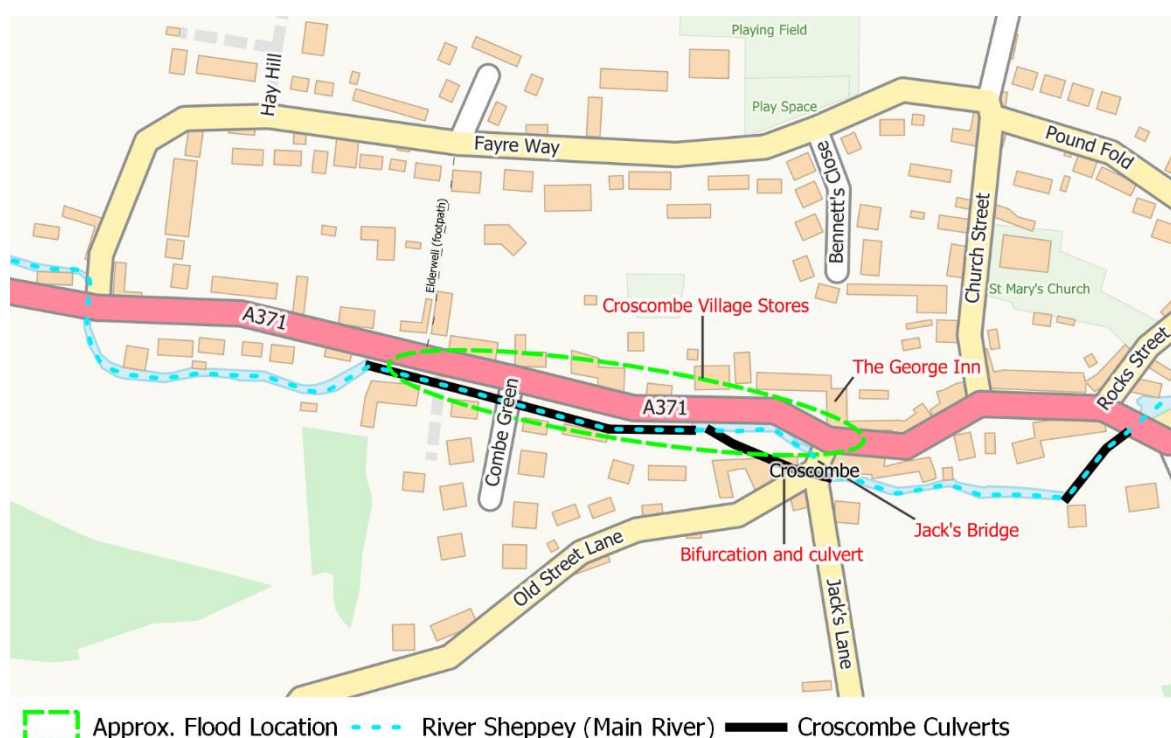
Croscombe Flooding

In total, it is understood approximately 10 properties were flooded in Croscombe. An Environment Agency (EA) flood alert was issued at 10:21 a.m. on the 3rd of October.

As outlined above, the flooding occurred in the vicinity of the A371, Long Street, Jack's Lane, and Old Street Lane, as illustrated in Figure 12. Reports of flooding have been provided directly to the LLFA and sourced from others including Wessex Water⁴, Mendip District Council, Croscombe Parish Council, Croscombe Flood Committee, and community members including during the site visit on the 4th December⁵.

During the site visit, a further one to two properties were identified at the western end of Croscombe as potentially flooded but have not been reported / confirmed. It should be noted that flood incidents are typically under-reported due to the impacts on insurance and other perceived costs. This may subsequently impact any future funding or flood alleviation works⁶.

Figure 12 - Croscombe Flood Schematic



The Croscombe Flood Committee stated that the source of the flooding was from the River Sheppey which exceeded capacity; this was described by one resident as “filling up with one big surge.” The local residents stated that water levels had not risen as high in the last twenty years and that the increase in levels was very sudden.

Four properties were reported as having flooded internally on Long Street that had previously been fitted with Property Flood Resilience (PFR) products such as flood

⁴ Incident report provided to the LLFA on 9th November

⁵ Information obtained from site walk-over on the 4th December 2020 with the following attendees: LLFA, MDC, Wessex Water, Croscombe Flood Committee, and other local residents.

⁶ The LLFA and other RMAs can only record properties that have flooded internally if reported and can only advise property owners that wish to engage.

boards, toilet bungs, non-return valves (NRVs) and pumps. These were fitted by the Environment Agency in 2017. Discussions with these property owners during the 4th December site visit outlined the flood water flow paths and ingress locations into and out of the properties.

Three of these property owners described how flood water came up through the flagstones of the floor. They believed this to be river water which had tracked underneath the road. One of the property owners reported internal flooding from underneath through the kitchen floor at the rear of the property and 300mm depth of flood water at the front door (facing on to A371 Long Street). The property owners also explained how the river level exceeded the height of some of the properties' private bridges in the rear gardens as illustrated in Figure 13.

Figure 13 - Example of private bridge to the rear of properties on A371 Long Street



Another property flooded internally and although previously fitted with a flood door privately purchased, the Local Planning Authority (LPA) required the flood door to be removed, prior to the flood event of the 3rd and 4th October, due to the property being a listed building. The property owner raised the concern and raised the question as to whether the flood gates in Shepton Mallet were opened during Storm Alex. Note there are 51 listed buildings in Croscombe.⁷

The property owners of Greyhound Farm, Saddlers, Old Mill Cottage, and Manor House indicated that Jack's Bridge was blocked / exceeded capacity and a drain directly outside and running adjacent to Greyhound Farm, Saddlers and Old Mill Cottage was identified as being blocked during the flood event. During the site walkover on the 4th December, the culvert adjacent to the A371 Long Street was observed as significantly vegetated and potentially blocked as illustrated in Figure 14. There is also local concern that this culvert has been damaged during the building of new houses just past Millrace.

⁷ <https://britishlistedbuildings.co.uk/england/somerset#.YcJWyTFxeUk>

Surface water run-off has historically been a problem at the Old Street Lane, Jack's Lane and A371 Long Street junction with two steep roads converging at Jack's Bridge. In response to flooding in 2008, works were carried out by SCC Highways on Jack's Bridge in July 2009 to alleviate road run-off from Old Street Lane and Jack's Lane with discharge holes / spillways being cut into the bridge's parapet to allow the surface water to discharge into the River Sheppey, as shown in Figure 15. Flood water was seen to be flowing through these spillways on the 3rd and 4th October 2020.

Figure 14 - Jack's Bridge showing the culvert adjacent to A371 Long Street blocked with vegetation

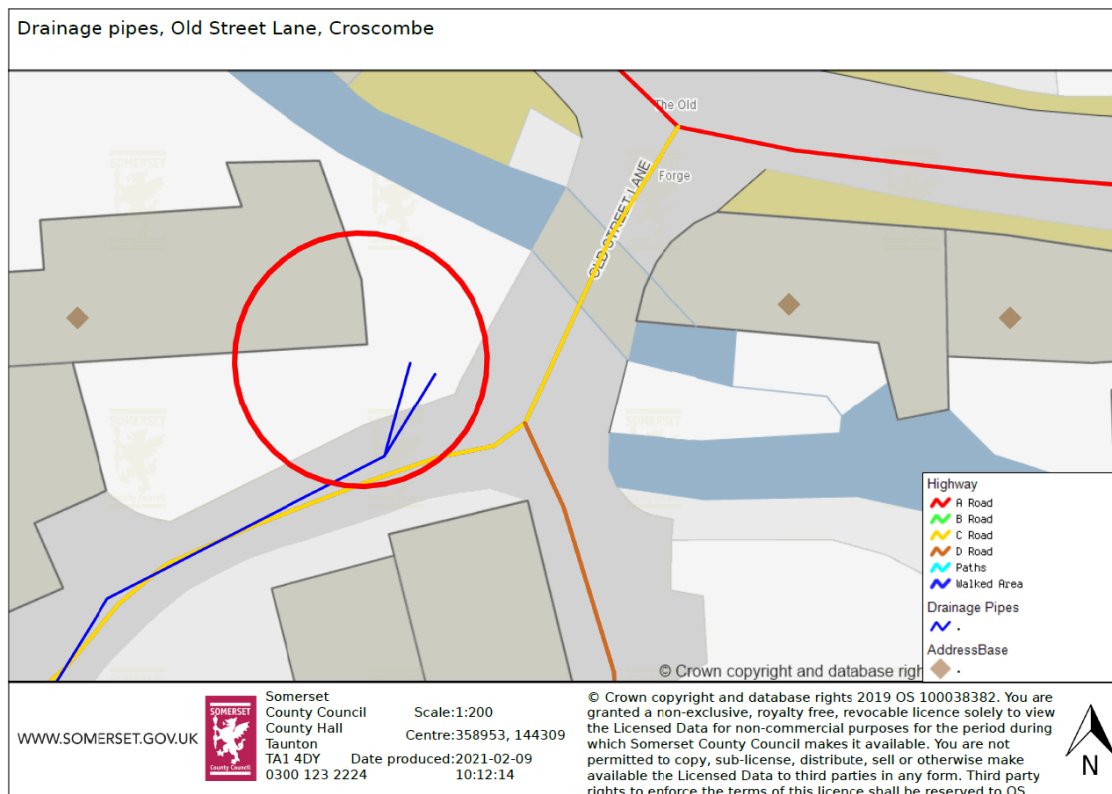


Figure 15 - Jack's Bridge downstream parapet with three spillways



In addition, a highway drain located within Old Street Lane, discharges into the River Sheppey downstream of Jack's Bridge and upstream of Manor House; this collects surface water runoff from Old Street Lane and is illustrated in Figure 15. These pipes were increased in size from 225mm to 300mm diameter 2009/10 on the back of the 2008 flood event.

Figure 16 - Old Street Lane surface water run-off drainage pipe outlets into the River Sheppey at Jack's Bridge.



It is understood from the Manor House property owner that this surface water run-off and the drainage pipes do not impact directly on any flooding to Manor House. The property owner went on to explain that "...these drainage pipes prevent surface water reaching Manor House directly but putting these drainage pipe's upstream of a pinch point i.e. where the River Sheppey narrows in front of Manor House is perhaps exacerbating the problem at Manor House."

The property owner of Manor House went on to suggest that the River Sheppey's bed level at Jack's Bridge as being at least 300mm higher than in 2008 with other residents, community members and CFG members also highlighting the perceived raised bed level. During discussion, this was raised as serious local concern with the belief that dredging the River Sheppey will increase the channel's capacity and aid flow through the village; residents have previously raised this issue with the EA.

River Sheppey – Bed Levels and Dredging

Whilst the concerns of the community are noted, the photograph shown above in Figure 15 indicates the presences of large stones and cobbles forming the bed of the watercourse and these may be considered significantly larger than the carrying capacity of the River Sheppey. As such, significant changes to bed levels may be considered limited however this can be reviewed as part of the forthcoming Sheppey Catchment Study and further information is provide in Section 0.

Alongside this, dredging is often seen as a potential solution in increasing the capacity of watercourse however this is not normally a practicable and cost-effective solution. In the case of the river Sheppey through Croscombe much of the capacity is limited by the various culverts and crossings, and while dredging will provide localised increases in capacity, this will make the culvert restrictions an even greater pinch point. Alongside this, should any additional capacity be provided, this simply conveys water downstream faster potentially increasing flood risk to downstream properties and areas such as Wells.

Internal flooding entered Manor House through the floor of one of the ground floor's rooms, which sits directly above the mill leat flowing under the property and that this area of the property flooded to a depth of 100mm. However, a depth of 380mm was reached elsewhere on the ground floor of the property.

Approximately 70m downstream of Jack's Bridge, the River Sheppey flows into a culvert that is approximately 150m in length adjacent to the A371 Long Street and outfalls outside the property known as Laurel Villa. This culvert was identified by those attending the site walk-over as a potential problem due to blockages.

The Croscombe Flood Committee also suggested that the gully located opposite the village store on Long Street, immediately upstream of the culvert's inlet, experienced surcharging from the River Sheppey, along with water emanating from the junction between the road surface and kerb, as shown in Figure 17. Consequentially, Long Street acted as a conduit for exceedance to flow west along Long Street with the area of flooding stretching from west of The George Inn as far as the public footpath known locally as Elderwell (illustrated in Figure 12).

Figure 17 - Cracks in Long Street from which water was reported to be emanating.



Townsend Farm on Long Street required a sewage clean-up by Wessex Water on the 3rd and 4th October however reactive operational actions were not required for two other internally flood properties initially reported to Wessex Water. Some flood mitigation works were carried out by Wessex Water to reduce infiltration into their sewer system to reduce the risk of internal property flooding from the sewers. Further infiltration lines have been identified and will be filled in as soon as is possible.

Figure 18 - River Sheppey inside bend deposition (A371 Long Street and Fayre Way junction)

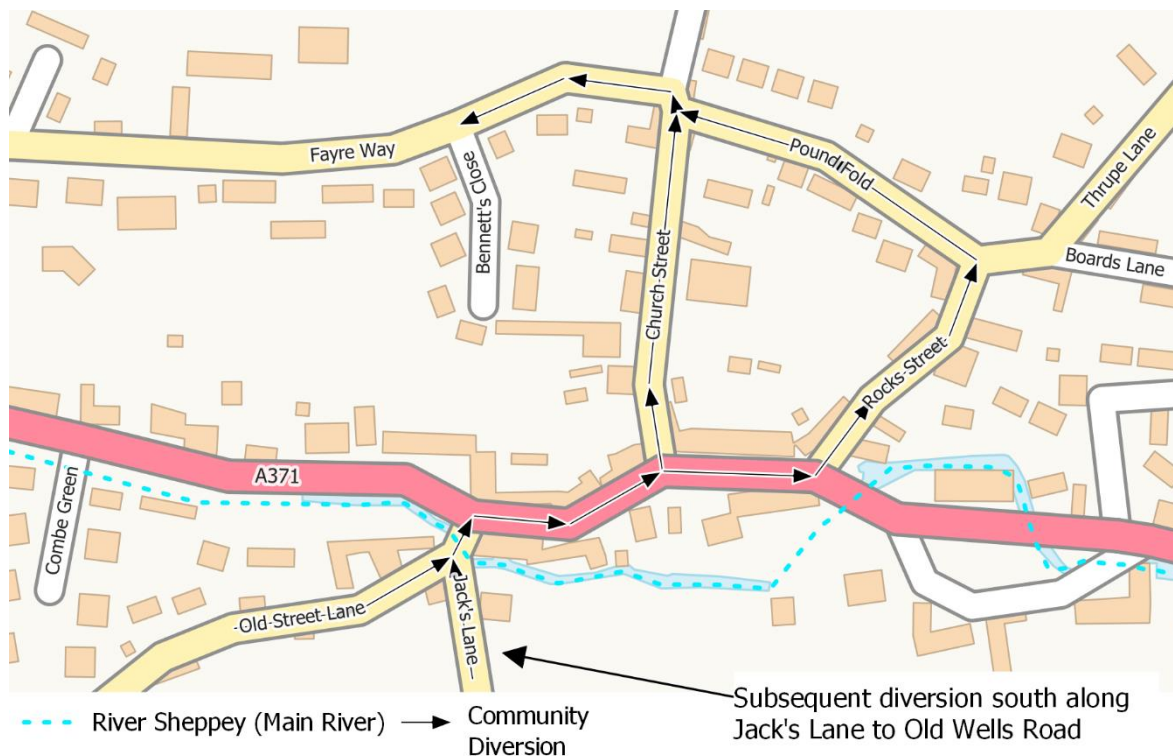


Croscombe Highway Impacts

Jacks Lane, Old Street Lane and Jack's Bridge remained passable during Storm Alex however flooding in Long Street near the George Inn made further travel impassable in the Wells direction, as well as the flood outside the village to the west; the A371 Long Street west of Croscombe was flooded and saw one car being written off. Travel eastwards towards Shepton Mallet was unaffected.

Diversions were set up with traffic from Jack's Bridge diverted east towards Shepton Mallet, then up Church Street or Rock Street to access the west end of the village, as illustrated in figure 19. Initially, this diversion was undertaken by local residents however was revised by Devon and Somerset Fire and Rescue Service where traffic was diverted south along Jacks Lane onto Old Wells Road.

Figure 19 - Temporary diversions due to flooding of the A371 Long Street



Croscombe drinking water service reservoir

Members of the Croscombe community raised the concern of Bristol Water's potable water covered service reservoir which is approximately 400m south of Jack's Bridge and elevated circa 50m above Long Street, Croscombe.

The reservoir is filled with treated drinking water pumped from the wider network, and has an overflow pipe that discharges (when the reservoir is being emptied) into a ditch to the north side of the reservoir and running parallel to the south of Paradise Lane; it is understood from local residents, this ditch directs water to a pond in the northern corner and when this is full, surface water exceedance continues downhill into Jack's Lane and into the River Sheppey.

It is understood from Bristol Water that works have been undertaken to the ditch along Paradise lane including the renewal of two culverted gate crossings and that when the service reservoir was last drained at the end of October, the ditch was directing flows as intended.

Bowlsh Flooding

It is understood 10 properties flooded in Bowlsh and Darshill and the exact nature of the flooding is complex as a result of the historic watercourse infrastructure. However, it may be reasonable to assume the volume of water flowing along the River Sheppey significantly exceeded capacity. Alongside this, reports from

residents indicate sewerage discharges into the River Sheppey given the deposition of sewerage detritus e.g. toilet paper and wet wipes.

To the east of Bowlish, at Bowlish Meadows the river was described as circa 1200mm higher than normal and this resulted in flooding of circa 150mm depth to the detached garden of The Old Sluice House (No. 15 Bowlish) along with the deposition of sewerage detritus, potentially caused by discharges from the upstream sewerage network.

Residents have also reported sewer flooding in Bowlish Lane. This appears to have resulted from pressure in the sewer causing manholes to lift and sewage to spurt out. This process repeated at the manhole outside the Old Sluice House, where there is a pinch point in the sewer network. Pressure in the sewage system would have been added to by the runoff from Pike Hill and the Shaftgate estate going into the main sewer by design. This seems to be a recurring problem, and residents report this happening more than 10 times, and link it to the building of the Shaftgate Estate in the 1960's. It seems reasonable to assume that this is a combined sewer.

In the centre of Bowlish, the historic tributary along Coombe Lane has been culverted and records indicate this culvert is potentially circa 225mm (9") in diameter and therefore may be considered under-capacity. It is understood this culvert surcharged, with the pressure inside causing heaving to the road surface.

Further downstream, it is understood internal property flooding occurred at Ham Mill to a depth of circa 900mm and at Weirside, the flows in the river Sheppey were observed spilling from the weir and down into the culvert underneath the A371, this is shown in Figure 20. Flows subsequently seeped through the culvert walls causing internal flooding to the ground floor of Weirside.

Figure 20 - River Sheppey spilling from the weir at Weirside



Finally, downstream in Darshill, it is understood the volume of water exceeded the normal operation of the Darshill weir structure, a former mill/control structure. This is illustrated in Figure 21 below and it is understood during normal conditions, flows pass through the eastern culvert however during this storm event, all three culvert barrels were utilised.

Figure 21 - Darshill Weir in full flow



Immediately to the north of the weir and culverts, the watercourse bends eastwards 90° and the bank was reinforced with gabion baskets as part of a recent development however concerns have been raised by residents regarding the erosion and stability of this bank; this is shown in Figure 22.

Figure 22 - Darshill Gabion Bank



The system of culverts near Ham Mill, and indeed all along this stretch of the Sheppey, appear to be complex and poorly understood. Responsibility for maintenance and improvement seems to be uncertain. This situation needs to be improved.

Shepton Mallet Flooding⁸

As outlined in Section 0, the River Sheppey flows in westerly direction with long lengths in culvert. Additionally, the Collett Park Stream drains the area to the south and flows northerly, carrying considerable amounts of surface water from the Tadley Acres estate (in the triangle formed by the confluence of the A37 and A371) and the Cannards Grave fields to the SW of Cannards Grave Road (A371). It is then culverted beneath the former HMP Shepton Mallet Prison and Leg Square, ultimately discharging into the River Sheppey between 4 Leg Square and The Old Surgery.

In contrast to the flooding in Croscombe, flooding in Shepton Mallet is understood to be from a combination of surface water and surcharge from manholes, as a result of high-water levels within the culverted River Sheppey and Collett Park Stream with both culverts understood to be beyond capacity. It was reported that there was a “gush of water almost resembling a waterfall” and with the culvert capacity reached, water flowed down Gaol Lane into Leg Square with water surcharging from manholes.”

⁸ Information obtained from a Microsoft Teams Meeting with the Shepton Town Council held on the 14th December 2020, annotated maps, Flood Incident Report forms and description of flood event by Major General (ret'd) R A Pett CBE, MBE, DL received on 22nd January 2021

It is water was observed surcharging from Manhole ref 0750 along the Collett Park Stream culvert along with foul sewer manhole 0700. The locations of these are illustrated in Figure 23 with further photographs provided in Figure 24 and Figure 25.

Figure 23 - Leg Square Drainage Schematic

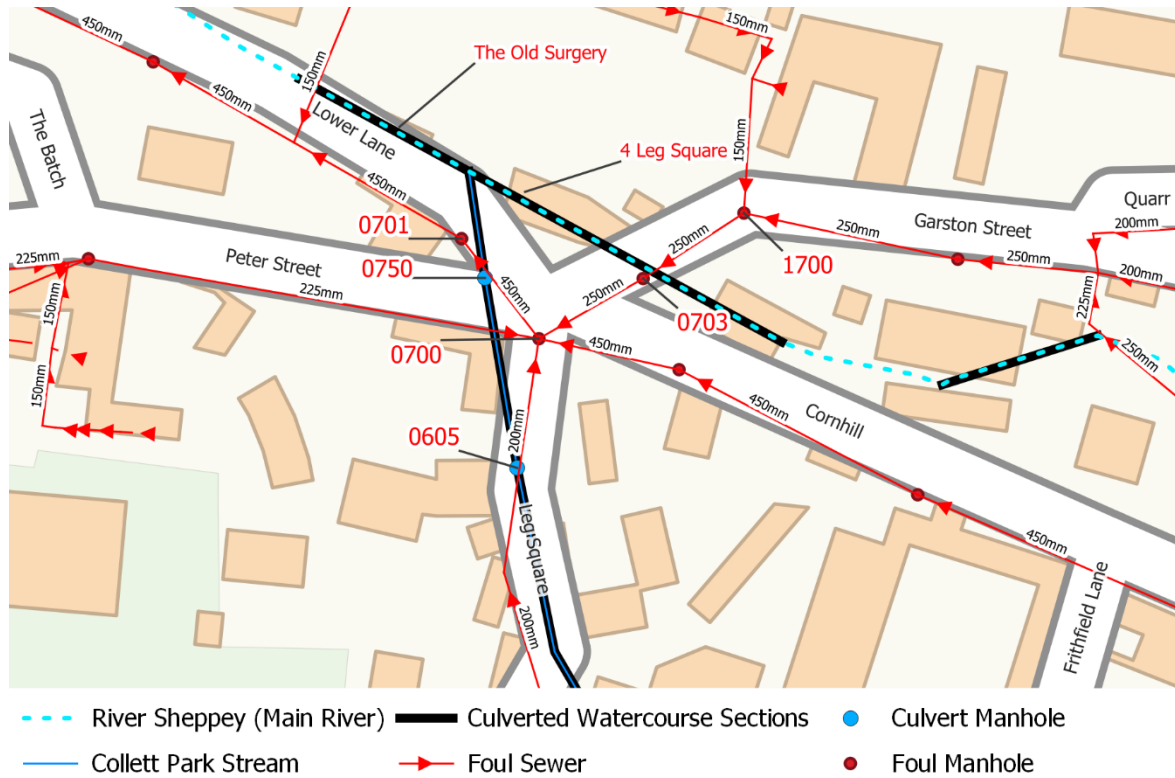


Figure 24 - Surcharging from Collett Park Stream culvert (manhole ref: 0750)



Figure 25 - Flow path from Gaol Lane into Leg Square



Flows along the Gaol Lane / Leg Square link were described as a 'waterfall'

Flows continued down into Leg Square

Consequently, the combination of the surface water flowing from Gaol Lane and the surging manholes contributed to flooding of some properties' gardens, ground floor and basements in the vicinity of Leg Square. The western end of Garston Street was also reported as "completely flooded".

Leg Square was completely flooded and impassable to traffic for several hours and was considered by community members as being dangerous to children on foot and other similarly vulnerable persons e.g. the elderly.

Additionally it was described by the community that “the road surface between The Hollies and The Old Manor House split and was forced upwards to a height of several feet, and the cobblestones across the south side of Leg Square were forced upwards and into the Square itself.”

Cannards Grave Road (A371) was flooded and blocked to traffic on 4th October, well before the engorged stream surged into Collet Park. The park was extensively flooded in the area of the duck pond and well beyond, forming a small lake. The “stream”, in full flood, then surged under Charlton Road (A361) into the grounds of Whitstone School, where it formed another large lake in the school grounds, abutting the wall to the west beside Frithfield Lane, which leads from Charlton Road to the Prison entrance. Water normally flows under Frithfield Lane at that point, into a culvert under the Prison towards Leg Square but, on this occasion, water escaped through numerous gaps in the mortar of the wall, up to a height of one metre.

The Town Council and community expressed that they believe “that the existing infrastructure cannot cope and that it will become worse when the Cannards Grave Road and Prison developments proceed, unless extensive and realistic water management arrangements are put in place first.”

New development and surface water drainage requirements

It should be noted that national and local planning policy requires all new development to not exacerbate flood risk elsewhere and this is typically achieved through limiting the discharge of surface water runoff from a site. Additionally, developments of more than 10 dwellings are required to provide sustainable drainage systems (SuDS) to manage surface water runoff, including provision for the impacts of climate change. This national policy is further strengthened by Mendip District Council’s local planning policy.

To this end, the emerging details for the Cannards Grave Road site include a number of attenuation features to collect surface water runoff in and this is discharged from site at a controlled rate mimicking the existing greenfield discharge rate. The details for the site are not yet finalised with subsequent design and information to be undertaken and agreed through the reserved matters and discharge of conditions stages prior to any construction being undertaken.

One of the recommendations of this report is that requiring stricter standards of developers in regard to surface water runoff be investigated, and implemented if at all possible.

Conclusion and Probable Causes

This Section 19 flood investigation has sought to gain a better understanding of the flooding which occurred in Croscombe, Bowlish and Shepton Mallet on the 3rd and 4th October 2020. The investigation into this flood event has involved a number of organisations and locally supplied information for which Somerset County Council Lead Local Flood Authority is grateful for.

Based on the investigation the following are considered contributory to the cause of the flood event on the 3rd and 4th October 2021.

- The topography of the River Sheppey catchment, with steep valley sides is such that any surface water runoff is directed downhill into the River Sheppey very quickly.
- The River Sheppey is historic in nature with many structures including culverts, mill leats, bifurcations, weirs etc. All these structures affect the capacity of the watercourse in conveying flows.
- Almost continuous rainfall occurred starting on Wednesday 30th September 2020 and culminating on Sunday 4th October. As such, the catchment may be considered to be saturated.
- The rainfall which occurred in the above five-day period was circa 1.2 to 1.4 times the October average rainfall amount. On Sunday 4th October, rainfall was circa 10 to 14 times the October daily average rainfall.
- The flow rates along the River Sheppey were such that the capacity of various structures (particularly culverts) were exceeded leading to flooding in Croscombe, Bowlish and Shepton Mallet.
- The exceeded capacity of the River Sheppey had a follow-on impact to the foul water network with the potential for ingress of flood waters utilising foul sewer capacity, along with the potential discharge from the sewer network.

Next Steps

During the development of this Section 19 flood investigation report, funding has been sought and agreed from the Somerset Rivers Authority (SRA) for a detailed study into the River Sheppey Catchment with this study being led by Mendip District Council.

As recognised within this investigation and through previous assessments, flooding which occurs in the River Sheppey catchment is complex, occurring from multiple sources including rivers, surface water runoff and groundwater. It is understood the Sheppey Catchment Study will draw on previous assessments and may include:

- Review of all existing information and surveys carried out to date;
- Additional investigations and walkover surveys carried out in areas where data is missing, including full CCTV survey of culverted watercourses to review capacity and condition;
- Assessment of flow routes and capacity of the existing open watercourses including assessment of changes in bed levels;
- Identification of flood risk issues and a review of the options to mitigate these;
- Modelling of the catchment, flow pathways and groundwater flow to assess the sensitivity of the system to climate change and any proposed options identified to mitigate risk;
- Assessment of the need for additional measures for reducing blockages and maintenance in the future (i.e. trash screens);
- Consultation with landowners on land management practices and any potential implementation of Natural Flood Management measures (i.e. constraints to delivery of these options);
- Review of any proposed naturalisation of the existing watercourse (de-culverting) including any online wetland areas and tree planting currently identified within the Mendip District Council catchment review;
- Identify ways in which community engagement can be used to improve resilience (education, change in behaviours, accountability and action);
- Costed Action Plans for the delivery of identified mitigation options to inform future funding bids (where required);
- Outline assessment to identify potential funding sources for delivery using the Partnership Funding approach.

Alongside the Sheppey Catchment Study undertaken by Mendip District Council outlined above, there are a number of potential actions which can be undertaken following the October 2020 flood event. The Lead Local Flood Authority will monitor the delivery of these actions with the relevant risk management authorities. Mendip

District Council have an excellent set up updates on their parts of the work at: [MENDIP FLOOD RISK MANAGEMENT PROGRAMME \(arcgis.com\)](https://arcgis.com).

1. Review of Property Flood Resilience Environment Agency

A number of properties, particularly in Croscombe, with previously installed Property Flood Resilience (PFR) measures experienced internal property flooding. These should be reviewed to determine the performance of such measures and if any remedial actions are needed.

2. Highways gully cleansing and road maintenance SCC Highways

A number of issues were reported with the gullies across this investigation area including blocked gullies in the vicinity of Saddlers, Croscombe. Reactive gully cleansing is required to identify and clear these gullies and ensure a pro-active approach to maintenance is undertaken.

Increased collaboration with Croscombe Flood Committee and Shepton Mallet Town Council could be utilised to ensure that the timings of maintenance / cleaning activities are such that they are able to attend to, and clear, as many highway gullies as possible. Parked cars may be an obstacle for this action.

3. Targeted CCTV survey of drainage and watercourse structures SCC LLFA

As noted above, some surveying may be undertaken by Mendip District Council as part of the Sheppey Catchment Study. However, where not required by MDC, additional survey should be undertaken for the LLFA's asset records and for the consideration of improvements. This survey could focus on the following:

- Old Street Lane highway drainage discharging into the River Sheppey in the vicinity of the Manor House, downstream of Jack's Bridge.⁹
- River Sheppey through Bowlish, in particularly the weirs and culverts in the vicinity of the Horseshoe Inn and Ham Mill / Weirside.
- The River Sheppey and the Collett Park Stream in the vicinity of Leg Square and, if possible, under the prison, Shepton Mallet.

Further survey locations may be determined in time. Areas where damage is found should be programmed in for repair works, in partnership with landowners and other stakeholders.

Mendip District Council organised surveys which look place over February and March 2022. These included the Coombe Lane Culvert, Little Brooks Lane, Collett Park and Whitstone School. Further surveys in harder-to-access sites will take place later in 2022. Planned surveys are visible here; [River Sheppey Communities Flood Resilience Project | MENDIP FLOOD RISK MANAGEMENT PROGRAMME \(arcgis.com\)](https://arcgis.com).

The surveys identified some locations where repair works are required. This work will be progressed as soon as possible with the proper authorities.

4. Weirs and culverts in selected areas to be mapped LLFA

⁹ The report to Croscombe Parish Council about the flood of 21/11/2016 has some valuable observations about the operation of the drainage system in this area, and proposals for upgrades.

Following on from the CCTV survey, the locations of conditions of all weirs and culverts in selected areas to be mapped, pinch points and trouble spots identified, and responsibility and opportunity for maintenance and upgrade of each stretch to be established. This to include Bowlsh (especially around Ham Mill), in Croscombe, particularly around Jacks Bridge and Millrace.

5. Review of sewer infiltration Wessex Water

During a flood event, with elevated water levels, there is the potential for groundwater to infiltrate into the sewer network, thereby utilising sewer capacity. Some works has already been undertaken by Wessex Water to locate and re-line sewers minimising the potential for ingress of water, this work should continue.

6. Review combined sewers Wessex Water

During a flood event, surface water running into sewers by design causes build up of pressure in the system and surcharging. Existing combined sewers in places where sewer flooding has been reported (such as those at Pike Hill and the Shaftsgate estate, running down Bowlsh Lane) to be reviewed to see if this surface water input can be diverted or attenuated.

7. Explore the use of a 'Critical Drainage Area' SCC LLFA & Environment Agency

A Critical Drainage Area (CDA) is an area defined by the Environment Agency and notified to the Local Planning Authority (LPA) where critical drainage problems are known to occur. Within these areas, surface water management as regards new developments is held to a higher standard to achieve flood risk management benefits.

8. Improve local flood forecasting Environment Agency

A 'flood alert' was issued at 10:21am on Saturday 3rd October and this outlines that flooding is possible however no higher 'flood warning' i.e. that flooding is expected was issued. A review should be undertaken to improve forecasting in the catchment with the aim to improve flood alerts and warnings in order to provide sufficient notice for residents.

9. Explore updates to local planning policy SCC LLFA & MDC

In order for the Local Authority to require any stricter standards to be applied (such as accounting for events at greater than 1 in 100 years return period, or requiring runoff at less than greenfield rates), this needs to be stated in local planning policy. It is recommended that further work be undertaken with a view to requiring stricter standards to be applied to surface water management by developers in affected areas around the River Sheppey.

10. Support local residents in preparing for floods SCC LLFA & community

Review the local community response to the flooding and support the development of community resilience through Shepton Mallet Town Council, Croscombe Flood Committee, Parish Councils and other interested bodies. LLFA, Somerset Rivers

Authority, Civil Contingencies Unit and the EA to work with the community to review and where necessary develop the local flood plan in the context of any lessons from this event. Residents have stated a particular interest in information on funding for community mitigation projects and education for communities.

11. Maintain partnership working partners All

All partners to maintain regular contact and periodic meetings to keep one another and the public informed of the progress of the above actions, and facilitate co-operation between different authorities.

12. Education on riparian rights and responsibilities SRT

There seems to be a lack of knowledge amongst the public about the rights and responsibilities of riparian owners. Work to be undertaken to educate landowners and the public on these matters.

13. Residents have expressed a desire for further hydrological information about flooding in Croscombe.

The first request was for a rain gauge to be installed. This is something that could be discussed initially within the Croscombe Flooding Committee, perhaps with LLFA, EA or SRA support. They need to consider what data they want to collect, and what they want to do/ want done with it. Ideally the gauge would be situated on the land of/looked after by a local volunteer.

The second request was for an analysis of rainfall for each flood event, with a view to establishing where the community is most vulnerable. SRA to discuss this with CFC with a view to scoping, costing and prioritising this work.

Rights & Responsibilities

It should be noted that everyone has a responsibility for flood risk management including formal Risk Management Authorities (RMAs) and informal stakeholders including community groups and local residents. The following should be noted in relation to responsibilities.

Somerset County Council Lead Local Flood Authority

In accordance with the Flood & Water Management Act 2010 upon becoming aware of a flood event the Lead Local Flood Authority must, to the extent that it considers it necessary or appropriate, carry out an investigation and publish the results notifying any relevant risk management authorities of its findings.

In particular the LLFA have responsibility for ordinary watercourses, and surface water and ground water flooding. Under the Land Drainage Act 1991 SCC have permissive powers to require works for the removal of obstructions to maintain the flow of any ordinary watercourse.

Environment Agency

The Environment Agency maintains overarching flood risk responsibilities, including improvement or construction work on Main Rivers. Main Rivers are defined by Defra and are shown on the Flood Map for Planning; as pertains to this study the River Sheppey is classified as Main River from just upstream of Shepton Mallet. A main river is defined as a watercourse marked as such on a main river map, and can include any structure or appliance for controlling or regulating the flow of water in, into or out of a main river.

Riparian Owner's Responsibilities

Under common law landowners are the riparian owner of any watercourse within or adjacent to the boundary of their property. Where a watercourse is sited between properties each owner may be equally responsible.

Riparian owners' responsibilities include the maintenance of the bank and bed of their section of watercourse to prevent any obstruction to the flow in the watercourse. Common issues include allowing vegetation to become overgrown or undertaking other work that may affect the watercourse. Riparian owners also have ultimate responsibility to protect themselves and their property from flooding.

Issues with this matter should, in the first instance, be reported to the Lead Local Flood Authority.

Highway Authority

Somerset County Council, as Highway Authority, is responsible for maintaining the highway. Highway drainage is designed to manage the rainfall upon the highway. These systems are not designed to manage excessive run-off from third-party land or from watercourses. The highway drainage is maintained in accordance with risk management principles.

Landowners and residents

Options to further address this flood risk will be considered as detailed above, however it should be recognised that homeowners have an important responsibility in protecting their properties.

It is recommended that residents consider developing a Flood Action Plan for their property and community to mitigate the impacts and reduce the time taken to recover should further flooding occur.

In addition it is recommended that homeowners consider steps that can be taken to protect their homes and that they are offered advice on property flood resilience products, suppliers and potential sources of supplementary funding.

Limitations

The statutory requirement for the LLFA (SCC's Flood Team) to produce a Section 19 Flood Investigation Report are to investigate the following:

Events leading up to the flooding

Numbers of properties flooded

Which RMAs have flood risk management functions in respect of the flooding (as listed above)

Whether each of those authorities has exercised or is proposing to exercise those functions in response to the flood

The inclusion of a detailed narrative of the flood event, rainfall data and probable causes as laid out above are not statutory requirements for inclusion in a s.19 Flood Investigation Report, nor are they a detailed scientific analysis. Caution should therefore be used when relying on the analysis undertaken within this assessment.

Rather, SCC LLFA endeavour to produce s.19 reports that provide as much evidence, information, and data to inform the community, and support bids for funding of future comprehensive studies that may better interpret the information and data to and for the benefit of communities and enable all RMAs to further exercise their functions.

Appendices

Appendix A – Acronyms and Glossary

CCU	Civil Contingencies Unit
CDA	Critical Drainage Area (see below)
EA	Environment Agency
FRM	Flood Risk Management
FWMA	Flood and Water Management Act 2010
DB	Internal Drainage Board
LDA	Land Drainage Act 1991
LFRMS	Local Flood Risk Management Strategy (see below)
LLFA	Lead Local Flood Authority (see below)
MDC	Mendip District Council
PFR	Property Flood Resilience (see below)
RMA	Risk Management Authority (see Appendix B)
SCC	Somerset County Council
WW	Wessex Water (Water and Sewerage Company)
Catchment	The area that serves a watercourse with rainwater.
Climate Change	A long term change in weather patterns, in the context of flood risk, climate change will likely produce more frequent severe rainfall
Critical Drainage Area	An area located within Flood Zone 1 and designated by the Environment Agency where critical drainage problems are known to occur
Defence	A structure that is used to reduce the probability or impact of flood water on a particular area.

Exceedance flow	The flow of water that occurs on the surface once the capacity of the underground drainage system design standard is compromised.
Flood	The temporary covering by water of land not normally covered with water
Fluvial flooding	Flooding caused by rivers
Local Flood Risk Management Strategy	Somerset's flood risk management strategy for surface water, groundwater and ordinary watercourses, published February 2014; sometimes shortened to Local Strategy
Lead Local Flood Authority	The Flood and Water Management Act 2010 identified Somerset County Council as the Lead Local Flood Authority for the county of Somerset. This gives the county council a strategic role in overseeing the management of local flood risk and with a number of duties and powers.
Main River	A watercourse defined by Defra and shown as such on the Flood Map for Planning. The Environment Agency has flood risk management responsibilities and powers for Main Rivers
Property Flood Resilience (sometimes also referred to as Property Level Protection)	These are measures which can mitigate the impact of flooding on properties either by increasing the resistance of a building to flooding or by increasing its resilience by speeding up the time taken to recover after a flood. Examples include flood barriers, flood resistant doors, non-return valves on pipes, etc. Further information can be found on the Blue Pages of the National Flood Forum: http://bluepages.org.uk/ .
Ordinary watercourse	A river, stream, ditch, cut, sluice, dyke or non-public sewer that is not a designated Main River, and for which the local authority has flood risk management responsibilities and powers.
Return period	Also known as recurrence interval. An estimate of the likelihood and severity of flooding. It is based on the statistical analysis of data to provide a probability that an event of any given magnitude will occur in any given year. This may be expressed in years (eg. 1 in 100) or

	as a percentage (1%) chance of occurrence in a given year.
Riparian owner	Under common law landowners are the riparian owner of any watercourse within or adjacent to the boundary of their property. Where a watercourse is sited between properties each owner may be equally responsible. Riparian owners' (landowners whose land is crossed or bordered by a watercourse) responsibilities include the maintenance of the bank and bed of their section of watercourse to prevent any obstruction to the flow in the watercourse.
Surface water flooding (pluvial flooding)	Surface runoff flooding is caused by rainfall and is that flooding which occurs due to water ponding on, or flowing over, the surface before it reaches a drain or watercourse.
Section 19, S19	Section 19 of the Flood and Water Management Act that places a duty on LLFAs to investigate flooding as it deems necessary and appropriate. The decision whether or not to investigate a flood is at the discretion of the Lead Local Flood Authority and the extent of the investigation will be adjusted to reflect the clarity of the responsible authority, the significance of the incident and the resources available.

Appendix B - Risk Management Authority Responsibilities

There are a number of key organisations who together manage flood and coastal erosion risks in Somerset and are defined as risk management authorities in the Flood and Water Management Act. A 'Risk Management Authority (RMA)' means:

- a) the Environment Agency (EA),
- b) a lead local flood authority (county council),
- c) a district council for an area for which there is no unitary authority,
- d) an internal drainage board,
- e) a water company, and;
- f) a highway authority.

Each RMA has its own defined areas of responsibility, including for particular sources of flooding as shown in Table 3.

Table 3 - Risk Management Authorities and their responsibilities for managing flood risk

Flood Source	Environment Agency	SCC LLFA	Mendip District Council	Wessex Water	SCC Highway Authority
Rivers:					
Main river	X				
Ordinary watercourse		X	X		
Surface Runoff:					
Surface water		X			
Surface water originating on the highway					X
Other:					
Sewer flooding				X	
The Sea	X				
Groundwater		X			
Reservoirs	X				

Full details of the roles and responsibilities of the risk management authorities in Somerset and how they work together can be found in the appendices of our Local Strategy for Flood Risk Management: <http://www.somerset.gov.uk/policies-and-plans/strategies/flood-and-water-management/>.

Appendix C - Useful contacts and links

Flood Risk Management – Somerset County Council

Telephone: 0300 123 2224 (8am to 6pm Monday to Friday)

Email: Flooding@somerset.gov.uk

Website: www.somerset.gov.uk/floodrisk

Environment Agency

Telephone: 03708 506 506 (Monday to Friday 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/environment-agency.

Incident hotline: 0800 80 70 60 (24 hours)

Floodline: 0345 988 1188 (24 hours)

For details of flood warnings please visit:

<https://flood-warning-information.service.gov.uk/warnings>.

Area Highways Office – Somerset County Council

Telephone: 0300 123 2224 (8am to 6pm Monday to Friday)

Email: countyroads-southsom@somerset.gov.uk

Roads and Transport:

<http://www.somerset.gov.uk/roads-parking-and-transport/highway-area-offices/>

Travel Somerset: <https://www.travelsomerset.co.uk/>.

Civil Contingencies and Community Resilience

Somerset Direct number - 0300 123 2224.

Somerset prepared: <http://www.somersetprepared.org.uk/>

Somerset County Council

Telephone: 0300 123 2224 (8am to 6pm Monday to Friday)

Email: generalenquiries@somerset.gov.uk

Version History

Rev	Date	Details	Author	Checked by	Approved by
			Engineer	Service Manager	Strategic Manager
1	May 2021	Draft for comment	A. Lambart & C. Brammeier		
2	June 2021	Updated following meeting with RMAs	C. Brammeier		
3	July 2021	Draft public issue for comment	C. Brammeier	H. Smith	J. Doyle
4	March 2024	Reformatted to new council standard	Anna Meares		