

# Ashton Hayes Main Report Details

Project:	Storm Christoph Section 19 Main Report		
Area:	Ashton Hayes		
Date:	27/06/22	Project No.:	5150735

## Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Draft for RMA Comment	TS	SF	EJG	EJG	27/06/22
2.0	Draft for Final Approval	TS	SF	EJG	EJG	01/09/22
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## Client signoff

Client	Cheshire West and Chester Council
Project	Storm Christoph Section 19 Main Report
Project No.	5150735
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# Ashton Hayes Main Report Details

This Ashton Hayes specific Main Report should be read in conjunction with the Section 19 Flood Investigation – Main Report (January 2021 Storm Christoph Flooding Event).

## 1. Background

Ashton Hayes is a small village in Cheshire approximately 6 miles east of Chester. Gongar Brook, classified as a main river, feeds into a culvert which passes through an area known locally as The Meadows and along Gongar Lane. This culvert has historically been reported as the source of flooding in the area. The culvert passes beneath multiple roads and residential gardens, there are many tight bends in the system.

Reportedly, properties on Peel Crescent, Peel Hall Lane, Pentre Lane, Gongar Lane and Pentre Close experienced flooding.

Areas of the village are within the Environment Agency (EA) Flood Zone 2 and some areas are within Flood Zone 3; these areas include properties affected by Storm Christoph in January 2021.

A number of properties in Ashton Hayes are of high risk of surface water flooding, included those that were affected by Storm Christoph in January 2021. For further details of the areas at risk refer to Appendix I.

## 2. Flood Review

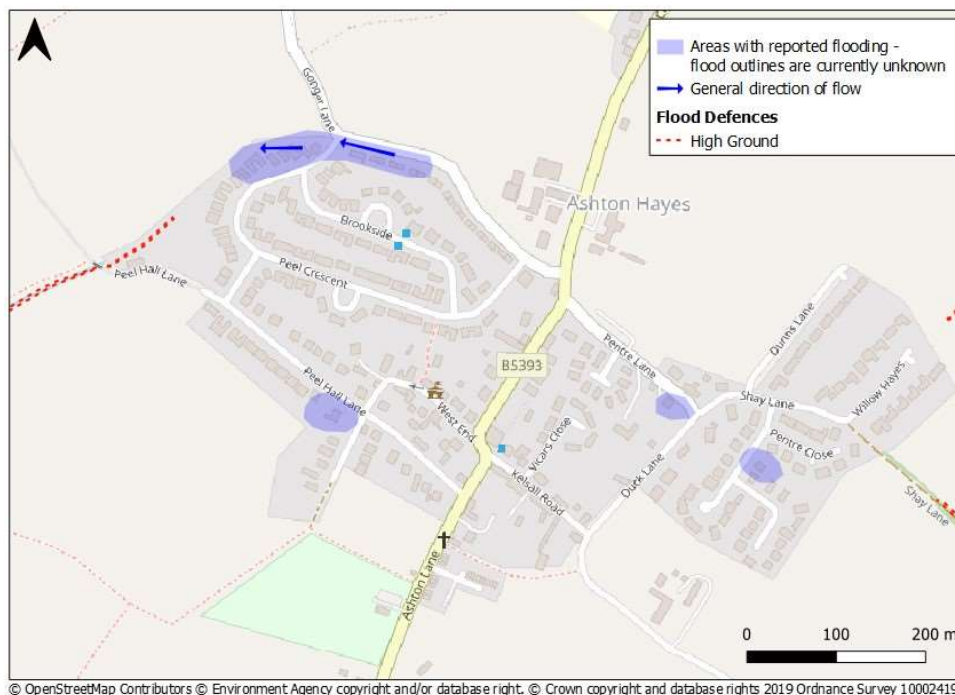
Flooding occurred on The Meadows, Pentre Lane, Shay Lane and Gongar Lane due to the significant volume of water flowing through the open and culverted sections of the drainage network, surface water flooding and the large volume of overland flow on Shay Lane from the high ground to the east of the village. Collectively, this water caused multiple properties to be flooded, resulting in their evacuation, and a car to be written off. There were reports of open land drains overtopping at the junction between Kelsall Road and Duck Lane and between the Kelsall bypass and Old Hall Court, flooding from the latter drains caused damage to a local wall. This water ultimately ended up on Pentre Lane before flowing to The Meadows and Peel Crescent.

The cause of flooding at Peel Hall Lane is unknown, there are no reports of flood flow from culverted or open watercourses at this location and it is likely that this flooding was caused by excess surface water unable to enter the drainage system.

Residents reported that:

- Water levels at The Meadows (on Gongar Lane) rose rapidly, rising to 1.3m depth in places. This was as a direct result of the excess water from the surcharged culvert in addition to significant overland flow from Shay Lane, Pentre Lane and Church Road.
- Properties at Peel Crescent were flooded from the excess water flowing overland from The Meadows and Gongar Lane.
- They had concerns regarding the maintenance of the highway and wider drainage networks in the area.
- Emergency access was restricted to The Meadows and Peel Crescent. They also raised safety concerns of standing water within front gardens.
- Water escaped from manholes on The Meadows and Peel Crescent although no photographic evidence is available.
- The culvert on Shay Lane surcharged, causing a significant volume of overland flow.

Figure 1 below shows details of the flooding, developed in consultation with Cheshire West and Chester Council (CWaC), as Lead Local Flood Authority (LLFA), and affected property owners.



**Figure 1 - Flood overview**

Figure 2 below shows the extent of flooding outside The Meadows at approximately 15:00 on January 21st, 2021. This shows the raised water level on the street and the growing threat to property.



**Figure 2 – Flooding Outside a Property at The Meadows**

## 2.1. Area Summary

Key statistics of the Storm Christoph Flooding in Ashton Hayes are summarised in Table 1. A detailed timeline of the flood event can be found in Appendix II.

**Table 1 - Flood Impact Summary**

Residential properties affected:	Commercial premises affected:	Number of properties evacuated:	Number of properties flooded:	Number of domestic properties flooded:	Number of commercial premises flooded:	Comment
12	0	3	12 (5 affected properties do not want to be identified)	12 (5 affected properties do not want to be identified)	0	As reported to CWaC prior to publishing

Table 2 below provides a summary of the flood event, impact and response in Ashton Hayes.

**Table 2 - Flood Impact Summary**

Farndon	
Date	<ul style="list-style-type: none"> <li>20<sup>th</sup> January 2021</li> </ul>
Affected Roads	<ul style="list-style-type: none"> <li>Gongar Lane (the Meadows), Peel Crescent, Pentre Lane, Shay Lane, Duck Lane, Pentre Close, Peel Hall Lane.</li> </ul>
Flood Alert / warning issued?	<ul style="list-style-type: none"> <li>The area is not covered by a Flood Warning or Flood Alert</li> </ul>
Flooding Impacts and Observations	<ul style="list-style-type: none"> <li>Property damage</li> <li>Highways flooded affecting access</li> <li>Risk to life</li> <li>Additional stress and mental anguish on the community over such an event happening again</li> </ul>
Summary of Flooding Incident Response During Event	<ul style="list-style-type: none"> <li>Property owners do what they can to protect their own properties</li> </ul>

## 3. Flooding Mechanisms

### 3.1. Fluvial Flooding

Flow within the open channel section of Gongar Brook overwhelmed the intake of the Gongar Brook culvert resulting in overland flow on Shay Lane, ponding in Shay Lane before flowing to Pentre Lane, across Church Road and then down Gongar Lane. This overland flow was a result of the Gongar Brook culvert, and intake structure, being unable to take all the flow from Gongar Brook.

### 3.2. CWaC Highways Drains

The highway drains in the area of Peel Crescent and Gongar Lane became surcharged, unable to cope with the volume of water entering the system, causing water to spill out onto the highway.

### 3.3. UU Surface and Foul Water Sewers

There were no reported incidents to United Utilities (UU) of water escaping their drainage assets during the event. Contact was initially made to UU regarding the flooding on Peel Crescent but it is reported by UU that this was later cancelled. Residents reported foul water present during the flood water, it has not been verified whether this was a result of capacity issues within the UU system or as direct result of surface water flow entering and surcharging the UU system flushing foul water out.

### 3.4. Summary

Flooding occurred because of out of bank flow from Gongar Brook, principally from capacity issues of the culvert and the inlet structure, in combination with significant overland flow consisting of surface water and run off from surrounding higher ground.

## 4. RMA Response

This section outlines the RMA) response to the flood event at Ashton Hayes. Consultations have been undertaken with the participating RMAs and residents.

The following responses occurred:

- The EA attended site on the 2<sup>nd</sup> February 2022 to assess the cause and impact of the flooding from Gongar Brook.
- CWaC cleansed and mapped the surface water system from the head wall on Shay Lane through to the outfall on Peel Hall Lane; large quantities of rubble/silt were removed from the system. Root ingress was removed from other sections of the system as was a blockage on Church Road. CWaC provided this information to the Parish Council.
- CWaC have programmed work to the surface water drainage system on Shay Lane. This will include the replacement of a gully, removal of silt build up from the surface water inlet structure and expose a buried chamber to enable the survey of a 300mm pipe not yet traced.
- CWaC have started a pilot scheme with the University of Chester to install a series of sensors in key chambers as Gongar Brook makes its way through the village. These sensors will hopefully be able to provide a warning that water levels are rising in the piped network.
- UU have confirmed to the Ashton Hayes and Horton-cum-Peel Parish Council that they have identified the following programme of works to mitigate the risk of foul water flooding occurring from surcharge or failure of their combined drainage system:
  1. Undertake a review of the condition of the pumping station. This has been completed and UU and have confirmed that the pumps contained within are in good working order.
  2. Undertake an inspection of the downstream pipework to assess condition and signs of blockage.
  3. Inspect the condition of the wastewater sump internal to the pumping station.
  4. Remove vegetation from the open channel upstream of the pumping station, the section they are responsible for, to maintain capacity and unobstructed flow to the pumping station.

## 5. Recommended Actions

The LLFA role is to coordinate the management of flood risk within their administrative area. It is suggested that the recommendations made within this report are taken on board by the relevant RMAs and reviewed on a regular basis.

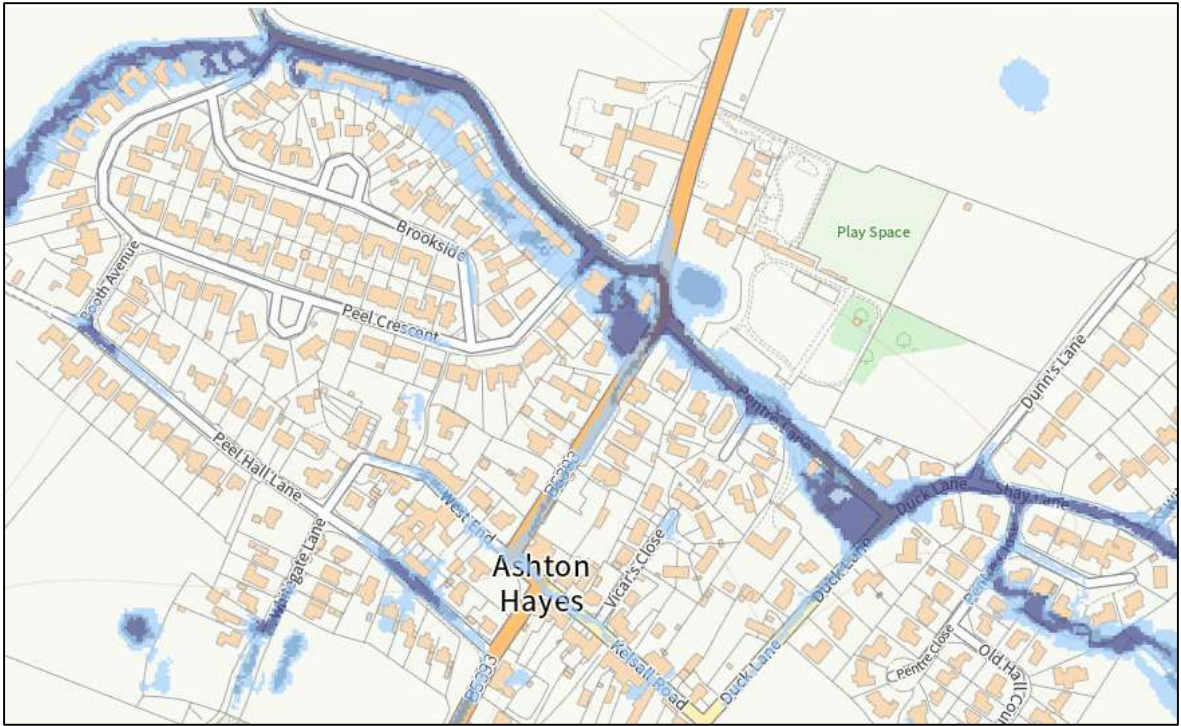
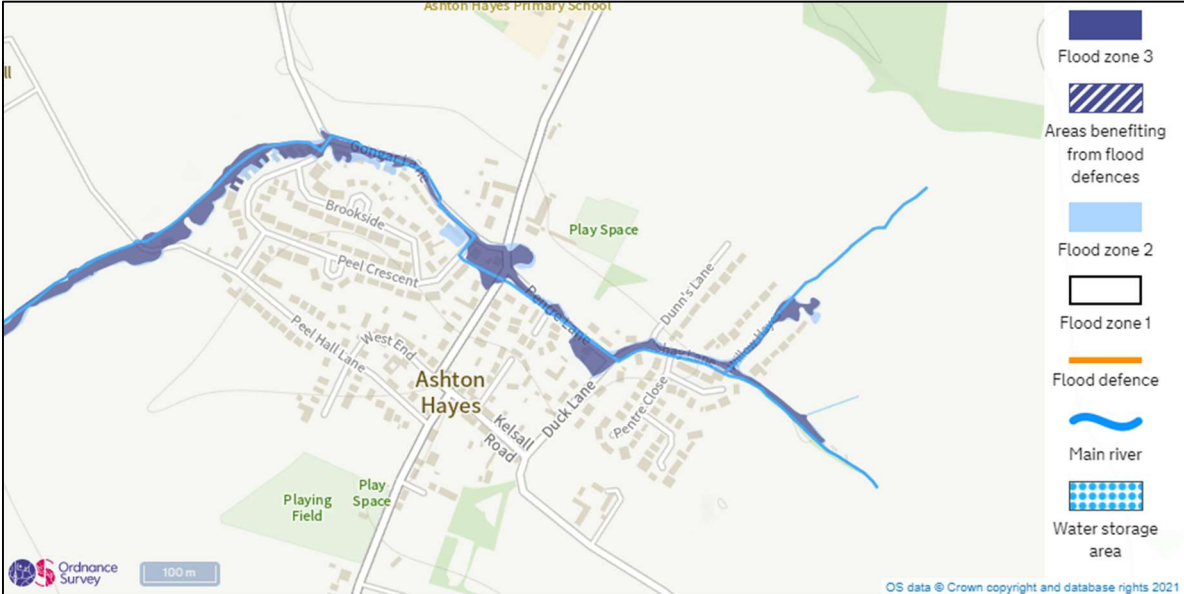
If, following a review of this Flood Investigation Report and its recommendations, and liaison with RMAs, flood risk is considered unacceptable, CWaC should investigate, alongside the RMAs, potential capital schemes which could provide flood alleviation within these areas.

This Section 19 report recommends the following actions be taken:

- CWaC, as LLFA, to work collaboratively with the EA to ensure riparian landowners maintain drainage channels and ensure assets, such as culvert inlets, are kept clear of vegetation and in good state of repair.
- CWaC, as LLFA, to work with the EA to explore whether there are any opportunities to use national floodplain management approaches on Gongar Brook to reduce peak flows.
- CWaC, as LLFA, to develop an emergency access plan to manage safe access and egress to properties during flood event.
- CWaC, as LLFA, to improve community resilience by:

1. Reviewing how the LLFA disseminates information to promote an increased awareness of personal flood action plans, to increase wider community engagement with the RMAs.
  2. Review sandbag delivery process regarding timings and quantity to ensure potentially affected residents likely to need them have appropriate supplies.
  3. Increasing community engagement through open events in promoting awareness of flooding and individual action plans and, raising awareness of individual property protection measures that could be installed and deployed.
- Property level protection and resilience measures: As a quick win, residents should consider implementing property level protection where necessary.
  - Ensure Gongar Brook and drainage ditches are well maintained including vegetation clearance and desilting where required.
  - Ensure all future new development and re-development in upstream areas do not increase runoff through the adoption of SUDs type approaches.
  - Undertake an assessment to identify whether there are viable options to adopt natural flood plain management approaches in upstream areas to hold back water and slow down rates of run off.
  - Assess whether an increase in capacity of the Gongar Brook culvert would reduce flood risk and if so, assess whether it is economically viable to undertake these works.
  - Consider actions to reduce the risk of foul water interacting with fluvial or surface water.
  - UU complete the programme of works that was presented to the Ashton Hayes and Horton-Cum-Peel Parish Council.

# Appendix I – Maps



Extent of flooding from surface water



## Appendix II – Timeline

Time	Ashton Hayes
20 <sup>th</sup> Jan 14:00 – 14:30	Rapidly rising water levels outside of properties at Gongar Lane
20 <sup>th</sup> Jan 15:00	Water continuing to rise and drains could no longer take any more water away, causing water to build up and begin to enter nearby properties
20 <sup>th</sup> Jan 15:45	Deep water enters properties around Peel Crescent and evacuations are required from upstairs windows