

# Tattenhall Interim Report Details

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Area:	Tattenhall				
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## Document history

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## Client signoff

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# Tattenhall Interim Report

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

## 1. Background

Tattenhall is a village southeast of Chester. Mill Brook, classified as a main river, runs south to north through the village. To the south of the village centre, and Old Mill Place, Mill Brook runs into a mill pond then is culverted under the High Street before flowing north. There are numerous water related assets in the area including a Welsh Water combined sewer, road drainage, private drainage in Old Mill Place and a historic mill race culvert.

An historic borehole is located within the Old Mill Place car park, this borehole was previously used by Refresco to abstract water for drinks manufacturing and abstraction stopped 5 years ago. Members of the local community believe that since abstraction ceased the water table has risen, contributing to increased risk of flooding. CWaC, in their role as LLFA, are undertaking additional investigations into the borehole and consequences of no longer abstracting water.

Water drainage from Old Mill Place was historically an open watercourse (the millstream). With the construction of Breen Close in the 1990s the stream was partially culverted. The ancient brick and stone-lined mill race from the mill pond runs under Old Mill Place.

Surface drainage from Flacca developments feeds water directly into Mill Brook just downstream of the Mill Pond dam. The development includes a large tarmac carpark, office buildings and retirement apartments.

Mill Brook, downstream of the High Street, runs in an open channel before entering twin 1.2m diameter pipes for approximately 20m under Newall Close. Thereafter, the brook runs in another deep open channel before entering a closed drain and weir behind Breen Close.

Local knowledge indicates that Old Mill Place has been flooded many times since the 1960's. There have been new developments in the 1990's adjacent to Mill Brook and at Newall and Breen. In 2000, 18 properties including the Old Mill and Old Mill Place were flooded to a depth of 1m. A storm drain was then constructed in Mill Field to take overflow from Mill Brook.

Many of the properties affected during the Storm Christoph event are located within Flood Zone 2 and 3, and some are within the High-Risk Surface Water Flood Zone (Appendix I).

### 1.1. The Tattenhall Flood Management Scheme

Tattenhall is one of the locations within DEFRA's Flood Defence Grant in Aid (FDGiA) Catchment Scale programme. This local scheme is being delivered by the Environment Agency (EA) in partnership with the LLFA, environment delivery bodies and Nature Course.

It is a habitat creation scheme, which uses natural flood management (NFM) techniques along 230m of Mill Brook upstream of Tattenhall. Phase 1 was constructed in 2016. This involved the creation of 1.5ha of habitats (reedbed and wet grassland) designed to increase floodwater storage upstream (300m<sup>3</sup>) and slow the flow of Mill Brook to reduce flood risk in Tattenhall, as well as delivering ecological benefits.

Phase 2 of the scheme was constructed in 2021, after Storm Christoph. This phase created 4,500m<sup>3</sup> of upstream floodwater storage, and several runoff attenuation features (RAF's) to slow the flow of Mill Brook, and habitat creation and restoration.

## 2. Flood Review

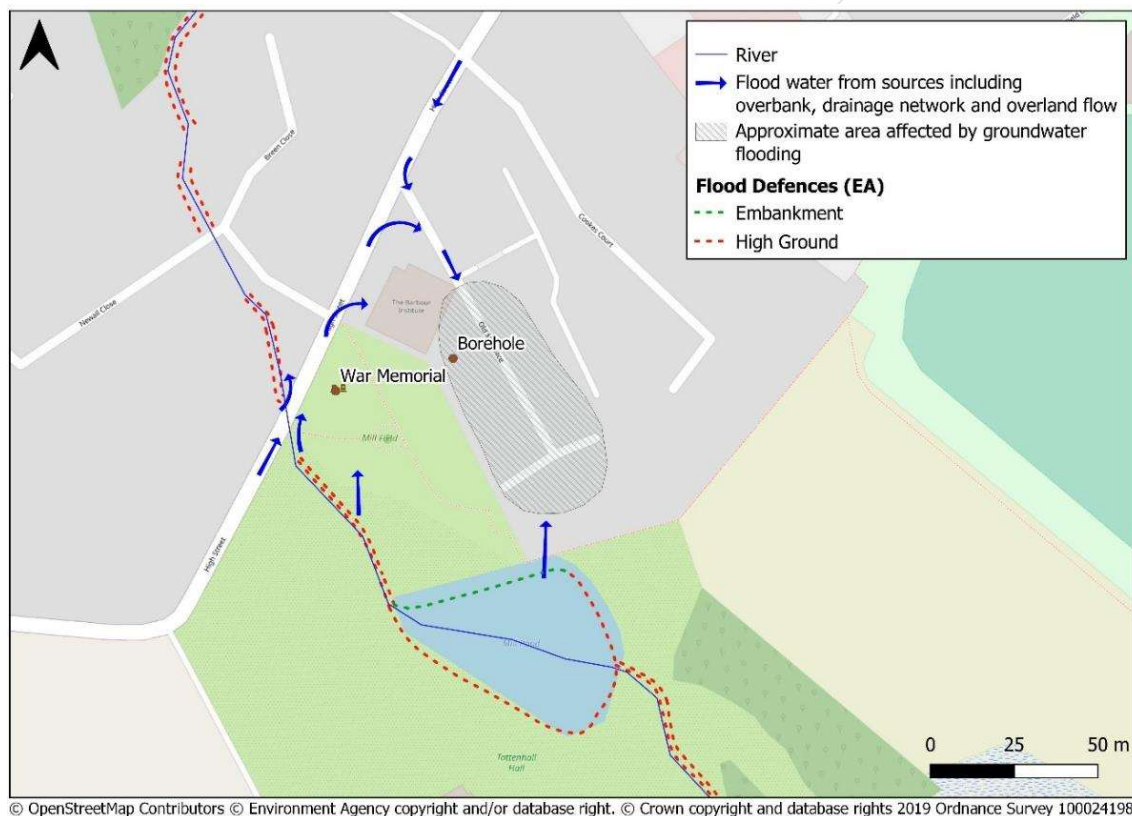
The High Street at the entrance to Old Mill Place is a low point for the road as well as for the surface and foul water drainage systems. During Storm Christoph, large volumes of water entered from both directions of the High Street into this low area. It was also reported that water overtopped the Mill Pond and ran into Old Mill Place in the South East corner. Residents reported water surcharging from the drainage network and coming up from the ground.

Flooding affected the car park of the Barbour institute and the land between the Barbour institute and Mill Brook, including the flooding of the Grade II Listed war memorial. It was reported that where Mill Brook is culverted under the High Street, water overflowed the storm drain before flowing overland past the war memorial to the Barbour Institute.

The following issues have been reported:

- High Street covers for surface water drainage were lifted indicating the capacity of the culvert had been surcharged.
- The car park at Old Mill Place currently has a layer of mossy sludge that has been there for several weeks, it is thought that this is related to high groundwater. Similarly, there are concerns regarding the borehole being capped which may again lead to increased groundwater levels.
- Outside of the Section 19 investigation, CWaC and the EA are consulting regarding the management of issues associated with the legacy borehole.
- The Parish Council report that there are 3 points on the normal course of the Mill Brook which are potential throttles; the High Street bridge; the pipes under Newall Close; the weir behind Breen Close.
- There is a grade II listed war memorial that has been affected by flood damage since 2000. The local community is deeply concerned that the frequency and severity of flooding is increasing and that the memorial is at risk of significant damage.

**Figure 1** shows details the flooding, developed in consultation with CWaC, as LLFA, and affected property owners.



**Figure 1 - Flood Overview**

Photographs that illustrate the extents of the flood event in the various areas can be seen in **Figure 2 - Figure 4.**



**Figure 2 - High Street manhole cover opposite Old Mill Place. 20/01/21**

Source: Parish Council



**Figure 3 - Mill Brook at the High Street Bridge. 20/01/21**

Source: Parish Council



**Figure 4 - Old Mill Place. 20/01/21**

Source: Parish Council



Key statistics of the Storm Christoph flooding in Tattenhall 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
19	6	6	20	15	5	As reported to CWaC prior to publishing

Table 4 provides a brief summary of the flood event, impact and response in Tattenhall.

**Table 2 – Tattenhall Flooding**

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>High Street, Old Mill Place, Newall Close</li> </ul>
Flood Alert / warning issued?	<ul style="list-style-type: none"> <li>Flood Alert: River Dee catchment in England from Whitchurch to Chester 19/01/21 20:10</li> </ul>
Flooding Impacts and Observations	<ul style="list-style-type: none"> <li>Property damage</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>Sandbags were delivered by CWaC</li> <li>Some residents used their own pumps</li> </ul>

The following actions have already been undertaken:

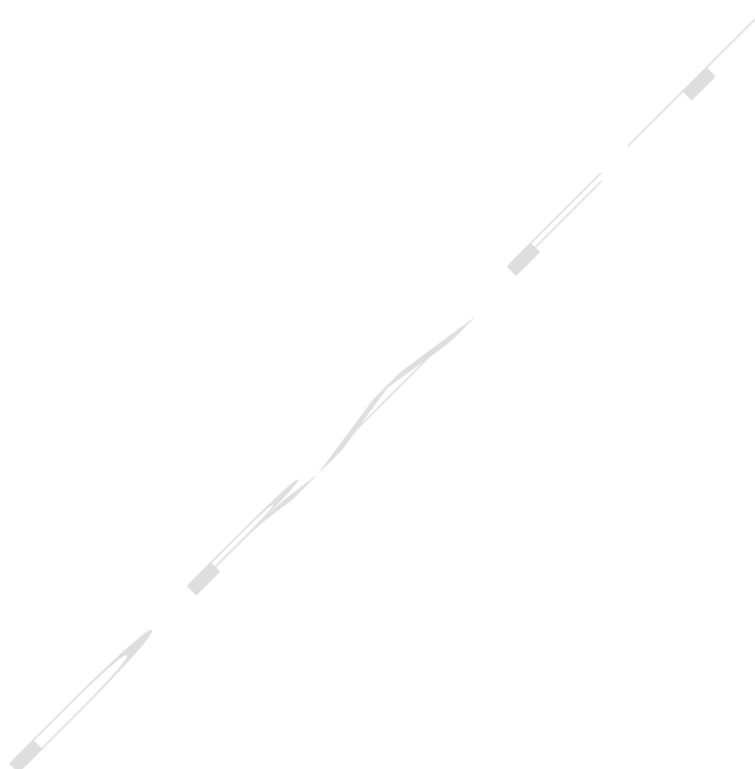
- Parish Council has prepared a report setting out the sources of flooding and what was affected
- The EA have completed phase 2 of the NFM scheme along Mill Brook (see Section 2)
- Meeting on site with affected residents 15<sup>th</sup> July 2021 with CWaC, as LLFA, and EA

## 3. Next Steps

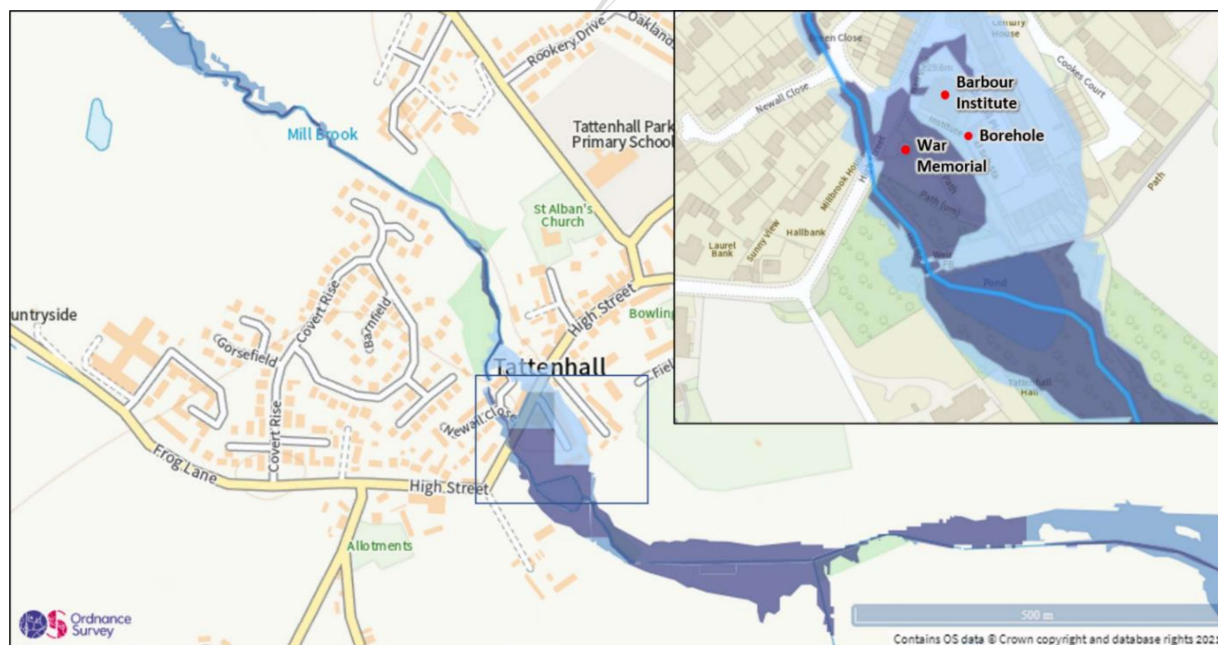
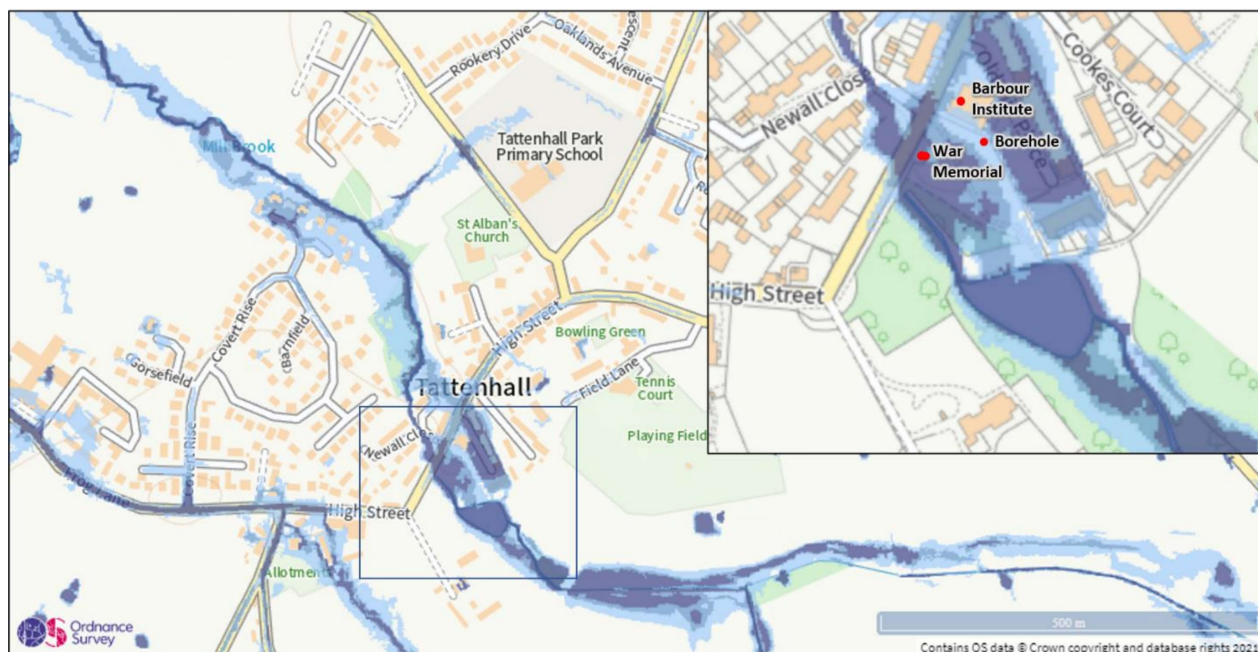
This chapter has set out the site background and conditions that resulted in the flooding in January 2021 in Tattenhall. However, some brief recommendations can be made without further investigation:

- LLFA to investigate and confirm course and condition of the Old Mill race
- EA to consider additional measures to reduce risk of river flooding from Mill Brook
- Develop a strategy between CWaC and the EA to better understand how the groundwater is affected by the ceasing of abstraction at the borehole and whether continued abstraction could reduce the risk of flooding
- Undertake a CCTV survey of the private drainage in Old Mill Place to confirm condition and route
- Undertake CCTV of the High Street surface water system to establish whether there are any blockages and undertake any clearance work
- Residents to be encouraged to sign up to the EA flood alert service and LLFA and EA to consider the feasibility of implementing a flood warning service
- LLFA to promote the use of the Floodhub for information on flooding

A full Section 19 investigation report will follow the Interim Report and will include a strategic overview of the RMA response, flooding mechanisms, flood infrastructure performance and a full list of recommended actions for Tattenhall.



## Appendix I - Map



## Appendix II – Timeline

Time	Tattenhall
20th Jan pm	Mill Brook began to spill out of bank upstream of High Street bridge and flooded the war memorial.
20 <sup>th</sup> Jan 17:30	Water enters Old Mill Place from multiple sources including overland flow the overspilling pond, excess water unable to drain through surface water drains and from groundwater.
20 <sup>th</sup> Jan 18:00	Old Mill Place properties severely flooded resulting in the Cheshire fire and Rescue service attending and using a boat team to support evacuation.
20 <sup>th</sup> Jan 23:00	Cheshire Fire and Rescue service leaves site. Evacuees offered overnight shelter.

