

Winsford Main Report Details

Project:	Storm Christoph Section 19 Main Report		
Area:	Winsford		
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Document history

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Winsford Main Report Details

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

1. Background

Winsford is located 7km due south of Northwich through which the River Weaver flows. Bottom Flash is located upstream of the A54 Winsford Bridge and Top Flash is located approximately 2km upstream of Bottom Flash.

The Canal and River Trust (the Trust) is responsible for the operation and maintenance of the Vale Royal lock and sluice gates located 5.7km downstream of Bottom Flashes, these gates are operated for navigation purposes but can also influence water levels upstream, refer to Figure 1.

There are no formal flood defences on the River Weaver at Bottom Flash, the Lakeside Caravan Park is located within Environment Agency (EA) Flood Zones 3 (high risk) and 2 and within the very low to low surface water flood. Winsford is within the EA Flood Zone 1 or 2, localised areas are within the medium to high surface water flood risk zones (Appendix I).

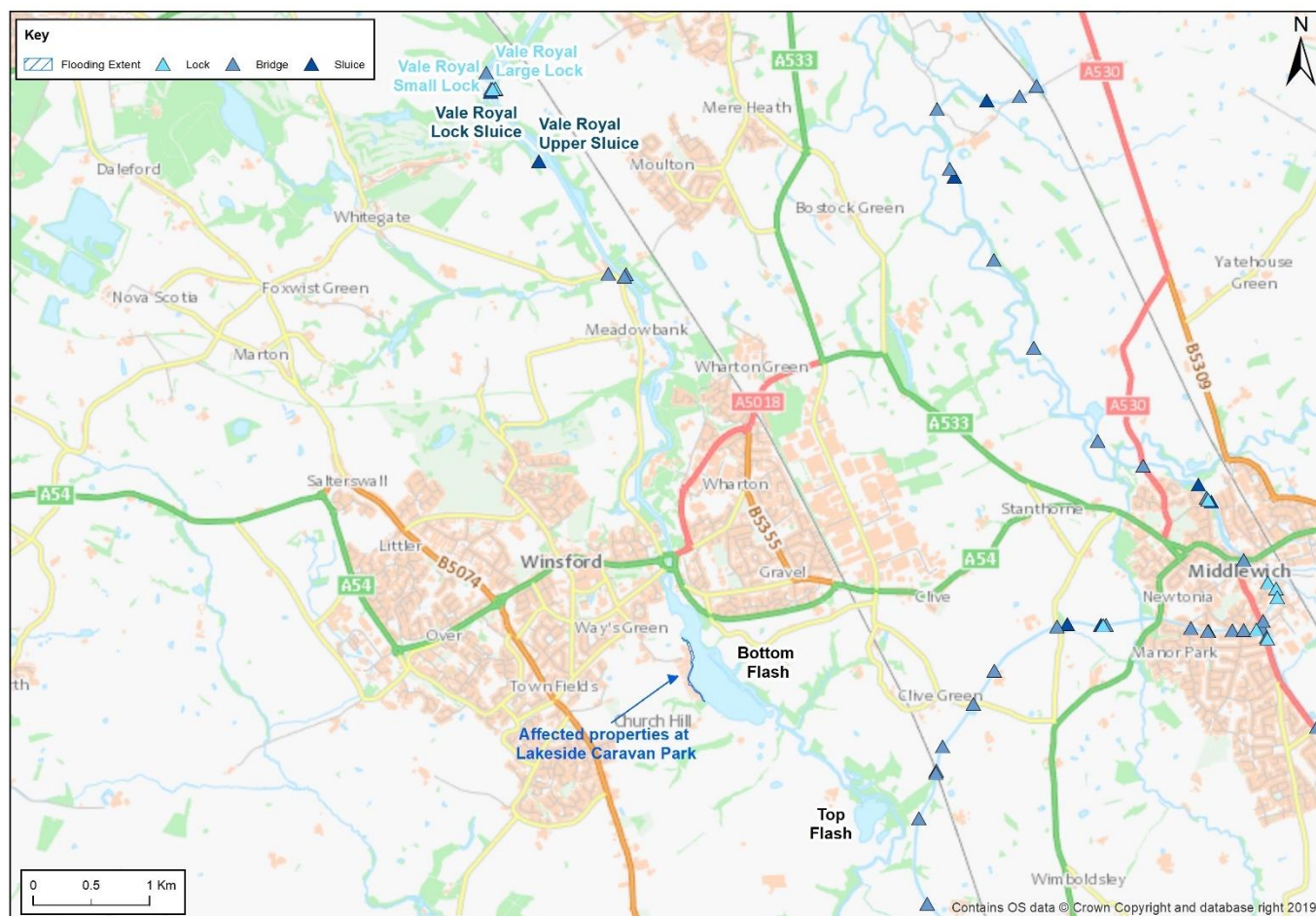


Figure 1 – The Trust’s Assets at Winsford

2. Flood Review

Figure 2 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.

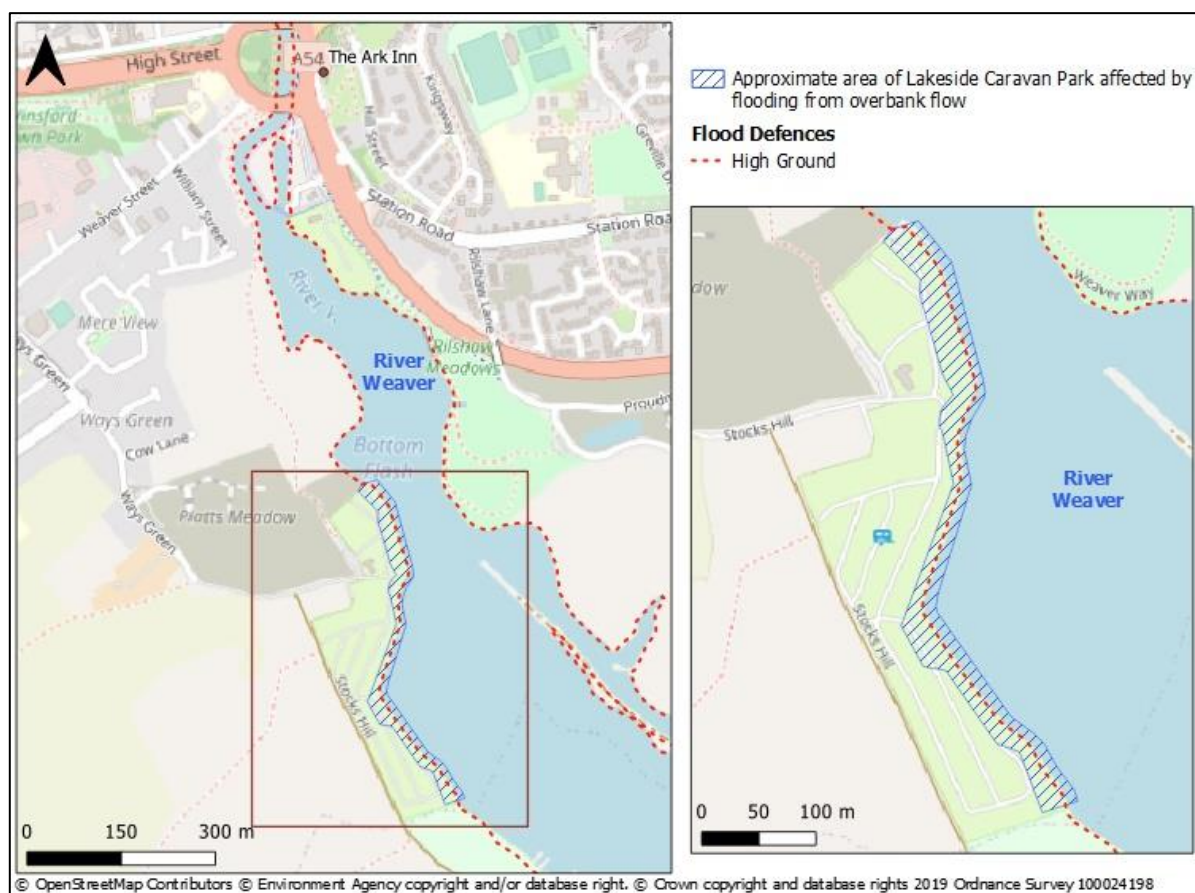


Figure 2 - Flood Overview

2.1. Market Place and Wharton Road

During Storm Christoph three properties were affected by flooding, of these three only The Ark Inn on Market Place was reported to experience internal flooding. Further information regarding the source and mechanism of flooding is not available.

2.2. Lakeside Caravan Park

Water in the River Weaver and Bottom Flashes overtopped the banks and flowed through the caravan park causing significant damage. The water was reported to be 1.5m deep, causing damage to static caravans, lodges, electricity boxes and lighting. Figure 3 and Figure 4 provides photographic evidence of the flooding that occurred at Lakeside Caravan Park.

The manager of the Lakeside Caravan Park reported that:

- Flood water was up to 1.5m in depth in some of the caravans.
- Surface water runoff onto the site has increased since the new housing development above and to the side of the caravan park.
- The steep bank to the rear of pitches 21 to 25 and below nos. 8 to 12 slipped and work has been undertaken to stabilise this bank.
- The sandbank within the Flash continues to build up and the manager believes this has contributed to increased flood risk; they have made repeated requests for the flash to be dredged to reduce flood risk and improve navigation and recreation opportunities.

The Environment Agency have conducted topographical survey which shows that the water level in the river downstream through Winsford town centre, within the flash itself and to several hundred metres upstream of the Flash, is controlled by the Vale Royal Lock sluices. These maintain the Weaver Navigation level and historically would have made it possible to get commercial craft up to Winsford for trading. Survey shows the Water level (static summer level) to be 16.38 mAOD from upstream of Vale Royal Locks all the way up through the Flash. In terms of capacity, flood flows through the Flash are governed by the dimensions of the outlet channel (analogous to a neck in a bottle). Bed siltation (which naturally occurs as river exit into lakes), is not a key determinant in affecting the flood flows.

The Trust have reported that the sluice gate at Vale Royal was fully open during Storm Christoph. Whilst the water level is managed for navigation by the Trust's sluice at Vale Royal, the flashes are not within Trust ownership or maintenance.



Figure 3 - Lakeside Caravan Park, 21/01/2021

Source: Business manager of the Lakeside Caravan Park



Figure 4 - Lakeside Caravan Park – Boats on the Flash, 21/01/2021

Source: Business manager of the Lakeside Caravan Park

2.3. Area Summary

Key statistics of the Storm Christoph Flooding in Winsford 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
0	17	12	8	0 (17 lodges and/or caravans flooded)	0	As reported to CWaC prior to publishing

Table 2 provides a brief summary of the flood event, impact and response in Winsford.

Table 2 - Flood Impact Summary

Winsford	
Date	<ul style="list-style-type: none"> 20th January 2021
Affected Roads	<ul style="list-style-type: none"> Lakeside Caravan Park on Stocks Hill Wharton Road, Market Place
Flood Alert / waring issued?	<ul style="list-style-type: none"> Weaver catchment including Nantwich, Frodsham, Crewe, Winsford and Northwich Flood Alert Issued 18/01/2021 19:38 Flood Warning issued Weaver Navigation at Winsford 09:33 on 20/1/21
Flooding Impacts and Observations	<ul style="list-style-type: none"> Lakeside Caravan Park <ul style="list-style-type: none"> Flooding to Lakeside Caravan Park occurred as water rose within Bottom flash and overtopped the banks. Water reportedly to be over 1.5m deep. 17 individual lodges and static caravans experienced internal flooding, 13 of which have been written off. Electricity supply failed leaving residents without power Multiple boats became loose from moorings and either sunk or damaged. Significant costs incurred and loss of future business Market Place <ul style="list-style-type: none"> External flooding to three hospitality venues Internal flooding reported at the Ark Pub Basement flooding reported at the Red Lion Public House Additional stress and mental anguish on the community over such an event happening again

3. Flooding Mechanisms

3.1. Market Place and Wharton Road

Limited information is available for the Market Place and Wharton Road area. Given the elevation of this area, flooding was not as a result of water levels in the River Weaver.

3.2. Lakeside Caravan Park

3.2.1. Fluvial Flooding

Flooding occurred at Lakeside Caravan Park due to water levels in the interconnected River Weaver and Bottom Flash rising and spilling out of bank. The controlling mechanism for the water levels in Bottom Flashes at the Lakeside Caravan Park is Vale Royal Lock and Sluices on the Weaver approximately 6km downstream. The caravans which flooded are located at the edge of the Flash, at the lowest ground levels. These are inside the Environment Agency Flood Zone 3.

Dredging of the Flashes would have had a minimal impact to the water levels and unlikely to have reduced the number of caravans affected. The Flashes do not provide conveyance capacity and as they are directly connected to the River Weaver channel the water levels in the Flashes would match those on the Weaver. Therefore, deepening and clearing silt within the Flashes would not reduce water levels.

3.2.2. CWaC

Although no specific reports of surcharge of highways drainage gullies were observed, reports of increased surface water since new development on Stocks Hill suggests the possibility of the drainage system being overwhelmed in this area.

It is not possible to say with certainty whether the new development has increased surface water flood risk and what the specific source of this increased surface water flow was.

3.2.3. The Trust – Vale Royal Lock and Sluices

CRT telemetry records indicate that the sluice gate started to open at 04:25 on 19/01/22 and opened steadily until fully open at 10:55 on 21/01/22. The sluice was fully open until 13:15 on 22/01/22 at which point it began to close slowly to 50% opening over the next 20 hours.

3.2.4. Summary of Flooding at Lakeside Caravan Park

Flooding of the caravans occurred because of high-water levels in the River Weaver and adjacent Bottom Flashes. The water levels at this location are controlled by the downstream Vale Royal Lock and Sluices which were fully open during the peak of the event.

The area of the caravan park affected is located within the Environment Agency Flood Zone 3.

4. RMA Response

The Environment Agency and CWaC has met with Councillor Karen Shore, Cabinet Member for Environment, Highways & Strategic Transport, to explain that dredging of the Bottom Flashes and the River Weaver at this location would not reduce flood risk to the caravan park.

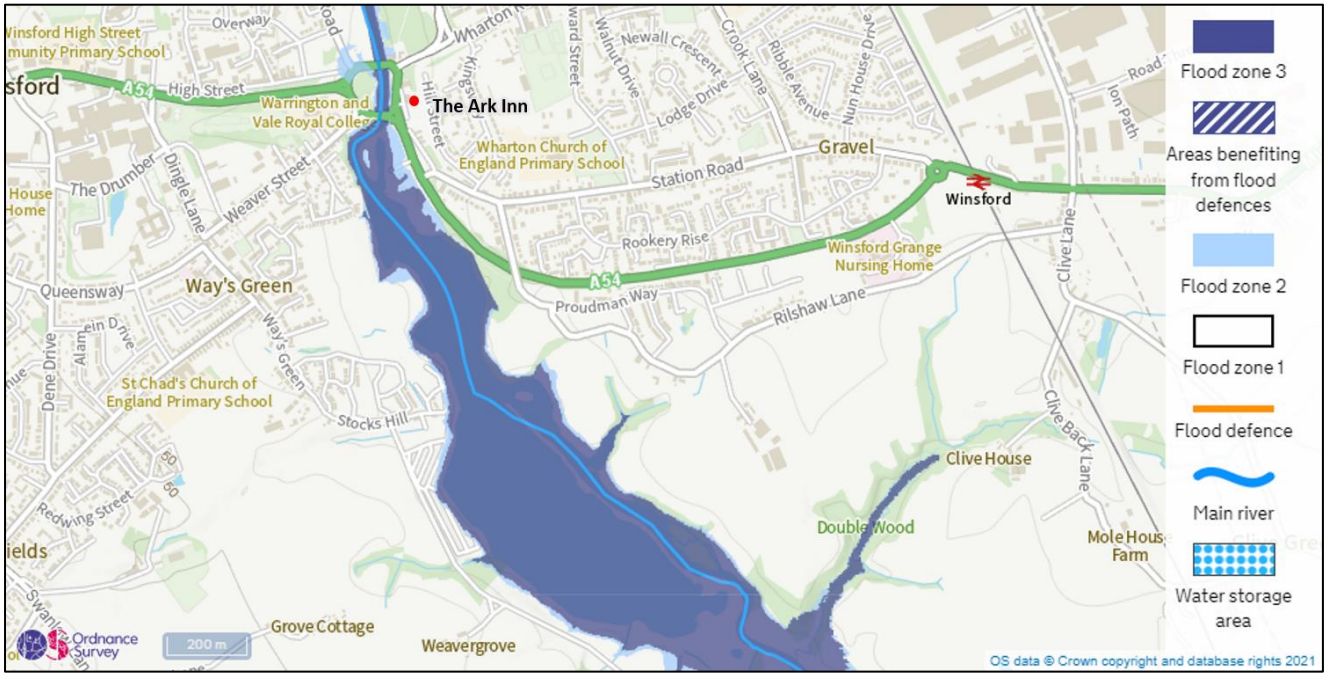
The Environment Agency and CWaC have met with the owner of the Lakeside Caravan Park to explain that caravans affected were located within Flood Zone 3 and the most effective way of reducing this risk, and damage to property, would be to re-locate these to higher ground outside of this high risk area.

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. This Section 19 report recommends the following actions be taken:

- CWaC to increase its gully emptying frequency for the Market Place and Wharton Road area covered by this section 19 investigation in line with its risk-based approach to gully emptying.
- CWaC to inspect and where appropriate survey the highway drainage on Stocks Hill to the rear of the caravan park.
- Caravan Park to consider relocating caravans outside of Flood Zone 3.
- Residents to be encouraged to sign up to the EA flood alert and Flood Warning service.
- LLFA to promote the use of the FloodHub for information on flooding.

Appendix I - Map



Source: EA



Extent of flooding from surface water

● High ● Medium ● Low ○ Very low

Source: EA

Appendix II – Timeline

Time	Lakeside Caravan Park
21 st Jan 03:00	Water started to come out of bank and flood the caravan park
21 st Jan 12:00	Water continued to rise to a maximum of 1.5m which occurred at midday.