



ST HELENS
BOROUGH COUNCIL

St Helens Borough Section 19 Report: Storm Christoph

Section 19 Flood Investigation Report for Incident on 18th to 20th January 2021

Report Reference LLFA/S19/2021/01





Contents

1. Introduction	3
1.1 Purpose	3
1.2 Criteria	4
1.3 Flood Incident	4
2. Weather Conditions.....	5
2.1 Overview	5
2.1 Flood Warnings	8
3. Sources of Flood Risk.....	10
3.1 Environment Agency Flood Maps	10
4. Local Risk Management	12
4.1 Overview	12
4.2 Response	12
5. St Helens Ward Flooded Areas	14
6. Conclusion	16
7. Recommended Actions	17



1. Introduction

1.1 Purpose

This document has been prepared by St Helens Borough Council, as the Lead Local Flood Authority (LLFA), for the specific purpose of meeting the requirements of Section 19 (1) and (2) of the Flood and Water Management Act (FWMA) 2010 which states:

- (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.*

The findings of this report are based on a subjective assessment of the information available and provided to the LLFA from 3rd parties and other Risk Management Authorities (RMAs). The opinions, conclusions, and any recommendations in this report are based on conditions encountered and information reviewed at the time of preparation. The Council expressly disclaims responsibility for any error in, or omission from, this report arising from or in connection with those opinions, conclusions, and any recommendations.

This report aims to meet the requirements of Section 19 of the FWMA, as well as provide a reference for the effective future management of flooding in the administrative area of St Helens through:

- Providing details of the flooding incident(s);
- Undertaking analysis of the flood history of the area;
- Identifying the actions which were carried out and by whom;
- Identifying the responsibilities of RMAs;
- Identifying successful response measures and lessons learned; and
- Recommending the next steps.

Any updates to the investigation criteria can be found in the Councils Lead Local Flood Risk Management Strategy (LLFRMS).



1.2 Criteria

St Helens Borough Council, in accordance with the LLFRMS, will undertake a post incident review to identify the sources which contributed to triggering Section 19 (1) of the FWMA. A flood event with significant consequences, which triggers the Council's threshold to undertake a Section 19 Flood Investigation, is one that has had or could have had, if action had not been taken, one or more of the following impacts in Table 1.

St Helens Council threshold for Section 19 Investigations	Criteria Met
Resulted in major disruption to the flow of traffic for 12 hours or more	Yes
Posed, or could have posed, a risk to human health	Yes
Adversely affected the functioning of critical infrastructure	Yes
Caused harmful impacts to environmentally and socially important assets	Yes
Caused internal flooding to a property used for residential or commercial purposes	Yes

Table 1: Thresholds to Trigger a Section 19 Flood Investigation

Section 19 (2) requires that the LLFA publishes the results of its investigation and notifies the relevant RMAs accordingly. Timescales for investigations are subject to the scale and complexity of incidents being investigated.

1.3 Flood Incident

The flooding incident that occurred on 20 January 2021 is considered to have satisfied the threshold for a formal investigation in accordance with Section 19 of the FWMA.

2. Weather Conditions

2.1 Overview

Between the 18th and 20th of January 2021, Storm Christoph brought exceptionally wet weather to the north-west, with over 100mm of rainfall across Cheshire, Greater Manchester, and Lancashire. The north-west of England recorded one of the wettest 3-day periods on record, along with strong winds. This was then followed by significant snowfall events.

The rain-radar images from the Met Office (*Figure 1*) are at 6-hourly intervals through the 19th and 20th of January 2021. The images show the heavy and persistent nature of the rainfall from Storm Christoph, with the wettest weather focussed across upland areas of Wales and northern England through this 48-hour period.

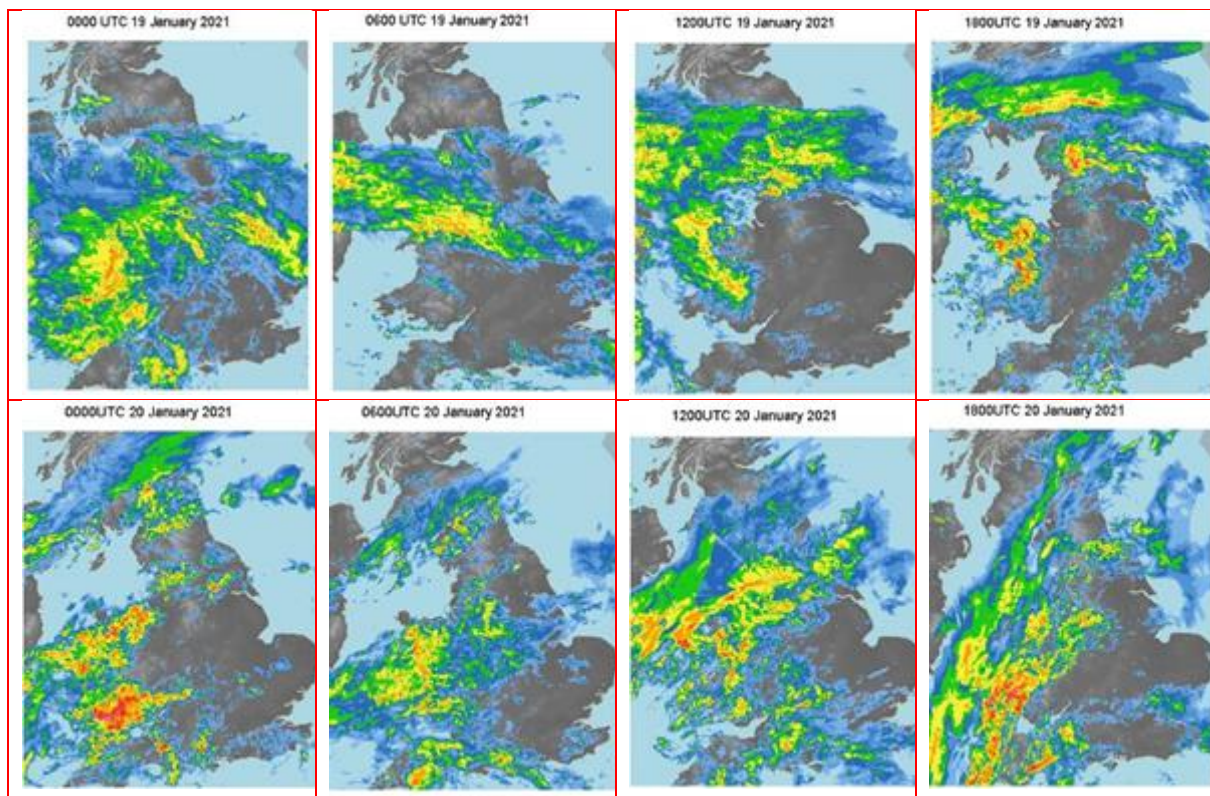


Figure 1: Rain-radar images from the Met Office set out at 6hr intervals from 19th-20th Jan 2021

The Met Office presented accumulative rainfall maps which demonstrate the magnitude of Storm Christoph, (Figure 2) over the three rain-days, from the 18th to 20th of January 2021 (0900-0900).

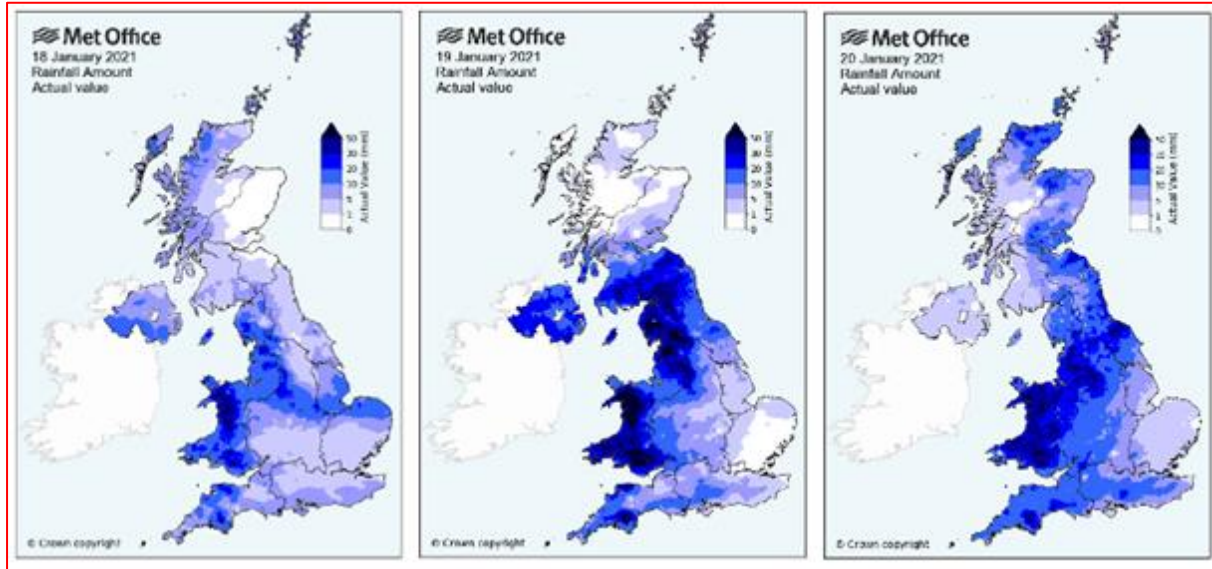


Figure 2: Met Office Day Rainfall Graphs (18th, 19th & 20th January 2021)

The Met Office Maps (Figure 3) show rainfall totals from 0900 on 18th January 2021, to 0900 on 21st January 2021. Between 50 to 100mm of rain fell widely across Wales and north-west England, with over 100mm across upland areas of Wales, south-west England, the Lake District, and the Pennines. Locally, 150 to 200mm of rainfall fell across the higher ground, which constitutes over half of the January monthly average.

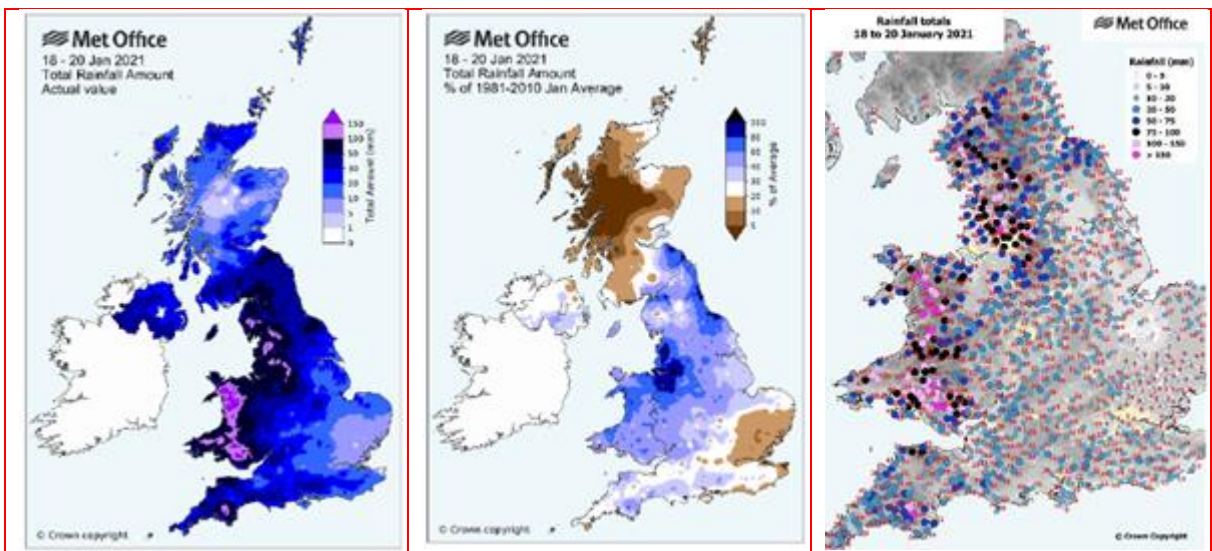


Figure 3: Total & Average Rainfall (18th, 19th & 20th January 2021)



The Met Office rainfall amount chart (Figure 4) shows area-average daily rainfall totals across north-west England and north Wales from September 2020 to January 2021. This region experienced three consecutive very wet days from the 18th to 20th of January 2021, with area-average rainfall totals of 18.2mm, 35.7mm and 25.5mm. Overall this equated to 79.4mm of rainfall, making this provisionally the wettest 3-day period on record for this region in a series from 1891 – marginally wetter than 3rd to 5th December 2015 (78.2mm). The latter including the record-breaking rainfall from Storm Desmond.

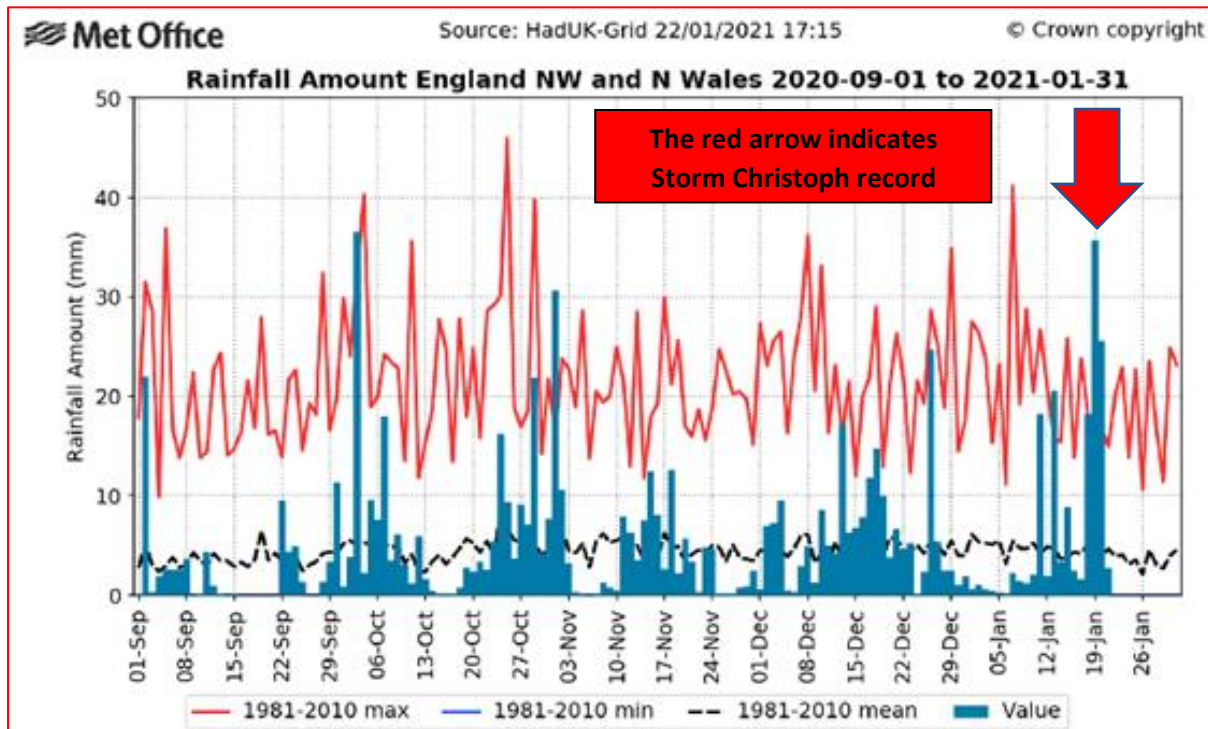


Figure 4: Rainfall Amount (01-09-2020 to 31-01-2021)

2.1 Flood Warnings

The Met Office has a statutory duty to provide forecast information for the public, relevant Government agencies, such as the Environment Agency (EA), and the water companies. Legislation supporting the Civil Contingencies Act (2004) states that Category 1 responders must have regard to the Met Office's duty to warn the public, and provide information and advice, if an emergency is likely to occur or has taken place.

The EA use a three-tiered approach to flood warnings and alerts depending on the severity of flooding expected, please see *Table 2*. These are issued at different intervals in advance of flooding. Flood Alert Areas generally cover a large area and mean flooding of low-lying land and roads is possible, whilst Flood Warning Areas are usually more detailed and broken down into specific locations and mean flooding to properties is expected. Locations within a Flood Alert Area are also not necessarily within a Flood Warning Area. Sections of the St Helens Borough boundary are covered by the EAs Flood Warning Service and Flood Alert Areas. The Flood Warning Area is applicable to all main rivers. Flood Alert Areas are applicable to all main rivers and some adjacent discrete watercourses.




Warning Alerts:	Description:	When Actioned:
 FLOOD ALERT	Flooding is possible. Be prepared.	Two hours to two days in advance of flooding.
 FLOOD WARNING	Flooding is expected. Immediate action required.	Half an hour to 2 hours in advance of flooding.
 SEVERE FLOOD WARNING	Severe flooding. Danger to life.	When flooding poses a significant threat to life.

Table 2: Met Office Flood Warning Alerts

The St Helens area was put under Flood Alert via location code 013WAFSA (River Sankey catchment) which covers St Helens and Warrington. This area covers 385 residential properties, 78 non-residential properties and 8 critical services. *Table 3* provides details on the issued Flood Alerts and Flood Warnings in relation to the flood event and *Table 4* shows the established alert/warning areas.



Section 19 Flood Investigation Report

Type	Date / Time Issued	Code	Name
Flood Alert	18/01/2021 19:38	013WAFSA	River Sankey catchment within St Helens and Warrington
Flood Warning	20/01/2021 12:52	013FWFM7	Sutton Brook at Moss Nook
Flood Warning	20/01/2021 12:52	013FWFM3	Rainford Brook at Moss Bank
Flood Warning	20/01/2021 12:52	013FWFM4	Rainford Brook at Rainford North
Flood Warning	20/01/2021 12:52	013FWFM5	Rainford Brook at Rainford South
Flood Warning	20/01/2021 12:52	013FWFM6	Sutton Mill Brook at Sutton Leach

Table 3: Flood Alerts / Flood Warnings Issued

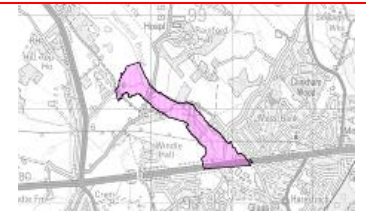
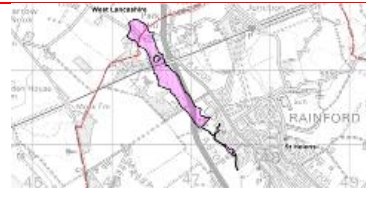

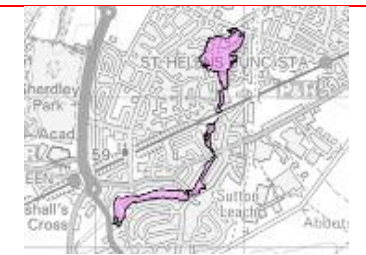
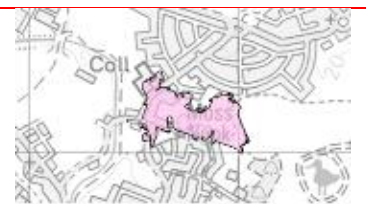
Code	Description	Location
013FWFM3 - Rainford Brook at Moss Bank	Rainford Brook: Areas at risk include land and property at Berrington Road, between Grey House Farm and the river, Windle Park Wood, and some properties on Woodside and Birch Tree Avenues. 13 properties in total.	
013FWFM4 - Rainford Brook at Rainford North	Rainford Brook: Areas at risk include land and properties at Siding lane, Lords Fold and Lower Shades. Also at risk, are some properties on Beech Gardens. 22 properties in total.	
013FWFM5 - Rainford Brook at Rainford South	Rainford Brook: Areas at risk include land and properties at Pasture Lane Business Centre, Pasture Lane Bridge (lesser), and various other businesses. 26 properties in total.	
013FWFM6 - Sutton Mill Brook at Sutton Leach	Sutton Mill Brook: Areas at risk include land and property on Landsdowne Court, parts of Waterdale Crescent, Boscow Crescent, Dawsons Avenue, and Gerrards Lane. Also at risk, land alongside Sutton Mill Brook from Waterdale Crescent to Damhouse Bridge, Sutton Mill Dam. 102 properties in total.	
013FWFM7 - Sutton Brook at Moss Nook	Sutton Brook: Areas at risk include land and properties at St Cuthberts school, Berrys Lane, Watery Lane, Portland Way and The Moss Nook. 62 properties in total.	

Table 4: Detailed Overview of Flood Alerts and Flood Warnings Issued

Note: the number of properties at risk in each of the flood alert and warning areas in Table 4 has been updated by the EA since the publication of the LLFRMS 2019-2024.



3. Sources of Flood Risk

Table 5 identifies the different sources of flooding. A flood event can be the result of one source of flooding, may only be from one or a combination of sources.

Source	Description
Fluvial flooding	Exceedance of the flow capacity of river channels (whether this is a Main River or an Ordinary Watercourse), leading to overtopping of riverbanks and the inundation of the surrounding land.
Tidal flooding	Propagation of high tides and storm surges up tidal river channels, leading to overtopping of the riverbanks and inundation of the surrounding land.
Surface Water flooding (Pluvial flooding)	Intense rainfall exceeds the available infiltration capacity, and/or the drainage capacity, leading to overland flows and surface water flooding.
Groundwater flooding	Emergence of groundwater at the surface (and subsequent overland flows), or into subsurface voids, as a result of abnormally high groundwater flows. The introduction of an obstruction to groundwater flow and/or the rebound of previously depressed groundwater levels.
Sewer flooding	Flooding from sewers is caused by exceedance of sewer capacity and/or a blockage in the sewer network. In areas with a combined sewer network system there is a risk that land and infrastructure could be flooded with contaminated water.
Other sources of flood risk	Flooding from canals, reservoirs (breach or overtopping) and failure of flood defences.

Table 5: Various Sources of Flooding

3.1 Environment Agency Flood Maps

The EA provide flood risk maps that can be used to assess the likelihood of flooding in certain areas in the UK. These maps¹ provide information on potential surface water (as pictured overleaf in *Figure 5*), river and sea, and reservoir vulnerability to flood risk. It evaluates the risks, removing any potential flood defences and is used to help vulnerable communities understand and be aware of the hazards. The flood maps provide the best estimate to extents of flooding from each type of source, however during events these sources of flooding may combine and exacerbate the impact.

¹ [Check the long term flood risk for an area in England - GOV.UK \(www.gov.uk\)](http://www.gov.uk)



Section 19 Flood Investigation Report

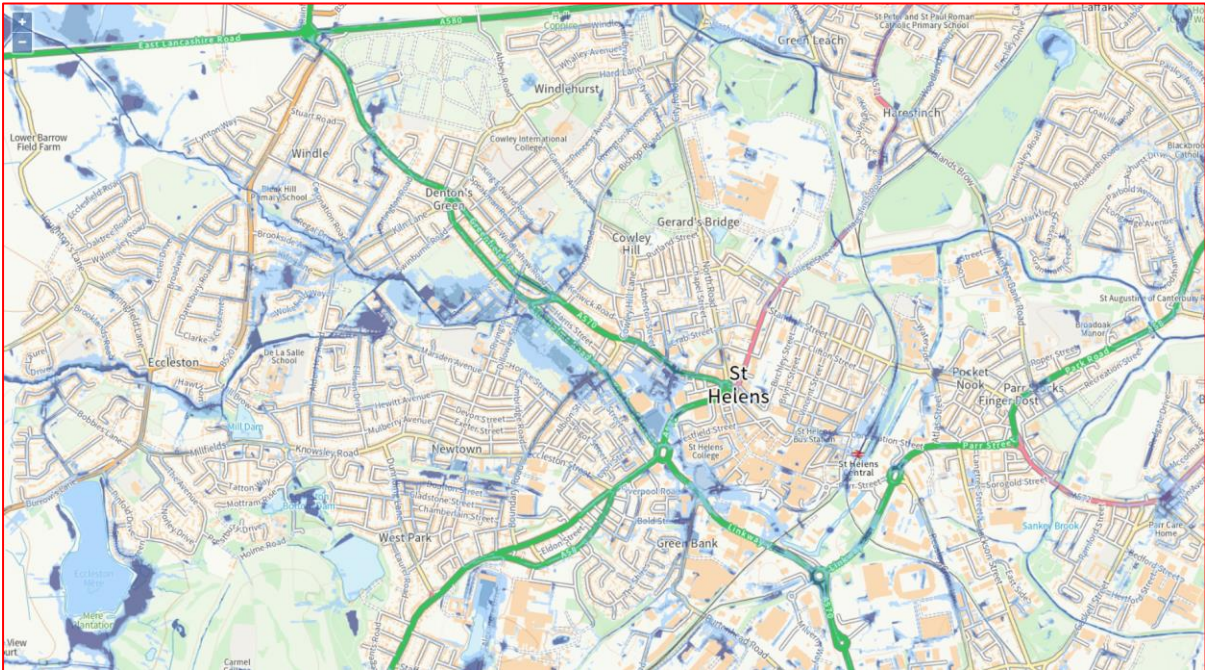


Figure 5: EA's Surface Water Flood Map



4. Local Risk Management

4.1 Overview

Given the unprecedented nature of the flooding, it is considered that the response was well-coordinated, with senior management quickly recognising the severity of the issue and initiating Gold Command status. Gold status represents the highest level of multi-service response to communities to reduce the overall potential impact of an event. It is also noted that the response was undertaken during the COVID-19 pandemic, in which staff personnel and resources were limited due to illness. This also coincided with the winter maintenance period, in which staff, vehicles, and resources were already allocated to other operational duties.

On 18th January 2021, the Council's Risk and Resilience Manager attended a flood advisory service teleconference. It advised that the oncoming Storm Christoph meant that extensive rainfall was expected across the region, starting that evening, and continuing until 21st January 2021. The expected impact was localised flooding and there was an amber warning in the Sankey catchment area from 19th to 21st January 2021. The remainder of the region had a yellow warning in place with residual flooding expected to be seen until 22nd January 2021. The priority areas (*due to being at high risk of flooding*) were Sankey, Rainford Brook, Moss Bank, Sutton Leach and Rainford North and South. Local rainfall was expected to be more than 30mm, with some areas experiencing 80mm.

This information was shared by the Risk and Resilience Manager with duty officers and colleagues in the Council. The Flood Warnings were also referred to in the weekly handover of on call responsibilities email on 19th January 2021. On 19th January 2021, the Risk and Resilience Manager shared details from a further flood advisory service teleconference which stated that an amber warning remained in place for Sankey and a yellow warning for the remainder of the area. It was unusual that this flooding event was followed by snow and ice which required significant planning and resources.

4.2 Response

On the afternoon of 19th January 2021, no agencies were declaring major incidents although Wirral Fire and Rescue Service (FRS) had reported one rescue from a vehicle following the Merseyside Teleconferences. At that time, there had been some, but no significant impact on road and rail travel. Within St Helens, there were road closures at Bobbies Lane, Burrows Lane, Gorsey Lane and Vista Road. The Council's depot team and resources during the flooding incident was set up for winter gritting measures.

By the morning of 20th January 2021, some road closures remained in place including Burrows Lane, Gorsey Lane and Vista Road. Rainford Road remained passable, but traffic management was on standby to install temporary lights if required. The Peasley Cross Lane flood defence barrier was activated on the morning of 20th January 2021.

The flood advisory teleconference advised that the operational lead organisation was Merseyside FRS. The Council's response was co-ordinated by the Head of Highways. The Emergency Duty Officer was on site at the Crematorium incident on 20th January 2021 (Rainford Road/Malt House Court) throughout the day on behalf of the Council. By the afternoon of 20th January 2021, a further update on road closures noted that, in addition to existing closures, Malt House Court had flooded, and that Merseyside FRS were at the scene. The water from



this was impacting upon Rainford Road but it remained passable and traffic management remained on standby. By this time, Rainford Brook was overtopping and there was a concern to nearby properties and to a Scottish Power sub-station. Merseyside FRS assisted the response efforts with pumping at Rainford Road and West End Road and helped when dealing with the flooding of properties on Malt House Court and protecting the Scottish Power sub- station.

The Council held a Gold Command meeting to discuss the flooding risk and the required response on the afternoon of 20th January 2021. The meeting was chaired by the Chief Executive and the meeting minutes, with associated actions, were circulated the same day. A follow-up meeting was held the following morning (21st January 2021) to discuss the overnight response, by which time the management of the risk meant that Gold Command could be stood down.

Although flooding at Peasley Cross Lane meant that access had to be diverted, the COVID-19 vaccination site at St Helens Rugby Stadium remained operational throughout the incident with appropriate signage in place. The automatic flood barriers at this location had been damaged by the extent of the flooding and temporary alternate access was provided via the Tesco superstore car park to the stadium side entrance.



5. St Helens Ward Flooded Areas

During Storm Christoph, the Council was notified of road closures and internal or external flooding of properties and infrastructure across the borough. *Table 6* below refers to details of the flooding locations by Ward and *Table 7* identifies the locations where sandbags were requested. It is worth noting that sandbag requests do not always indicate flooding of property, both internal and external. These were included in the report to represent how the borough was affected.

Ward	Description
Billinge and Seneley Green	<ul style="list-style-type: none">• A land drainage collapse occurred on Rainford Road (A571).• Properties on Birch Grove were affected by external flooding.
Blackbrook	<ul style="list-style-type: none">• There were reports of external flooding to 3 properties located on West End Road.
Bold and Lea Green	Road closures were implemented on Gorsey Lane and Travers Entry (B5204).
Eccleston	<ul style="list-style-type: none">• Temporary Signals / Road Closures were implemented during the event at Burrows Lane.<ul style="list-style-type: none">• 11 properties were externally affected on Griffin Close.• 4 properties were externally affected on Bobbies Lane.• It was reported that a school located along Bleak Hill Road had issues of internal and external flooding.
Newton-le-Willows West	<ul style="list-style-type: none">• A road closure was implemented at Vista Road (B5209).
Rainford	<ul style="list-style-type: none">• Road / Pathway Closures were implemented on Berrington's Lane and Lodge Lane / Intake Road.<ul style="list-style-type: none">• A property was internally flooded on Berrington's Lane.• A property was internally flooded on Beech Gardens.• One property was affected by external flooding on Ormskirk Road.<ul style="list-style-type: none">• Rainford Church was affected internally and externally.
St Helens Town Centre	<ul style="list-style-type: none">• Road closures were implemented at Burton Head Road and College Street.
Peasley Cross and Fingerpost	<ul style="list-style-type: none">• A road closure was implemented at Peasley Cross Lane causing access issues to the Totally Wicked Stadium, which was acting as a vaccination site at the time. Traffic was diverted so the vaccination site could continue operate.
Windle	<ul style="list-style-type: none">• A road closure was implemented on Rainford Road (A570).• St Helens Crematorium was affected by external flooding which was threatening to affect a Scottish Power substation located on the perimeter of the site. The emergency services were called out to assist the situation.<ul style="list-style-type: none">• 2 dwellings on Malt House Court were affected internally and externally. 8 dwellings were affected externally on Malt House Court. Note: some of the affected dwellings exist in the same structure.• It is worth noting that all the impacts identified in this section for the Windle Ward were part of a joint issue.

Table 6: Details on Flooding Locations by Ward



Ward	Sandbag Request Location
Billinge and Seneley Green	Brookside Close, Garswood Road, Birch Grove
Blackbrook	Link Avenue, West End Road
Bold and Lea Green	Begonia Gardens, Paddock Grove
Eccleston	Millbrook Lane, Albany Avenue, Burrows Lane, Bobbies Lane, Griffin Close
Newton-le-Willows West	Vista Way
Parr	Fleet Lane
Rainford	Ormskirk Road, Pimbo Road, Mossborough Road, The Avenue, Beech Gardens, Berringtons Lane
Rainhill	Marley Close, Mill Lane
St Helens Town Centre	Dodd Avenue, Lingholme Road, Kiln Lane
Sutton North West	Watery Lane
Windle	Regal Drive, Inglewood Road, Coronation Road, Regal Drive, Bleak Hill Road, St Helens Cemetery and Crematorium

Table 7: Details on Sandbags Request Locations by Ward



6. Conclusion

The flooding in St Helens in January 2021 was caused by the peak rainfall event creating runoff from rural areas. The urban drainage network was overwhelmed due to the intensity of the rainfall and capacity was limited due to high levels within the watercourses.

From 18th to 20th January 2021, St Helens and neighbouring areas experienced three of the wettest days on record for this region since 1891, with area-average rainfall totals of 18.2mm, 35.7mm and 25.5mm. Overall this equated to 79.4mm of rainfall, which is unprecedented.

Furthermore, groundwater became surface water from higher land, flowing onto areas where the ground was either saturated or impermeable. As stated in this report the combination of the various types of water sources due to the storm event, resulted in the borough-wide flooding seen in this flood event.



7. Recommended Actions

The LLFA's role is to coordinate the management of flood risk within their administrative area. It is suggested that the recommendations made within this report are considered by the relevant RMAs and reviewed. St Helens Borough Council will consider the following actions as per the borough wide flood event.

ID	Action	Lead RMA (Support)
1	Continue looking at current potential flood reduction schemes	St Helens Council, EA, UU
2	Assess / Investigate flooding locations identified over Storm Christoph for any joint situations and locations for further works and schemes	St Helens Council, EA, UU
3	Continue to develop the 'Slow the Flow' project for the St Helens Area and continue to gain funding	St Helens Council, EA, UU, Residents, Consultants
4	Multi-Agency Flood Plan: LLFA should continue to develop its Severe Weather Plan with sustained input from RMAs and partner agencies	St Helens Council, EA, UU
5	Undertake discussions to review and strengthen emergency planning procedures.	St Helens Council, Relevant RMAs
6	Look at 'Quick Wins' where further maintenance or improvements can be undertaken to the surrounding watercourses	St Helens Council, EA, UU
7	Communication: Continue to encourage residents to report issues of flooding and outline who this should be reported to (LLFA, UU, EA), and what mechanisms are available to report (phone, email, mobile app etc.) Additional information could be made available through the council website, and this would be used to ensure as many records as possible are noted	St Helens Council, EA, UU, residents, and business owners
8	Stakeholder engagement and community resilience: Interested RMAs to work proactively with the local communities to improve awareness of flood risk and resilience to subsequent events. Emphasis should be placed on preparing for flooding before an event happens	St Helens Council, EA, UU
8	Identify if Property level protection and resilience measures are needed and investigate what sources of funding are available	St Helens Council, EA

Table 8: Recommended Actions