

SWIMS Summary 2020



River Beult. November 2020. Image by Christine Wissink.

Monitoring the Impacts of Severe Weather

Full Report for 2020

Interreg
North Sea Region
FRAMES
European Regional Development Fund



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Introduction

The Severe Weather Impacts Monitoring System (SWIMS)¹ is a decision-support tool that can be used by public service providers and Kent and Medway businesses and organisations to capture the impacts of severe weather events on their service or business. The evidence-base collected can be used to better prepare their service or business for the future. This report summarises the impacts of severe weather on a number of public service providers in Kent and Medway during 2020, from data collected and recorded by services through SWIMS.

Summary of 2020 Costs	
Events Logged	11
Cost to Service	£17,000
Impact in Days	40
Buildings Affected	27
Staff affected ²	116
Calls Received	1
Residents Affected	3000
Cost to Residents	£0
Services Recording	11

Table 1: SWIMS Summary 2020

¹ All data and figures in this report are based on actual and available data collected and recorded through the swims System as of 22nd February 2021.

² Staff days are based on the average working day of 7.5 hours, week as 5 days and month as 20 days.

2020 SWIMS Events Overview

During 2020, there were 11 severe weather events logged on the SWIMS system (2 Gales, 1 Flood, 4 Storms, 1 High Temperature and 3 Rainfall Events). Kent experienced high winds and heavy rainfall between 14th – 15th January 2020 as Storm Brendan struck Kent. Yellow Met Office warnings were in place overnight on 14th January and Flood warnings were issued for the Isle of Sheppey and coastal areas from Kemsley to Seasalter³. Powerful Gales were recorded with a max gust speed of 62mph at Langdon Bay and Manston weather stations. As a result of Storm Brendan, damage to property was reported by some services in Kent. Kent experienced further high winds and Gale conditions during Storm Ciara, with maximum wind gust speeds of 39mph recorded in the county on 2nd February 2020.

February's unsettled weather continued and a further 4 Storm, Rainfall and Flood events were logged on SWIMS during the remainder of the month. On the 13th of February, 7mm of rainfall fell in one hour at Manston and maximum wind speeds of 54mph were recorded at Langdon Bay, resulting in surface water flooding and widespread disruption across the road network being reported by some Kent Services. Further events in February saw rainfall reach 3.2mm per hour across parts of Kent with highs of 67mph winds reported at Manston on the 16th of February.

The Met Office issued a yellow weather warning for rain for most of Kent, excluding some areas in Medway, on 5th March 2020, which was expected to lead to some flooding and disruption⁴. The daily maximum rainfall recorded in Kent by the Met Office during this event reached a high of 34.8mm. Following on from this extremely wet period, stormy conditions and high winds reaching 52mph battered Kent in May. Services reported power outages leading to loss of internet access and storm damage to buildings.

Succeeding the heavy rainfall and high winds in March and May, Kent experienced a significant heatwave for 7 consecutive days between 7th – 13th August as hot, humid air moved north from the near continent. The Met Office reported this period of high temperatures as one of the most significant heatwaves to affect southern England in the last 60 years⁵. Recorded daily maximum temperatures exceeded 33°C across parts of Kent, with the highest recorded daily maximum temperature of 34.4°C recorded at Frittenden on 7th August. Overnight temperatures across much of Kent also remained above 20°C during this period. The heat and humidity led to some thunderstorms, torrential downpours, and flash-flooding across Kent on the 13th of August where the daily totals of recorded rainfall reached 11.4mm in East Malling.

Impacts from Storm Bella were felt in Kent between 26th – 27th December 2020. The Storm occurred due to a large, deep area of low pressure dominating the North Atlantic, bringing persistent heavy rain and very strong winds which swept across England and Wales overnight on 26 to 27 December⁶. Highest recorded daily rainfall in Kent was recorded at Goudhurst where

³ Harman, C. 2020. Kent weather warning: High winds and heavy rain set to batter county as Storm Brendan hits UK. <https://www.kentonline.co.uk/ashford/news/heavy-wind-and-rain-set-to-batter-county-220067/?cmpredirect>

⁴ Chessum, V. 2020. Kent weather: Met Office issues eight-hour yellow weather warning as rain will soak county. <https://www.kentlive.news/news/kent-news/kent-weather-met-office-issues-3916401>

⁵ Kendon, M. Met Office National Climate Information Centre. 2020. August heat-wave. https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/interesting/2020/2020_06_august_heatwave.pdf

⁶ Kendon, M. Met Office National Climate Information Centre. 2020. Storm Bella 26 to 27 December 2020.

33mm fell over a 24-hour period between 26th – 27th of December. The strongest winds were across Wales, the south-west and southern England, where this was one of the most powerful storms of the year. A summary of the events and costs recorded in 2020 is in table 2.

Summary of SWIMS Events logged and recorded costs in 2020		
Date	Primary Event Type	Total Recorded Costs
14 – 15 January	Gale	£0
1 – 2 February	Gale	£0
7 – 11 February	Rainfall	£2000
12 – 13 February	Storm	£0
15 – 19 February	Flood	£10,000
28 – 29 February	Storm	£0
5 – 8 March	Rainfall	£0
9 – 11 May	Storm	£0
7 – 13 August	High temperature	£0
13 August	Rainfall	£3000
26 – 27 December	Storm	£2000
		Total: £17,000

Table 1: Summary of Events and Costs for 2020

Key Impacts

Property - In total 27 buildings were affected because of severe weather in 2020. Kent County council experienced damage to properties throughout the year, with the Community Learning and Skills Service reporting damage to several locations. Tonbridge Adult Education Centre suffered water damage to ceiling tiles during heavy rainfall in early February and additional 2m² leaks through the roof into the new library and classroom areas later in the month. In addition, the perimeter fence and gate at Sevenoaks Adult Education Centre was destabilised due to high winds in January followed by a tree falling into the garden room, damaging roof, and ceiling and uncovering suspected asbestos in February. Dartford Adult Education Centre experienced leaking roofs and ceilings in classrooms and Sheppey Adult Education Centre was damaged due to high winds causing safety glass to break in reception area of the building. During Storm Bella further storm damage was reported at Sevenoaks Adult Education Centre, water ingress further damaged 3 classrooms which had already suffered significant damage earlier on in the year.

Kent Libraries, Registrations and Archives also reported storm damage to 3 libraries in 2020. Staplehurst library had tiles blown from roof in February and Westgate library suffered a roof leak due to heavy rainfall, the leak damaged the wall and stairwell. Tonbridge library also suffered damage to roof cladding whereby mortar between the slates and facework was damaged on Block A.

Windmill Lane Caravan Site in West Malling flooded because of heavy rainfall in August, affecting residents. 5 of 14 caravan plots were flooded with silt and mud from the adjoining bridle path.

Damage to property was not limited to Kent Council buildings in 2020. Swale Brough Council's Property Service reported damage to the Swallows Leisure Centre and Sheppey Healthy Living Centre because of high winds and storm conditions. A public convenience building, and Swale House also suffered roof leaks in this period.

Disruption to Service Delivery - Multiple services were disrupted a result of severe weather affecting the county. In February, some Kent Community Warden's experienced a delay in getting to deployment areas due to areas of flooding across the county. Some wardens also experienced minor delays getting to work bases. Similarly, during the August heatwave 55 Community Wardens were unable to work outside in their deployment areas as they would have been at risk from suffering impacts from high temperatures. This led to Wardens being unable to provide a visible presence in deployment areas during the heatwave, which impacted normal service delivery. On 13th of August, Community Wardens were restricted by storms and were unable to work in deployment areas as normal which impacted service delivery.

KCC Trading Standards reported that in March, due to groundwater flooding, the main access road to the Highways Depo was impassable by car or on foot. 30 staff were unable to access the depo until the flooding subsided. Kent Libraries, Registrations and Archives also reported disruption to service delivery throughout the year. Tunbridge Wells library staff were delayed by 2 hours on their journeys into work due to flooding caused by blocked drains on the North Farm Industrial Estate. Approximately 6 hours of staff time was lost. In February, widespread flooding and fallen trees on road network across Kent caused problems for library staff on their commutes to work and impacted service delivery. On advice of the Environment Agency and Flood Wardens in February, Yalding library closed 30 minutes early due to rising flood waters in the village.

KCC Community Learning and Skills Service reported disruption to lessons for adult learners at Tonbridge, Dartford, and Sevenoaks due to storm damage to classrooms. In addition, significant staff time was diverted to deal with the impacts of the severe weather events taking staff away from normal duties.

Swale Borough Council's planning team reported that 2 members of staff were unable to access internet for 2 hours whilst home working during covid-19 pandemic due to storm damage to their homes. This impacted normal service delivery due to staff not being able to carry out roles as normal for a short period of time. Staff were flexible in their approach to work which ensured disruption was kept to a minimum. In addition, the Swallows Leisure Centre, surrounding offices and carpark had to close to service users for health and safety reasons because of roof damage due to high winds. Services delivered from the location were suspended as a result. Some areas were able to open again within 1 week.

Known Financial Costs

Severe weather events during 2020 saw financial impacts on Kent's services and residents totalling £17,000⁷ reported through SWIMS. Documented costs incurred by SWIMS users included:

- Kent County Council's Community Learning and Skills Service incurred £14,000 of costs for repairs and maintenance to several Adult Education Centres across the county. Repairs

⁷ All figures reported are based on available data recorded on the system as of 22nd February 2021.

included replacing fencing, ceiling tiles, mending roofs, removing trees and asbestos handling and removal.

- Kent County Council's Gypsy and Traveller Service incurred £3000 of costs for employing a drainage company equipped with gully suckers to attend Windmill Lane Caravan site and empty gullies and remove surface water from flooded plots.

It is important to note that the financial costs of the severe weather events in 2020 are significantly underestimated, especially with the inclusion of the effects of Storm Bella and the exceptional August heatwave. Of the 103 services registered on the system, only 11 services recorded impacts across the year.

Reputational Impacts

Both positive and negative reputational impacts were recorded in 2020. These are summarised below. Overall there were more positive reputational impacts reported than negative.

Negative Reputational Impacts

- Kent County Council's Community Learning and Skills services reported that they were unable to maintain normal service delivery during some periods, because of flooding throughout the year and learning was disrupted on some occasions as a result.
- The Community Learning and Skills Service also reported negative reputational impacts specifically at the Tonbridge Adult Education Centre where there has been periods of building works and boiler repairs. Some service users were moved from Tunbridge Wells Adult Education Centre to new classrooms at the Tonbridge Centre which were then affected by flooding shortly afterwards.

Positive Reputational Impacts

- Kent Community Wardens were praised for their assistance with the response after the storm event on 12 - 13 February 2020. Wardens assistance with clearance of debris after the storm in locations across Kent.
- Swale Borough Council's Property Service responded rapidly to ensure repairs to Swallows Leisure Centre were carried out as quickly as possible to ensure the least disruption to services delivered at the Centre. Some areas were able to reopen within 1 week of initial damage occurring.
- The Property Service also reported a quick turnaround for repairs at 3 other locations in Swale during 2020. Swale Borough Council also ensured tenants, residents and staff members were kept informed of progress with repairs.

Key Responses

Along with their impacts, SWIMS users also recorded how they responded to the severe weather events. A summary of these responses is below.

Property Repairs and Maintenance - KCC Community Learning and Skills Service incurred costs to repair ceiling tiles and roof at Tonbridge Adult Education Centre and the perimeter fence at Sevenoaks Adult Education Centre. Asbestos removal contractors were called in to make safe Sevenoaks Adult Education centre after tree fall damaged the roof. Tree removal contractors were

also contracted to remove fallen tree from location. Contractors were also employed to repair damage to roof and ceilings at Dartford Adult Education Centre. After storm Bella contractors attended an emergency callout to Sevenoaks Adult Education Centre to assess damage and estimate costs for repair of 3 flooded classrooms. The main reception at Sheppey Adult Education Centre was repaired due to broken glass caused by high winds in May.

In Swale, Tenants and residents were informed of closures and contractors were employed to inspect, survey and repair roof leaks to Swallows Leisure Centre, Sheppey Healthy Living Centre and other damaged buildings.

Drains Unblocked/Repaired – KCC’s Gypsy and Traveller Service mobilised a drainage company with gully suckers to attend Windmill Lane Caravan site to empty gullies and surface water from each flooded caravan plot.

Equipment Deployed – Upon notification by Kent Resilience Team and Gypsy and Traveller Service, 70 sandbags were deployed by Highways management team to Windmill lane Caravan site to protect plots from further flooding in August.

Staff Carrying out Restricted Duties – Kent Community Wardens were advised to restrict time spent in the sun in August Heatwave to minimize risks to themselves from high temperatures. Restricted duties were carried out inside by Wardens to ensure their safety. Community Wardens were also advised to work inside wherever possible during storm on 13th of August to minimise risks to themselves. Similarly, planning staff without internet access at Swale Brough Council diverted to tasks that did not require internet access or worked flexibly to carry out hours when internet access resumed.

Staff Working Hours Adjusted - Due to delays in reaching deployment areas due to flooding, some community wardens altered their hours worked to ensure service users’ needs were met and impacts on service delivery were as low as possible.

Key Considerations for the Future

From the data collected and recorded in SWIMS from the events of 2020, there are several considerations for SWIMS users to increase their resilience to severe weather.

Data gaps: There are continued data gaps in the information entered onto the system, during 2020 only 11 services entered data from 3 different organisations. Moving forward, financial information should be captured by all services to improve the evidence base to support future planning and budgeting for severe weather, as well as supporting funding or reimbursement claims. For more information on completing data entry comprehensively, please contact the SWIMS team.

Critical Infrastructure: A need to review critical infrastructure (property) which, if left vulnerable, can affect a wide variety of services and service users for varying degrees of time. Kent County Council properties continue to cost the Council a large sum of money to repair, and there is a need to review the resilience of these buildings to future proof them against more frequent severe weather events (e.g., more regular maintenance of drains/guttering, replacement or strengthening of property infrastructure).

Health: Services should capture impacts on the health and wellbeing of staff and residents.

Release of New System: Following the release of the new and improved SWIMS system to users in Autumn 2020 the process for completing data entry is improved for ease of use and allows users to capture additional data relevant to resilience planning in their own Services. The system includes new functions including facilitating services to capture KPI's, and view and analyse their data using the dashboard tool to highlight key data on events, impacts, responses, and costs. The new system also allows users to export data in different formats for analysis outside of the system. For more information or to request training on the new system, please contact the [SWIMS](#) team.