Monitoring the impacts of

severe weather

SWIMS Event Summary Report - *January to December 2012*

SWIMS has been developed by Kent County Council
in collaboration with Kent Partners and IESE

Improvement and Efficiency South East

Kent County Council kent.gov.uk

Contents

Photo by Dean Williams

Executive Summary

This report summarises the impacts and responses experienced by public sector service providers across Kent during one year's worth of severe weather events (January to December 2012). Since the Severe Weather Impacts Monitoring System (SWIMS) went live at the start of 2012, 14 severe weather events have been logged on the system. These events have resulted in over 90 impacts and responses affecting the 56 services registered on SWIMS.

The financial impact on county services and the wider Kent community totalled £852,387. Of these costs, the low temperatures (including heavy snow) event in February 2012 cost the county most financially, with £700,260 accrued in just two days. The storms and gales events had the highest response costs for the county, costing services over £90,000 to respond to these severe weather events.

Overall, services were disrupted by these events for a total of 90 days and 76.5 hours, with services receiving 2815 weather related calls. Public sector staff were affected across Kent and 130,254 service users were affected.

Services most frequently impacted by these weather events were:

- environment and corporate assets
- community, learning and skills
- emergency planning
- highways & transportation
- community wardens
- environmental services
- cleansing and street scene/waste
- economic services
- property.

Emergency services and other public sector organisations (such as the Environment Agency) were also significantly impacted by severe weather.

Through using SWIMS in this first year, a lot of good data have been captured for the county helping the public sector to build up its clearest picture yet of how Kent and its public services have been impacted by severe weather. However there are some significant gaps meaning that the data collected are likely to under-represent the true scale of the impacts experienced. In response:

A number of recommendations have been made in this report and we urge all users to consider these and help maximise the value and benefits the Severe Weather Impacts Monitoring System (SWIMS) can provide.

We will be using the data and information collected through SWIMS to inform our risk and business planning as well as for the identification of key projects to take forward where the business case has been established through SWIMS. This report will be taken to the Local Resilience Forum and management teams to ensure that actions are developed as appropriate and the evidence base SWIMS provides is shared widely. In addition during 2013 we will begin to develop thresholds for severe weather events and their impacts to determine how these may be used to better inform severe weather alerts. We will also work with the UK Climate Projections (UKCP09) and weather generator to determine how climate change may impact Kent in the future.

Rolling SWIMS out across the UK

SWIMS has gathered significant interest since its inception in 2011. As such, a software licence has been agreed with the Climate Ready programme (in partnership with the Environment Agency, Defra, LGA and Climate UK) for SWIMS to be rolled out across local authorities nationally. Climate UK will host the system and support a staged roll out to all willing local authorities by the end of 2013.

In addition, SWIMS will be incorporated as an action to support local authorities in the Climate Ready programme itself (the front face of adaptation action nationally) and Climate Local. Kent partners signed up to Climate Local Kent in September 2012 and have committed to a series of targets for both climate change adaptation and mitigation. Further information is available at:

www.kent.gov.uk/climatelocalkent

Introduction

In Kent, we have always felt the effects of severe weather events. In 2009, Kent County Council (KCC) carried out a Local Climate Impacts Profile (LCLIP)[1] to assess the vulnerability of Kent's services (and community) to past severe weather events over a 14 year period. The study revealed severe weather has had a heavy impact on our services and community socially, economically and environmentally, with severe weather directly costing Kent services £35 million over the 14 year period and a further £428 million in additional costs.

The LCLIP study also illustrated that historically, we (as a county), have not collected coordinated data and information on severe weather. Historically there has also been a particular gap around the financial data collected (only 5% of impacts captured in the LCLIP study had financial implications attached). This means that the figures and data collected are likely to under-represent the true scale of the impacts Kent has experienced from severe weather.

These impacts could be further magnified when we consider the projected changes in our climate into the future.

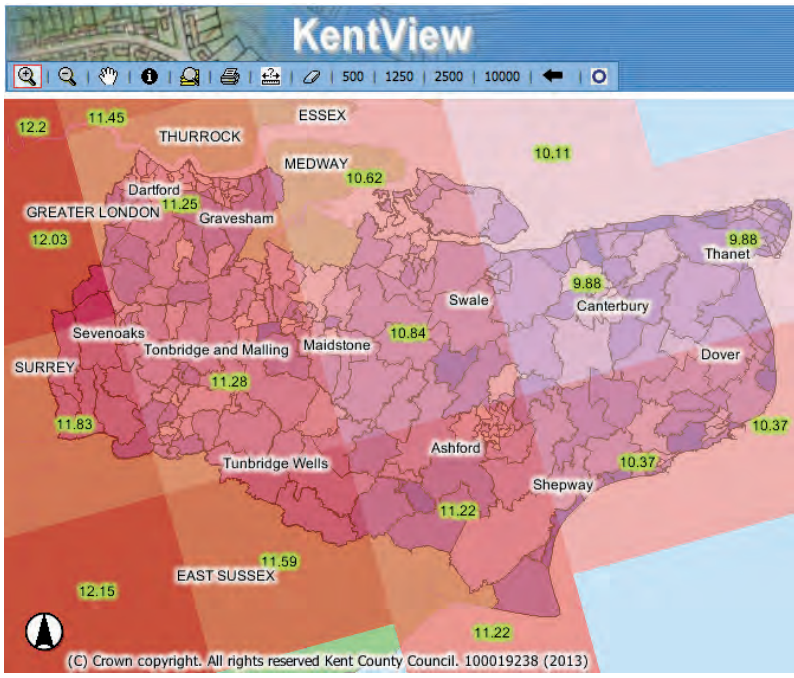
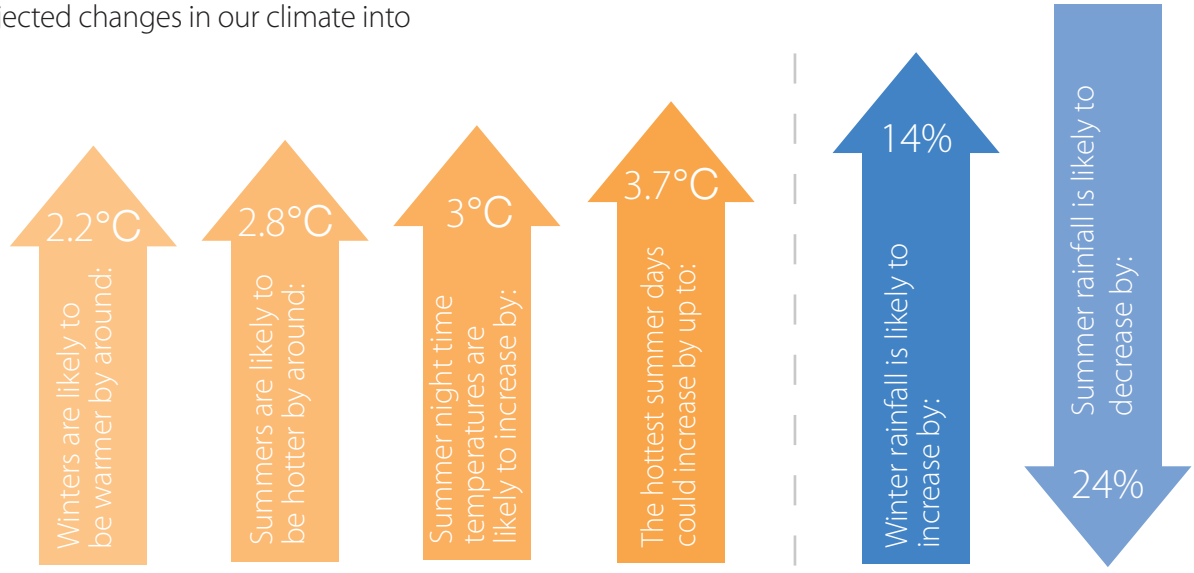


Figure 1: KentView mapping tool, showing projected temperature changes to the warmest days in summer (0C) in the 2080s, if greenhouse gas emissions are high.

Key findings from the UK Climate Projections 2009 (UKCP09) suggest that by 2050 in Kent:



1 For more information on the LCLIP, please visit the SWIMS web page on the Kent County Council website at www.kent.gov.uk/SWIMS

Kent Statistics

- The county has a long coastline (approximately 345 kilometres in length) and approximately 8.3% of Kent's population is already at risk from flood events (over 70,000 properties)
- Kent is located in the South East of England and is one of the warmest parts of the UK with the hottest temperature on record experienced at Brogdale in Faversham (38.5ºC)
- Kent is one of the driest parts of England, coupled with high population density and household water use.

We are also likely to experience an increased frequency of severe weather events, posing significant risks, with:

- more 'very hot' days - what we consider extreme currently will likely prove to be average in 30 years
- more intense downpours of rain leading to increased flood risk, particularly surface water flooding
- increased risk of coastal flooding
- changes in storminess and high winds.

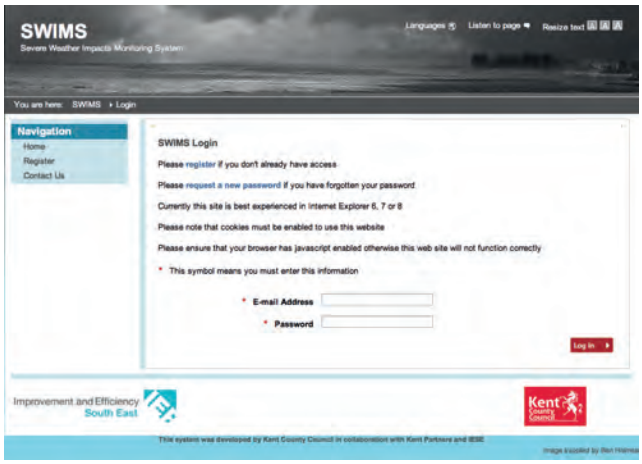
To support the business case for action, Kent County Council and Kent partners developed the Severe Weather Impacts Monitoring System (SWIMS). SWIMS aims to fill the gap in the way we currently assess our vulnerability (and resilience) to severe weather events, by providing a central data point. SWIMS is an online data capture facility enabling teams/business units or services to record how their service and operations are being affected by severe weather events.

Key data that can be captured through the system includes:

1. impacts (each user can record information on how their service and service users have been affected during the event)
2. responses (each user can record information on how they have responded to an event, both in the immediate aftermath of the event and any longer-term responses or adaptive changes they are making in light of the impacts identified.

Each service can then generate a report through the system to show how their service and organisation has been affected by severe weather.

SWIMS is intended to provide a valuable decision-support tool for service providers, helping to identify the impact of severe weather on services, communities, residents and the natural and built environments. By using this system, individual teams/business units/services and organisations can build up a picture of their vulnerability to severe weather and develop business cases for taking adaptive action.
The system also enables organisations to share data across their administrative area, so that common barriers and areas of vulnerability across services can be addressed in partnership. The data captured will also highlight areas of good practice, ensuring that service providers can continue to provide a valuable service to their community and make longer-term cost savings[2].



Climate Ready Programme

The Climate Ready Programme, run by the Environment Agency on behalf of central government, is a programme to deliver action on climate change adaptation across the UK. Climate Ready provides tools and information to support businesses and other organisations in preparing for the impacts and opportunities of climate change and is working with key sectors of the UK economy to find the best resources, tools and guidance to help them prepare, now and for the future.

SWIMS has gathered significant interest since its inception in 2011 and as a result will be incorporated as an action to support local authorities in the Climate Ready programme. As part of this a software licence has been agreed by Climate Ready (in partnership with Defra, LGA and Climate UK) for SWIMS to be rolled out across local authorities in the UK. The system will be hosted by Climate UK and pilots will be in place from April 2013 with a view for SWIMS to be available to all local authorities from September 2013.

For more information on the Climate Ready programme, visit: www.environment-agency.gov.uk/research/137557.aspx

2 Please see the Stern Review for more information on the cost savings which can be made by preparing now for changes in our future climate.

Headline Impacts for Kent

Since the start of 2012, 14 severe weather events have been logged on SWIMS and over 90 impacts and responses have been captured by the 69 users registered on SWIMS. Of these, the county has experienced 11 storms & gales events (including flood impacts from downpours), one drought event and two low temperatures events (including heavy snow). Users, representing over 50 services and 17 organisations across Kent have captured data on severe weather using the tool.

The direct financial impact on county services and the wider Kent community totalled £852,387.95 with wider implications on staff time, service delivery, reputation and in some cases the structural integrity of buildings and other infrastructure.

2.1 Storms & Gales (including downpours)

The eleven storms and gales events experienced in Kent over 12 months cost residents and the county's public services £55,330. Storms and gales had the highest impact on call volumes (2,190 calls were received relating to these events); on staff; and on the duration of time services were affected for (totalling 54 days 76.5 hours).

Key impacts experienced from these events included:

- Dover District Council's (DDC) property maintenance services team received 300 calls in one day (3rd January), surpassing the previous record of 200
- the Port of Dover faced disruptions to ferry sailings due to excessively high wind speeds
- 11 residents were affected by surface water flooding in January
- Kent Fire & Rescue Service received four calls related to the April storms
- during a two-day storm in January, 120 properties were affected in the Dover district with minor damages to ridge tiles, chimneys, fences, guttering and aerials. A wind turbine was also closed, on safety grounds and 14 trees fell across roads, footpaths, fences and boundary walls
- costs to KCC's Highways and Transportation service amounted to £48,350 from storm and gales events
- the Kent Fire & Rescue Service received 41 calls relating to high winds or flooding in January
- a roof panel service check was required at a swimming pool in the Swale district, costing the district council £500

Did you know...

8 out of 10 risks in Kent's Community risk register are severe weather related.

Kent Community Risk Register – Risk Rating Groups

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KRF1	Incident in road tunnel	24
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KRF7	Railway Incident – Channel Tunnel	24

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1.3	Fire / explosion at gas terminal as well as LPG, LNG	13
1.11	Fire / explosion at an offshore fuel pipeline	14
1.14	Localised explosion at a natural gas pipeline	15
1.15	Very large toxic chemical release	15
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1.23	Biological substance release	18
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Medium Cont…		Page
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4.1	Land movement	30
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4.4	Major reservoir dam failure / collapse	30
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Kent Resilience Forum

PREPARING FOR EMERGENCIES IN KENT AND MEDWAY

For more information, visit: www.kentprepared.org.uk

- Dartford tunnel closed for two mornings in January, affecting the Mental Health First Response and Interventions Service. Mental Health Duty workers commuter travel was affected, delaying work, whilst a skeleton staff operated the service.
- KCC's Highways and Transportation service received over 1,700 calls relating to storms and gales events throughout the year. Of these, 861 calls were received in 24 hours on the 3rd of January. This was a 65% increase on forecasted volumes
- two fatalities occurred due to stormy conditions in January and September
- markets within Sheerness and Faversham were cancelled in the Swale district
- the Environment Agency's Flood Incident Management team opened an Area Incident room during the storms in April, June and July. Duty staff were required to work in shifts and the service was impacted for ten days
- KCC's Highways & Transportation service attended 45 incidents during a two-day storm in June. KCC's Emergency Planning team attended a further 10 incidents.

Weather Statistics

In Kent it is useful for us to collect weather information so that we can begin to investigate what the thresholds for impacts from a severe weather event might be in Kent. For example, this could be determining the temperature for an event becoming 'severe' (such as a heatwave). In Kent, we receive weather data from the Met Office during severe weather events, to assist this.
In addition we will also use this information to better understand how we may be impacted by climate change, using tools such as the UKCP09 weather generator.

Location	*Mean Wind Speed (Knots)*	*Max Gust Speed (Knots)*
Ashford	25	47
Dartford	26	49
Dover	35	59
Maidstone	24	61
Sevenoaks	26	49
Thanet	32	47
Tonbridge & Malling	24	61
Tunbridge Wells	25	47

Table 1: Weather data based on the highest mean wind speed and maximum gust observed at each weather station on the 3rd January 2012.

- Sevenoaks Adult Education Centre accrued costs of £4,000 from water damage to the building. This included substantial damage to the reception area, ceilings, floorboards and carpet with some equipment damaged beyond repair. The main phone exchange was also disrupted for the building
- on the 20th July, two weeks of rain fell in two hours, affecting 20 properties across the Dover district. Roads and shops were forced to close costing £1,185
- surface water flooding affected a Community, Learning and Skills building and two properties in Maidstone in September
- minor B roads were impassable in the Sevenoaks district due to deep surface water flooding, affecting 100 residents. Kent Community Warden staff were unable to access villages to carry out their usual visible presence
- the excessive rain cost Swale Borough Council property services £1,000 due to a concaved roof at Sheerness swimming pool
- throughout October, trees blocked roads in the Tunbridge Wells district and damaged street property. Flooding damaged a property at Warden Bay Holiday Park on the Isle of Sheppey, costing £225.

Low temperatures (including heavy snow)

The two low temperatures (including heavy snow) events in February and December 2012 cost the county most financially, with £700,260 costs accrued from these events. The two-day event in February had the greatest impact on county infrastructure (affecting 59,000 properties), and impact on service users and residents (130,100 individuals were affected).

The key impacts experienced from these events included:

- staff at Ashford Borough Council, the Environment Agency, KCC and the NHS were prevented from travelling into work due to adverse weather conditions
- one Domiciliary Agency for adult social care requested assistance during the event in South West Kent and virtual care services were directed to the provision and support of 4x4 vehicles
- snow across Kent affected the entire road network. KCC's Highways and Transportation service entered a 'snow emergency' for 5 days in February, costing £700,000. 575 calls were received in that time
- Maidstone Borough Council garden waste collection services were suspended for 5 days to concentrate resources on waste and recycling collections
- schools closed in the Dover District on the 6th
- Swale Borough Council waste collection services were disrupted, affecting 59,000 properties and 130,000 residents
- Tunbridge Wells Borough Council's waste and recycling services were forced to reduce collections. Mechanical sweepers were unable to sweep and contractor staff unable to work. Costs of £160 were accrued and 100 service users were affected.

Location	**Maximum air temperature** (°C)	*Minumum air temperature* (°C)	*Mean (average) air temperature* (°C)
Ashford	1.0	-2.4	-0.5
Canterbury	1.0	-2.4	-0.5
Dartford	3.2	-1.2	0.7
Dover	1.9	-4.2	-1.2
Gravesham	3.2	-1.2	0.7
Maidstone	4.2	-1.7	0.2
Sevenoaks	2.1	-1.7	-0.3
Shepway	1.0	-2.4	-0.5
Swale	4.2	-1.7	0.2
Thanet	1.7	-3.8	-0.9
Tonbridge & Malling	2.1	-1.7	-0.3
Tunbridge Wells	2.1	-1.7	-0.3

Table 2: Weather data based on the highest maximum and lowest minimum air temperatures observed at each weather station between the 5th and 6th February 2012.

Responding to events

Over the year, Kent services spent £96,797 to respond to severe weather events. From these responses, a number of good practices can be identified (such as the case studies on pages 13 & 14, with services responding both in the immediate aftermath and in the longer term, to prepare for severe weather and minimise the impacts on their service delivery into the future.

Storms & Gales (including downpours)

Storms & gales events had the highest response costs for the county, costing services £96,477 to respond to these events. Some key responses included:

- the Environment Agency flood incident management team responded to storm and gale incidents throughout the year. The team diverted staff to priority areas and issued warnings and advice during stormy conditions in April, June and July
- the KCC Highways Management Centre diverted staff to deal with the high volume of emergency enquiries received within 24 hours on the 3rd of January. Two Road works and two Drainage Technical Support officers were appointed to make repairs, whilst three inspectors were appointed to respond to calls and other inspectors were put on stand-by
- in January, the fire service attended 41 incidents relating to strong winds and flooding including one fatality in Tunbridge Wells
- KCC Highways & Transportation service spent over £34,000 on arboriculture work in January to clear trees across Kent
- Sheerness and Faversham markets were closed for one day due to high winds in January. Market managers successfully consulted with business owners to ensure markets were postponed in April, ensuring the safety of residents
- KCC's Highways & Transportation team worked across the weekend clearing fallen trees and addressing localised flooding to ensure the road network was fully serviceable, during the strong winds in April
- KCC Highways & Transportation staff enforced several road closures due to fallen trees and dealt with 129 priority 1 emergencies[3] across four days in January
- ten Highways and Management service staff in KCC dealt with 102 calls relating to the flooding over 4 days
- in December, the KCC Highways & Transportation team spent over £25,000 to attend and deal with flood enquiries.

3 Priority one emergencies are the highest category for responding to enquiries. The KCC Highways and Transport service aim to respond to address these enquiries within 2 hours. Priority two emergencies are a category indicating that the service should address any enquiries/ issues within 1 - 7 days (through inspections). The service then carries out any further work (maintenance, repairs etc) within 21 days.

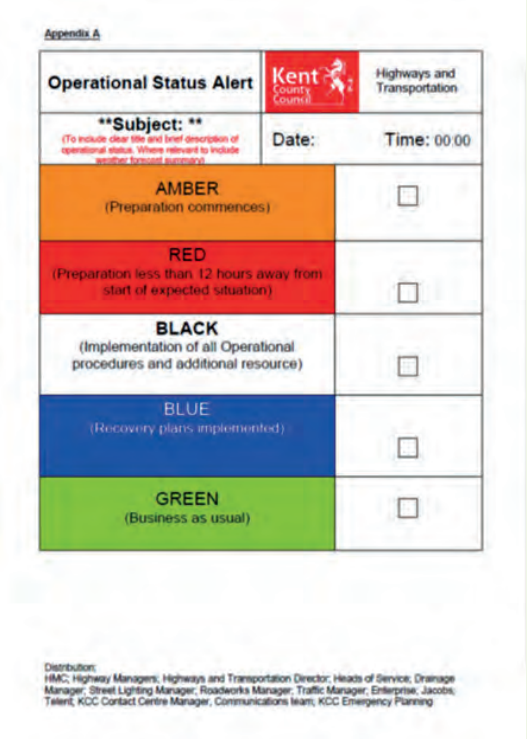
Case Study

Adaptation Response #1:

Kent Highways and Transportation develop new procedure to respond to severe weather events.

Following the high call volumes experienced during the storms and gales event at the start of January, KCC's Highways & Transportation service improved their procedure to manage adverse weather.

The new procedure involves suspending all emergency enquiries which were previously received and inspected by Priority Response Officers through the contact centre. Theses enquiries will now be passed to district managers who will assess all enquiries locally and pass to Priority Response Officers to action.



Appendix A

Operational Status Alert	Kent County Council	Highways and Transportation
**Subject: ** (To include clear title and brief description of operational status. Where relevant to include weather forecast summary)	Date:	Time: 00:00
AMBER (Preparation commences)		☐
RED (Preparation less than 12 hours away from start of expected situation)		☐
BLACK (Implementation of all Operational procedures and additional resource)		☐
BLUE (Recovery plans implemented)		☐
GREEN (Business as usual)		☐

Distribution:
HMC; Highway Managers; Highways and Transportation Director; Heads of Service; Drainage Manager; Street Lighting Manager; Roadworks Manager; Traffic Manager; Enterprise; Jacobs; Telent; KCC Contact Centre Manager; Communications team; KCC Emergency Planning

Some additional processes were also embedded in the procedure to make it more flexible including:

- conference call chairs
- the use of emergency status
- introduction of the 'Blue status - Recovery'
- the use of additional resource
- the implementation of a process when working 'Out of Hours'.

An operational impact warning document is also sent to key stakeholders (including local politicians) to keep them informed of how the highways service is preparing for potential situations before any arise – based on the weather that has been forecasted.

Benefit: This frees up contact centre advisors to answer more customer enquiries. The workload of Priority Response Officers is also eased, enabling them to maintain communications with stewards and contractors. More efficient time management of the situation also reduces the time roads are closed for due to obstructions.

Contact details: For further information, contact donna.terry@kent.gov.uk

Case Study

ADAPTATION RESPONSE #2

KFRS implement winter resilience preparatory measures to mitigate severe weather impacts.

Ahead of the cold weather in February 2012, the Kent Fire and Rescue Service (KFRS) operational resilience team proactively deployed winter resilience measures (including snow chains for fire appliances). Investment in this equipment was made in line with the KFRS 'Winter Strategy' which details how the Fire and Rescue service adapts its service delivery during cold weather. The chains were procured in advance of the cold weather, based on learning from impacts experienced in the winter of 2009-10.

The team invested in the equipment to help mitigate the effects of colder weather into the future and to ensure the service can continue to respond during snow and icy conditions. In addition to the snow chains a number of officers have 'All Wheel Drive' vehicles, and there are a number of off road vehicles across the county. Salt is ordered for KFRS stations to ensure pathways are kept clear and staff are encouraged to prepare with appropriate clothing and supplies. Each year, the service carries out a review of how its operations coped during the winter and looks to improve the resilience of the service in the years ahead.

Benefit: The snow chains have enabled vehicles to travel on roads that would otherwise not be traversable. Implementing these winter resilience measures has enabled the KFRS to continue to protect and serve the people of Kent, without being disrupted by the adverse affects of weather. Not only do the measures provide resilience in the winter, they also make KFRS staff safer throughout the year.

Contact Details: For further information, contact: peter.austen@kent.fire-uk.org

Low temperatures (including heavy snow)

Kent services took significant steps to respond and continue to provide a valuable service to Kent residents and the community throughout the ice, snow and colder weather:

- both services in Ashford Borough Council and the Environment Agency introduced flexible working methods to minimise disruption to service delivery, when staff were unable to get to work
- KCC's Emergency Planning team assisted volunteers at South East 4x4 Response, to enable care providers to reach vulnerable clients, costing £320
- the Highways Management Centre was opened in February, during low temperatures and snow, to provide a single communication point from which to co-ordinate activity. The Centre also reported on road closures and district activity to enable the road network to be opened in time for Monday morning peak travel time
- Maidstone Borough Council diverted street cleansing, ground maintenance and vehicle fleet staff to snow clearance activities across the borough
- Tunbridge Wells Borough Council street cleansing operatives gritted streets to enable refuse service vehicles to operate, limiting missed collections to under 100.

Flooding in Kent

A total of 16 flood and water-related incidents were recorded as affecting services across Kent throughout the year. One of the incidents related to groundwater flooding in the Swale borough whilst the remaining 15 occurrences of surface water flooding affected the majority of boroughs and districts across Kent. Of these, highly localised flooding was also captured by services and all of the county's 12 boroughs and districts were impacted by flooding throughout the course of the year. There were no fluvial or tidal/coastal flooding incidents recorded as having affected Kent services and residents.

Out of the 16 flood and water incidents recorded on SWIMS, 21 associated impacts and responses were captured on the system by services. Impacts included surface water flooding affecting 11 Kent residents in January, whilst KCC's Highways & Transportation service dealt with 4 surface water incidents (and trees) in Thanet, costing £6,000. In Sevenoaks, an Adult Education Centre accrued damages of £4,000 from water damage to the building.

The flood and water incidents also prompted several responses. The Highways & Transportation service co-ordinated traffic management and deployed several flood measures in June (including boards, flood sacks, gully suckers and cleansing and jetting gullies, whilst repairs to water damage in Dover cost £1,185. In response to the September storms and gales, KCC's Highways & Transportation service reviewed its management process for attending flood sites. This included considering the use of road closures to abate water naturally from flooded areas.

Kent Local Flood Risk Management Strategy

Kent County Council and partners are in the process of developing a Local Flood Risk Management Strategy, to set out a countywide plan for managing the risks of local flooding (Surface water, Groundwater and Ordinary Watercourses) across Kent. Through the strategy local management authorities (KCC, the Environment Agency, local authorities, water companies, internal drainage boards and partners) aim to work together to improve understanding of flood risk across the county and where possible, reduce these risks to protect the people and economy of Kent. The consultation on the draft strategy will end in February, with the final strategy due to be launched in late spring. For further information, please visit the Kent County Council website: www.kent.gov.uk/flooding

Reputation

Through SWIMS, Kent services have begun to record the reputational impact severe weather is having on their services (whether this be positive or negative). Findings demonstrate a mixed response from residents and service providers, with services receiving both praise and criticism for the operation of their services during severe weather events. For example during a low temperatures event in February the Kent Highways and Transportation service received approximately 4000 calls and emails regarding highways matters and due to their response received 65 compliments from the public and praise across Kent County Council. However the team also received 37 complaints for the same event, by residents who were unhappy with the efforts of the team. Similarly, teams in Tunbridge Wells Borough Council received both praise and criticism for cancelling the Winter Lantern Parade during severe weather in February; whilst teams in Maidstone received mixed responses from residents during delays to waste collections.

Through SWIMS we have also begun to collect reports and coverage of severe weather events in local media, to further understand public perceptions of services during severe weather events. Collecting media information can also help identify wider impacts or responses that may not have been captured by individual teams or organisations.

Overall, the media coverage of Kent services during severe weather was positive. Local media depicted the positive aspects of the snowy weather and commented on the role of Kent services positively, highlighting their gritting efforts.

However, reports in the media were only captured for one low temperatures event and it is unknown how the reputation of services was affected for the storms & gales and heatwave events.

Recommendations

Over the course of the year a wealth of information, including financial data, has been captured by services providing a good evidence base for reviewing and taking forward actions as appropriate. However, analysis of the data and the experiences of SWIMS users have highlighted a number of areas where data collection could be improved. We have therefore developed a series of actions and recommendations for SWIMS users to take forward in 2013 and these are provided in Annex 1.

Conclusion

Through using SWIMS in this first year, a lot of good data have been captured across the county, helping the public sector to build up its clearest picture yet of how Kent and its public services have been impacted by severe weather. However there are some significant gaps meaning that the data collected are likely to under-represent the true scale of the impacts experienced.

In response, a number of recommendations have been made in this report and we urge all users to consider these and help maximise the value and benefits the Severe Weather Impacts Monitoring System (SWIMS) can provide: chiefly in helping services build a strong evidence base and develop business cases for taking adaptive action, increasing their resilience to severe weather events and ensuring they can continue to deliver effective and valuable services to the Kent community.

Links to further information

To find out more about SWIMS and why we need to prepare now for a changing climate, please find below some further sources of information:

- Kent County Council Climate Change pages: www.kent.gov.uk/climatechange
- Kent Environment Strategy: www.kent.gov.uk/environment_and_planning/environment_and_climate_change/kent_environment_strategy.aspx
- Kent Adaptation Action Plan: www.kent.gov.uk/environment_and_planning/environment_and_climate_change/adaptation_plan.aspx
- SWIMS: www.kent.gov.uk/SWIMS

Annex 1: Actions and Recommendations for SWIMS Users

	Action	*Time to implement*	*Lead Assigned To Action*	*Why is this action needed?*
1	***Record the financial cost of impacts and responses recorded on SWIMS (an estimate is sufficient)*** **Examples include costs from:** • Property/structural damage • School closures • Tunnel/port/road closures • Purchasing services or paying contractors • Lost staff time/overtime/staff cover	2013 onwards	All SWIMS Users	Costs form a key element in developing business cases for taking further actions to prepare your service. Of the 55 impacts recorded on SWIMS only 19 costs (£) were assigned to impacts. Of the 38 responses recorded on SWIMS there were only 10 cases where the financial costs of the response were recorded. This demonstrates a significant gap in identifying the true financial impact severe weather is having on our services, meaning the current costs detailed in this report are underestimated.
2	***Quantify impacts and responses (additional to financial costs)*** Estimates are useful, if exact figures cannot be provided (please use the free text box to indicate where figures have been estimated).	2013 onwards	All SWIMS Users	Numerical data can be very powerful when building cases for action or developing understanding of impacts. Currently there is some discrepancy between the free text and actual numbers recorded on the system, e.g., the number of staff or buildings affected may not be recorded numerically despite being mentioned in the free text box.

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3	***Encourage further public sector representatives (emergency responders) to sign up to SWIMS*** Including colleagues from the NHS, Kent Police, District/Borough Councils and Port Authorities to ensure they are represented on SWIMS.	2013 onwards	Kent SWIMS Admin Team	The majority of public sector services are represented on SWIMS; however there are some key services and organisations who are currently not represented, such as Kent Police and frontline services from the NHS. As a result some key impacts are currently being lost through SWIMS such as: • Details on the fatality in Tunbridge Wells in January and the involvement of the emergency services; • Financial costs from port, road, rail and bridge closures; • Costs of sea emergencies; • Impacts on the health economy of Kent residents from slips, trips and falls, and emergencies during severe weather conditions; • Crime and social impacts.

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4	***Encourage public sector representation: public sector services*** Existing services who are leading on SWIMS for their organisation to encourage the following services within their organisation to register for the tool (or please send through contact details to the Kent SWIMS Admin team): • Biodiversity and heritage services • Environmental services (enforcement, maintenance etc) • Emergency planning • Health (environmental and social care) • Coastguard and flood services • Public Sector Estate- facility management/property management teams • Country park visitor centres • Libraries, children centres, gateways and other public buildings • Waste management and collection services • Education (including schools)	2013 onwards	Service leads from District and Borough Councils	There is good coverage of frontline and other key public services who could be impacted by severe weather on SWIMS. However, the services represented vary across organisations and some key services are not represented, meaning the true impacts of severe weather on the county are currently being underestimated.

	Action	Time to implement	Lead Assigned To Action	Why is this action needed?
5	***Investigate private sector representation on SWIMS: key infrastructure and business***	2013 onwards	Kent SWIMS Admin Team	Through SWIMS, it is evident that there are further opportunities to capture severe weather data, including the impact large private sector services are having on the public sector and on the Kent community and residents. Data which would further enhance the value of SWIMS includes: • The impacts and responses (including insurance or other financial costs) of transport providers, e.g., to capture South Eastern train service disruptions, disrupted bus services, airport disruptions and the impact on service users and commuter travel (including public sector staff travelling to work); • Utilities e.g. to capture water, electricity and gas disruptions during severe weather and the response of utilities companies;
6	***Investigate private sector representation on SWIMS: Small- and - Medium-sized Enterprises (SMEs)*** Undertake a scoping/feasibility study to investigate the use of SWIMS by SMEs	2013 onwards	Kent County Council Sustainable Business Team	SWIMS can also provide opportunities for SMEs to increase awareness of the risks of severe weather and build the business case for increasing resilience in the sector. Defra has therefore funded a feasibility study to explore the appetite of businesses for a system such as SWIMS.
7	***Investigate the use of SWIMS by community groups***	2013 onwards	Kent SWIMS Admin Team	SWIMS could also provide an effective engagement tool for communities to understand their risks and opportunities and plan accordingly. As such we will be investigating whether there is an appetite for a community level tool linked to the wider Kent SWIMS system.

	Action	Time to implement	Lead Assigned To Action	Why is this action needed?
8	***Record media information on SWIMS for all events***	2013 onwards	KCC Media team	Media coverage was only captured for 1 out of the 14 events on SWIMS whilst the reputational impacts captured by services on SWIMS were few in number. Therefore, more can be done to ensure we gain a true picture of the impact severe weather events are having on the reputation of Kent services.
9	***Record Long-term impacts and responses*** Log back in to SWIMS to record the long-term impacts on your service in the impacts sections of SWIMS. Record how your service is preparing for the long-term in the responses section of SWIMS. For example: • Capture impacts from heatwaves and longer-term severe weather events. • Capture the long-term responses your service is making, to increase its resilience to these types of events into the future, including any longer term plans, procedures or investments.	2013 onwards	All SWIMS Users	**Recording long-term impacts:** no data was recorded for long-term events logged on SWIMS (e.g., the drought Kent experienced in April). This could be because no impacts occurred on services as a result of this event. However there is the risk that impacts have not been recorded or the most relevant services (such as water companies) are not represented on SWIMS. **Recording long-term responses:** There is currently a gap in recording longer-term responses to events. This could be the adaptive responses that a service is carrying out such as a new plan or procedure or building flood resilience into properties. In addition to providing the evidence base for taking action, SWIMS can also assist teams in developing actions – by showcasing good practice and ideas by those who already have the resource to undertake adaptive actions.

Contact Us

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