

**To:** Kent Flood Risk Management Committee – 9<sup>th</sup> March 2020

**From:** Stephanie Holt-Castle, Interim Director of Environment, Planning and Enforcement

**Subject:** December 2019 Floods KCC Debrief Report

**Classification:** Unrestricted

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**Summary:** Overnight on 19<sup>th</sup> into 20<sup>th</sup> December 2019 surface water, highway and fluvial flooding impacts were felt right across Kent. At least 65 residential and commercial properties were affected by internal flooding, with others affected by surcharging sewerage and domestic drainage systems. Around 150 residents were evacuated from their homes at the peak of the flooding. Disruption and damage to highway and other transport networks also resulted. KCC undertook an internal debrief on 7<sup>th</sup> January to identify lessons learned. Kent Flood Risk Management Committee is requested to provide oversight and scrutiny of the recommendations arising from the debrief and contribute any additional learning from the KCC response.

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## **1. Background**

- 1.1 This report sets out policy and practice recommendations arising from the KCC internal debrief initiated to capture lessons learned from flooding experienced across Kent following an exceptional rainfall event overnight on 19<sup>th</sup> and into 20<sup>th</sup> December 2019.
- 1.2 The County Emergency Centre (CEC) at Invicta House was mobilised at 07:00 on Friday 20<sup>th</sup> January and worked closely with the Environment Agency Incident Room with which a direct telephone link had been established early on, and a range of other partners.
- 1.3 Over the weekend of 21<sup>st</sup> and 22<sup>nd</sup> December the CEC function moved onto a virtual footing, administered by the Duty Emergency Planning Officer (DEPO), Resilience and Emergency Planning Manager, Duty Communications Officer and Highways Senior Duty Officer. Strategic oversight was delivered through the on-call Duty Director. KCC personnel, including officers from Highways and Social Care Out of Hours, delivered a range of operational roles on the ground, often in challenging conditions, throughout this weekend.
- 1.4 As the weekend progressed, the situation on the ground gradually improved. However, some further isolated property flooding occurred across parts of the Low Weald, as pulses of flood water moved through the River Medway catchment towards the sea. Kent Highways and partners supplied sandbags, flood sacks and other practical interventions in an effort to limit impacts upon vulnerable properties.
- 1.5 Significantly, 150 residents were evacuated from the Little Venice Country Park and Marina near Yalding on the Saturday, before any flooding had occurred and during daylight hours. Adult Social Care undertook assessments and supported any potentially vulnerable residents. The site was subsequently

flooded but all floating platforms functioned effectively, protecting the residential caravans from significant damage. All evacuated residents were subsequently back in their homes by 24<sup>th</sup> December.

- 1.6 Interventions to address highway and surface water flooding were the focus of sustained KCC activity throughout this event. Some 200 calls were received by KCC connected to the flooding, with localities across Mid and West Kent hardest hit. Culverstone Valley, M26 J2a, Chart Sutton, East Peckham, Tonbridge, Staplehurst, Five Oak Green, Yalding and Collier Street all sustained flood impacts. Wherever it was technically feasible early preventative interventions were undertaken. For example, at The Quarries, Boughton Monchelsea, KCC worked alongside partners to introduce warning signage and to pump rising floodwaters to tankers, thus protecting nearby property, as well as allowing recovery of stranded cars.
- 1.7 The River Len east of Maidstone, which has historically been implicated in destructive flooding in the County Town, was a further focus of KCC activity. The County Council's legal and regulatory duties for offsite emergency planning for reservoirs saw proactive engagement with the Environment Agency and landowners on water level management and function of dam structures and sluices. No property flooding was observed along the course of the River Len and all contained waters operated safely, however, some surcharging from wastewater infrastructure and pollution did occur and liaison is now ongoing with Southern Water to address root causes. It is worthy of note, in light of the Committee's recent interest in natural flood solutions, that the re-naturalised corridor of the River Len east of Maidstone town centre provided storage for a significant volume of floodwater within its restored woodland and wetland.
- 1.8 The Community Warden service was particularly active in the Dartford area during the flooding, supporting local communities and providing an incident liaison role with 'eyes and ears on the ground' in support of the CEC.
- 1.9 Yalding saw significant KCC and partner interventions through Friday and into the weekend, with its position at the confluence of the Rivers Medway, Beult and Teise bringing challenges. The innovative Confluence Group of stakeholders met regularly throughout the flooding to discuss overall effectiveness of local planning and response. Significantly, a number of local road closures were recklessly ignored by some drivers.
- 1.10 Neighbouring East Sussex saw the closure of the busy Eridge Road as the result of a culvert collapse. This seriously impacted routes in and out of Tunbridge Wells. KCC Highways worked closely with colleagues in East Sussex to minimise the impact of this closure. A landslip also led to the closure of the railway line between Tonbridge and Redhill.
- 1.11 The threat of groundwater emergence intensified in East Kent as a result of the rainfall associated with this weather event. Flows in the Nailbourne, near Canterbury, required closure of South Barham Road and installation of demountable barriers to protect The Causeway.

## 2. Debrief

- 2.1 In line with best practice an early internal debrief took place on 7<sup>th</sup> January 2020 to capture lessons learned from the December flooding. Outputs also enabled effective engagement with a subsequent multi-agency debrief which was held on 20<sup>th</sup> February. Sixteen KCC personnel participated in the internal debrief, which followed established Local Resilience Forum structured debrief protocols and was chaired by the Resilience and Emergency Planning Manager.
- 2.2 The resultant internal debrief was then written-up by the Resilience and Emergency Planning Service with outputs circulated to participants in draft for final sign-off ahead of its being tabled at Kent Flood Risk Management Committee.

## 3. Next steps

- 3.1 A total of 27 recommendations arose from the internal debrief which are reproduced at Appendix 1. All recommendations are now being implemented or assimilated into wider development of policy and practice.
- 3.2 Following December's severe weather events further flooding was experienced across Kent in the wake of Storms Ciara and Dennis in February. An internal debrief for these events took place on 28<sup>th</sup> February and the resultant debrief report will be discussed at the next meeting of Kent Flood Risk Management Committee in July.

## 4. Recommendations

- 4.1 Kent Flood Risk Management Committee is requested to note this report and provide oversight and scrutiny of the recommendations arising from the debrief and contribute any additional learning from the KCC response.

## 5. Contact Details

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## Appendix 1

	<b>STRUCTURED DEBRIEF REPORT</b>
<b>Debrief commissioned by:</b>	KCC Resilience and Emergency Planning Service
<b>Event:</b>	December floods 2019
<b>Date of Event:</b>	19 <sup>th</sup> - 24 <sup>th</sup> December 2019
<b>Date of Debrief:</b>	7 <sup>th</sup> January 2020
<b>Debrief Location:</b>	Dymchurch Room, Invicta House, County Hall
<b>Debrief Team:</b>	Tony Harwood (Resilience and Emergency Planning Manager) & Laura Newman (Resilience Officer)
<b>Debrief Participants:</b>	Joe Frampton (Kent Resilience Team / GET Portfolio Office), Louise Butfoy (Resilience and Emergency Planning Service), Sacha Taylor (Kent Resilience Team), James Lomas (Kent Resilience Team), Guy Gardener (Kent Resilience Team), Sian Deller (Kent Resilience Team), Steve Scully (Kent Resilience Team), Suz Elvey (Media and Communications), Paul Bufford (Adult Social Care and Health), John Callaghan (Adult Social Care and Health), Jodi Gore (Highways Transportation and Waste), Max Tant (Flood and Water Management), Andy Jeffery (Kent Resilience Team), Simon Jones (Highways, Transportation and Waste).
<b>Debrief Summary:</b>	<p>Overnight on 19<sup>th</sup> to 20<sup>th</sup> December 2019 flood impacts were felt across the County which persisted into coming days - with Mid and West Kent most affected. Some 65 residential and commercial properties were impacted by internal flooding with others affected by surcharging sewerage systems. 150 residents were evacuated from their homes at Little Venice Country Park and Arena. Management of water levels within contained waters on the course of River Len were another focus.</p> <p>Interventions to tackle surface water and highway flooding and resultant impacts on communities were the focus of sustained KCC activity. Some 200 calls were received by KCC from members of the public regarding flooding. Areas affected included Culverstone Valley, M26 J2a, Chart Sutton, Edenbridge, Five Oak Green, East Peckham, Tonbridge, Boughton Monchelsea, Staplehurst, Yalding and Collier Street.</p>

ITEM	IDENTIFIED BY	REC. No.	Recommendation
<b>AREAS FOR IMPROVEMENT</b>			
Capacity of highway drainage system to absorb increasingly frequent intense rainfall events was again tested.	Jodie Gore (HT&W)	01	<ul style="list-style-type: none"> <li>a. Debrief recommended that Government is approached to consider policy change ensuring new and upgraded highways drainage systems have 1in 20year event capacity (for climate change impacts), as is already required for water utility infrastructure [HT&amp;W, F&amp;WM]</li> <li>b. KCC should offer itself as a national pilot for policy change in relation to highway drainage infrastructure capacity [HT&amp;W, F&amp;WM]</li> </ul>

<p>Reservoir operator awareness of downstream implications of their actions and completeness of information held on individual reservoirs within existing plans was challenged during incident.</p>	<p>Guy Gardener (KRT) Laura Newman (R&amp;EPS)</p>	<p>02</p>	<ul style="list-style-type: none"> <li>a. Ensure all reservoir owners and operators are issued with latest Kent and Medway Offsite Reservoir Inundation Emergency Plan [R&amp;EPS]</li> <li>b. Undertake updates to Kent and Medway Offsite Reservoir Inundation Emergency Plan to ensure that more detail is captured on each individual reservoir and associated downstream contingency planning and validate through exercise [R&amp;EPS]</li> </ul>
<p>Effectiveness of some individual property level flood protection was challenged.</p>	<p>Guy Gardener (KRT)</p>	<p>03</p>	<ul style="list-style-type: none"> <li>a. Property level flood protection functionality in Yalding area to be raised at multi-agency December floods debrief [KRT]</li> </ul>
<p>Maintenance and in some cases loss of ditches and other flood storage and attenuation features on private land was considered to have contributed to flooding in some areas of county such as the Low Weald.</p>	<p>Tony Harwood (R&amp;EPS)</p>	<p>04</p>	<ul style="list-style-type: none"> <li>a. Specific locations where ditches and other flood attenuation features have been lost to be identified and communicated to Flood Risk Management Team [HT&amp;W, R&amp;EPS, KRT]</li> </ul>
<p>Highways Drainage assets and personnel were under intense pressure by midday Friday 20<sup>th</sup> December. This resulted in prioritisation of interventions to property or threatened property flooding.</p>	<p>Jodie Gore (HT&amp;W)</p>	<p>05</p>	<ul style="list-style-type: none"> <li>a. Review Highways Drainage resources and formalise prioritisation protocol and associated communication strategy and reflect this in relevant planning [HT&amp;W]</li> </ul>

<p>Duty Director came under significant operational work pressure during Friday and Saturday 20<sup>th</sup> and 21<sup>st</sup> December (because of professional role), which resulted in All Member briefing email not being circulated until evening of Sunday 22<sup>nd</sup> December when colleague took back Duty Director mantle.</p>	<p>Simon Jones (HT&amp;W)</p>	<p>06</p>	<p>a. Emergency Planning and Communications colleagues to revisit relevant guidance to ensure appropriate support for Duty Director to enable timely All Member Briefing circulation [R&amp;EPS, KRT and Media &amp; Comms]</p>
<p>Concern that guidance contained within DEPO Handbook was too prescriptive and should be refined to enable greater flexibility across command and control in future dependent upon characteristics of incident.</p>	<p>Guy Gardener (KRT)</p>	<p>07</p>	<p>a. Amend DEPO Handbook to enable greater flexibility across command and control in recognition of characteristics of incident [R&amp;EPS, KRT]</p>
<p>Co-operation and co-ordination with East Sussex County Council on cross border impacts could have been more effective.</p>	<p>Guy Gardener (KRT)</p>	<p>08</p>	<p>a. Triggers and structures for cross-boundary co-operation to be discussed with South East 7 [KRT]</p>
<p>Sharing of stories and images from KCC flood response activity would have assisted public reassurance and understanding of scale and complexity of response.</p>	<p>Suz Elvey (Media and Comms)</p>	<p>09</p>	<p>a. All responding KCC services to consider opportunities to brief Media and Communications colleagues on response interventions and capture images where appropriate [ASCH, CYPE, HT&amp;W, KRT, R&amp;EPS, Wardens]</p>
<p>Visualisation of breadth of KCC services (from County Emergency Centre) would have been enhanced by the installation of a wall chart illustrating the entire KCC structure with key contact numbers.</p>	<p>Joe Frampton (KRT)</p>	<p>10</p>	<p>a. KCC structure chart with key contact details to be installed within County Emergency Centre [R&amp;EPS]</p>

<p>Concerns were aired that KRF Risk Assessment for surface water events and wider planning assumptions for severe weather events do not adequately reflect cumulative impact of increases in frequency and intensity of rainfall events and other climate change impacts.</p>	<p>Guy Gardener (KRT), Louise Butfoy (R&amp;EPS)</p>	<p>11</p>	<p>a. KRT to raise issue of risk assessments and other planning assumptions and cumulative impact of increases in frequency and intensity of rainfall events and other climate change impacts through KRF and at multi-agency Christmas floods debrief [KRT]</p>
<p>The collection of data on internal inundation of residential and commercial premises (as required by Flood and Water Management) during and following this event was fragmented across agencies and is potentially incomplete.</p>	<p>Tony Harwood (R&amp;EPS), Max Tant (F&amp;WM)</p>	<p>12</p>	<p>a. R&amp;EPS to contact partners and seek to build up an accurate picture of premises flooded [R&amp;EPS]  b. List of flooded properties to be shared with Flood and Water Management team [R&amp;EPS]</p>



## AREAS THAT WENT WELL

<p>The series of SWAGs held in the days preceding the floods served to inform preparation by KCC (and our partners) for the eventual flooding.</p>	<p>Guy Gardener (KRT)</p>	<p>13</p>	<p>a. Ensure that KCC Flood Response Emergency Plan emphasises importance of early initiation of SWAG meetings [R&amp;EPS]</p>
<p>DEPO and Duty Director roles were both effective and complementary.</p>	<p>Guy Gardener (KRT), Simon Jones (HT&amp;W)</p>	<p>14</p>	<p>a. Further evidences value of DEPO and Duty Director roles which should be further formalised in all relevant planning [R&amp;EPS]</p>
<p>The County Emergency Centre (CEC) functioned effectively and supported and enhanced the County Council response.</p>	<p>Guy Gardener (KRT)</p>	<p>15</p>	<p>a. Further evidences value of County Emergency Centre which should be further formalised in all relevant planning [R&amp;EPS]</p>
<p>The deployment of DEPO into the CEC improved communication and effectiveness of County Council response.</p>	<p>Guy Gardener (KRT)</p>	<p>16</p>	<p>a. Amend DEPO Handbook to reflect policy support for DEPO deployment to CEC [KRT]</p>
<p>The close links established early on and maintained thereafter between the CEC and Environment Agency Incident Room notably enhanced the effectiveness of the response.</p>	<p>Guy Gardener (KRT), Tony Harwood (R&amp;EPS)</p>	<p>17</p>	<p>a. Amend KCC Flood Response Emergency Plan and CEC Handbook to reflect value of establishing early links with EA Incident Room during flood emergencies b. Underline value of close working relationship between CEC and EA Incident Room at multi-agency December floods debrief</p>

Effective co-ordination between KCC and Kent Fire and Rescue Service (including the Tactical Adviser Water and Flooding) enhanced the effectiveness of the response.	Guy Gardener (KRT), Tony Harwood (R&EPS)	18	a. Underline value of close working relationship between KCC and KF&RS (including Tactical Adviser Water and Flooding) during floods at multi-agency debrief [KRT]
Pro-active highways drainage interventions, informed by local knowledge, such as pumping to tankers and sandbag / flood sax installation were effective. Good working relationship between DEPO and other Emergency Planners and Highways Drainage colleagues contributed to this effectiveness (i.e. institutionalise direct reporting channel).	Jodi Gore (HT&W), Guy Gardener (KRT), Tony Harwood (R&EPS)	19	a. Ensure all relevant HT&W and corporate flood response plans reflect local knowledge and value of pro-active highways drainage interventions [KRT, R&EPS] b. Ensure direct communications between Emergency Planners and Highways Transportation and Waste in relation to pro-active highways interventions to protect at risk communities [HT&W]
Enhanced flood storage contribution from recently restored semi-natural land on River Len floodplain upstream of Maidstone significantly ameliorated downstream impacts from increased flows.	Tony Harwood (R&EPS)	20	a. Consider flood storage contribution from semi-natural land uses within resilient landscapes / natural capital initiatives [R&EPS]
Pro-active precautionary evacuation of Little Venice Country Park and Marina was effective.	Guy Gardener (KRT)	21	a. Promote through multi-agency debrief the development of guidance for pro-active precautionary evacuation of Little Venice Country Park and Marina in future similar flooding events [KRT]
Severe Weather Impacts Monitoring System (SWIMS) event initiated for December floods with good engagement by KCC to date. All teams must appropriately capture costs and resources arising from response, including staff time dedicated to response.	Tony Harwood (R&EPS)	22	All teams must appropriately capture costs and resources arising from December floods response using SWIMS, including staff time dedicated to response [All]

No.	RECOMMENDATIONS	OWNER	COMMENTS
01	<ul style="list-style-type: none"> <li>a. Debrief recommended that Government is approached to consider policy change ensuring new and upgraded highways drainage systems have 1in 20year event capacity (for climate change impacts), as is already required for water utility infrastructure.</li> <li>b. KCC should offer itself as a national pilot for policy change in relation to highway drainage infrastructure capacity.</li> </ul>	HT&W, F&WM	
02	<ul style="list-style-type: none"> <li>a. Ensure all reservoir owners and operators are issued with latest Kent and Medway Offsite Reservoir Inundation Emergency Plan.</li> <li>b. Undertake updates to Kent and Medway Offsite Reservoir Inundation Emergency Plan to ensure that more detail is captured on each individual reservoir and associated downstream contingency planning and validate through exercise.</li> </ul>	R&EPS	
03	Property level flooding functionality in Yalding area to be raised at multi-agency December floods debrief.	KRT	
04	Specific locations where ditches and other flood attenuation features have been lost to be identified and communicated to Flood Risk Management Team.	HT&W, R&EPS, KRT	
05	Review Highways Drainage resources and formalise prioritisation protocol and associated communication strategy and reflect this in relevant planning.	HT&W	
06	Emergency Planning and Communications colleagues to revisit relevant guidance to ensure appropriate support for Duty Director to enable timely All Member Briefing circulation.	R&EPS, KRT and Media & Comms	
07	Amend DEPO Handbook to enable greater flexibility across command and control in recognition of characteristics of incident	R&EPS, KRT	
08	Triggers and structures for cross-boundary co-operation to be discussed with South East 7.	KRT	
09	All responding KCC services to consider opportunities to brief Media and Communications colleagues on response interventions and capture images where appropriate.	ASCH, CYPE, HT&W, KRT, R&EPS and Wardens	
10	KCC structure chart with key contact details to be installed within County Emergency Centre.	R&EPS	
11	KRT to raise issue of risk assessments and other planning assumptions and cumulative impact of increases in frequency and intensity of rainfall events and other climate change impacts through KRF and at multi-agency December floods debrief.	KRT	

No.	RECOMMENDATIONS	OWNER	COMMENTS
12	<ul style="list-style-type: none"> <li>a. R&amp;EPS to contact partners and seek to build up an accurate picture of premises flooded.</li> <li>b. List of flooded properties to be shared with Flood and Water Management team.</li> </ul>	R&EPS	
13	Ensure that KCC Flood Response Emergency Plan emphasises importance of early initiation of SWAG meetings.	R&EPS	
14	Value of DEPO and Duty Director roles to be further formalised in all relevant planning.	R&EPS	
15	Further evidences value of County Emergency Centre which should be further formalised in all relevant planning.	R&EPS	
16	Amend DEPO Handbook to reflect policy support for DEPO deployment to CEC.	KRT	
17	<ul style="list-style-type: none"> <li>a. Amend KCC Flood Response Emergency Plan and CEC Handbook to reflect value of establishing early links with EA Incident Room during flood emergencies</li> <li>b. Underline value of close working relationship between CEC and EA Incident Room at multi-agency December floods debrief.</li> </ul>	R&EPS, KRT	
18	Underline value of close working relationship between KCC and KF&RS (including Tactical Adviser Water and Flooding) during floods at multi-agency debrief.	KRT	
19	<ul style="list-style-type: none"> <li>a. Ensure all relevant HT&amp;W and corporate flood response plans reflect local knowledge and value of pro-active highways drainage interventions</li> <li>b. Ensure direct communication links between Emergency Planners and Highways Transportation and Waste in relation to initiating pro-active highways interventions to protect at risk communities (i.e. institutionalise direct reporting channel).</li> </ul>	HT&W, KRT and R&EPS	
20	Consider flood storage contribution from semi-natural land uses within resilient landscapes / natural capital initiatives.	R&EPS	
21	Promote through multi-agency December floods debrief the development of guidance for pro-active precautionary evacuation of Little Venice Country Park and Marina in future similar flooding events.	KRT	
22	All teams must appropriately capture costs and resources arising from December floods response using SWIMS, including staff time dedicated to response.	All	