

From: **Michael Hill, Cabinet Member, Community Services**
To: **Environment & Transport Cabinet Committee – 22 July 2014**
Decision No: **N/A**
Subject: **Christmas / New Year 2013-14 Storms & Floods – Final Report**
Classification: **Unrestricted**
Past Pathway of Paper: **Cabinet – 7th July 2014**
Growth, Economic Development & Communities Cabinet Committee – 8th July 2014
Future Pathway of Paper:
Electoral Division: **N/A**

Summary: This report provides the Cabinet Committee with a full review of lessons learned from the Christmas / New Year 2013-14 storms & flooding (and previous severe weather events) and makes recommendations for how the County Council, in collaboration with its partners, can be better prepared to manage such future events and flood risk.

Recommendations: The Cabinet Committee is asked to a) note and endorse the recommendations outlined in the Action Plan in **Annex 1**; and b) once approved, receive further options papers / progress reports on delivery against the Action Plan.

1. Introduction

- 1.1 Members will be aware that the extreme severe weather experienced over Christmas and New Year was unprecedented and presented an exceptionally challenging time for all concerned.
- 1.2 Indeed, in the Government's 'Flood Support Schemes Guide' sent to Local Authority Chief Executives in flood affected areas by Sir Bob Kerslake, Permanent Secretary, Department for Communities & Local Government (DCLG) and Head of the Civil Service stated:
'On 5th and 6th December 2013, the worst tidal surges in 60 years struck the east coast of England, leaving a trail of destruction and flooded properties. In addition to the December tidal surges, the country has experienced the wettest winter in over 250 years. This has resulted in many areas of the country remaining on high alert for extended periods as the emergency services, supported by local authorities, statutory agencies and local residents have battled to protect communities'.
- 1.3 Notwithstanding that the initial severe storms and rainfall occurred during the Christmas Bank Holiday with many staff on leave and out of county, KCC deployed all its available staff throughout this period to support those communities across the County that were affected, not only by flooding, but by storm damage and power outages.
- 1.4 Kent was one of the most severely affected areas in the country with some 28,500 properties without power on Christmas Eve and 929 homes and business flooded over the following 8 week period. See **supporting Appendix 1 sections A1 and A2** for a detailed breakdown of properties flooded and other key facts and statistics.
- 1.5 It is recognised that these unprecedented severe weather events strained not only KCC resources but all other emergency and public services and priority decisions had to be made in order to ensure support to those communities, residents and businesses affected by these events.

1.6 This report provides:

- A summary of the storms & floods that affected Kent between December 2013 and February 2014 & the actions taken by KCC & its multi-agency partners in response;
- Good practice and lessons learned to inform how KCC and its partners can better respond to such emergencies in the future;
- A review of options for managing flood risk in the long-term; and
- Draft Action Plan for taking forward proposed recommendations – see **Annex 1**.

1.7 Whilst this report will focus on the events from 23rd December 2013 onwards, to provide further background and context, reference is also made to the preceding severe weather events on 28th October (St Jude storm) and 5th & 6th December (east coast tidal surge).

1.8 Contributions from the following have been used to inform the content of this report:

- Internal KCC and multi-agency debriefs;
- Key internal departments & partner agencies e.g. KCC Flood Risk Management, Environment Agency (EA) and Kent Police;
- Individual responses from residents, businesses and elected representatives; and
- Public consultation meetings and ‘flood fairs’ in affected communities¹.

1.9 Details of key meetings & event dates are provided in **Appendix 1 section A3**.

2. Managing Emergencies

2.1 The Civil Contingencies Act 2004 establishes a clear set of roles & responsibilities for those involved in emergency preparedness & response at the local level. The Act divides local responders into 2 categories, imposing a different set of duties on each.

2.2 ‘Category 1 Responders’ are organisations at the core of the response to most emergencies (e.g. the emergency services, local authorities, NHS bodies and the EA) and have statutory responsibilities for the ensuring plans are in place to deal with a range of emergency situations, including flooding. ‘Category 2 Responders’ (e.g. the Health & Safety Executive, transport and utility companies) are ‘co-operating bodies’. They are less likely to be involved in the heart of planning work, but are heavily involved in incidents that affect their own sector. Category 2 Responders have a lesser set of duties - co-operating and sharing relevant information with other Category 1 & 2 Responders.

2.3 Category 1 & 2 Responders come together to form ‘Local Resilience Forums’ (based on police force areas) which helps co-ordination and co-operation between responders at the local level. In Kent, this is known as the Kent Resilience Forum (KRF), which is chaired by Kent Police who adopt the lead organisation role in most emergency situations.

3. Management of the Emergency

3.1 Kent Police undertook the role of lead organisation in the ‘emergency response’ phases, with each declared emergency given an operational name - see **Appendix 1 section A4** for details.

3.2 During the ‘emergency response’ phases, a multi-agency ‘Gold’ Strategic Co-ordinating Group (SCG) and ‘Silver’ Tactical Co-ordinating Group (TCG) were hosted and chaired by Kent Police at Kent Police Headquarters and Medway Police Station respectively.

¹ Public meetings with residents / businesses were co-ordinated by the EA via the Parish / Town Councils & the Tonbridge Forum, with attendance from elected members and officers from KCC, District / Borough Councils, Kent Police and Southern Water. Flood fairs are a joint initiative between District / Borough Councils, EA, KCC, Parish / Town Councils & the National Flood Forum - a charity that raises awareness of flood risk & helps communities to protect themselves & recover from flooding.

- 3.3 Multi-agency 'Bronze' Operational teams were deployed across the County in specific affected communities (e.g. Yalding, Bridge and the Brishing Dam) and undertook work such as door-knocking, evacuations, sandbagging and public reassurance.
- 3.4 Led by the Kent Police Gold Commander, the SCG agreed upon a Gold Strategy to guide the response, with the central aim of:
- 'Saving and protecting life and property risks to people in Kent and Medway by coordinating multi-agency activity to maintain the safety and security of the public'.*
- 3.5 The core roles undertaken by KCC were as follows:
- Supporting and, at times, leading multi-agency co-ordination;
 - Responding to the effects on the highway network throughout the period dealing with fallen trees, damaged roads, surface water flooding, blocked gullies and more;
 - On-scene liaison with partners and affected communities;
 - Working with District / Borough Councils to provide temporary accommodation to those who were flooded, with transport arranged to take people from flooded areas to safety;
 - Provision of welfare support to those evacuated or in their own homes²;
 - Co-ordinating support from the voluntary sector³; and
 - Logistics management of countywide resources such as sandbags.

4. Recovery Management

- 4.1 As of 18th February, KCC has been the lead organisation in managing the long-term recovery process and has developed a Gold Recovery Strategy with the central aim of:
- 'Ensuring partnership working to support the affected individuals, communities and organisations to recover from the floods and return to a state of normality'.*
- 4.2 To manage the recovery, five task-focused teams have been established with representatives from all appropriate authorities and organisations involved
- Health, Welfare & Communities: KCC Public Health led;
 - Environment & Infrastructure: EA led;
 - Business & Economy: KCC Business Engagement & Economic Development led;
 - Finance, Insurance & Legal: KCC Finance led; and
 - Media & Communications: KCC Communications led.
- 4.3 Central Government are taking a keen interest in progress and key issues, with regular reporting to DCLG and the office of Greg Clark MP, the Flood Recovery Minister for Kent.

5. Lessons Learned

- 5.1 The following are the main points raised during the relevant debriefs, meetings & individual responses received, which have been used to inform a set of recommendations which are summarised in the Draft Action Plan in **Annex 1**.
- 5.2 For reference, the draft lessons learned from the KRF multi-agency debrief held on 21st March 2014 can be found at **Appendix 1 section A5**.

² This included vulnerable person checks and provision of food, clothing and other practical support, such as arranging electrical contractors to ensure safety within people's flooded homes and hiring dehumidifiers to support the clear up.

³ This included undertaking community liaison roles and provision of equipment, practical support (such as first aid, transportation, or provisions for responders) and psycho-social support.

Pre-Planning & Resilience

Identified Successes

- 5.3 Overall, KCC and its KRF partners, with joint planning for responding to and management of emergencies, were able to deliver support and assistance to the many communities, individuals and businesses in Kent affected by the severe weather events.
- 5.4 Staff, systems & procedures coped well when one considers the unprecedented scale, complexity and protracted nature of the events that took place
- 5.5 There were numerous examples of the commitment & resourcefulness of staff, partners, volunteers and communities to help others in need and to provide practical solutions to real problems for those affected.

Areas for Improvement

- 5.6 In the early stages of the response, staffing levels were affected by the timing of the emergencies, which occurred over the Christmas Bank Holiday period. Coupled with the sustained and complex nature of the emergency, on occasions considerable demands were placed upon a small number of individuals & teams undertaking crucial emergency response roles. Increased resilience should be established across KCC to be better prepared in the future.
- 5.7 Although there is no legal obligation on any organisation to provide sandbags and other practical support (e.g. pumps, dehumidifiers), public expectation was, understandably, to the contrary. This was exacerbated throughout the response by a general lack of awareness, mis-communications & inconsistency of approaches adopted.
- 5.8 Linked to this last point, it has been observed and reported of a general lack of flood awareness and individual / community resilience. For example, in some parts of Kent, 40-50% of the homes and businesses at risk of flooding in Kent are not signed-up to the EA's Floodline Warnings Direct (FWD) Service and so are unlikely to receive any prior warning of flooding – see **Appendix 1 section A6** for more details.

Recommendations

REC1: Undertake a fundamental review & update of key KCC and partnership plans to ensure they are fit-for-purpose for even the most complex and protracted of incidents.

REC2: Provide Cabinet with an options paper for enhancing KCC's resilience, including training a cadre of 'emergency reservists'. Once approved, implement a programme to train, equip & support relevant personnel in readiness for Winter 2014.

REC3: Develop a consistent countywide policy & plans for maintaining & providing sandbags and other practical support to individuals & communities at risk of flooding.

REC4: Implement a strategy to encourage greater flood awareness & individual / community resilience, including improving sign-up for the EA's Floodline Warnings Direct (FWD) Service and training local volunteers as Flood Wardens.

Command, Control, Co-ordination & Communications

Identified Successes

- 5.9 Actions by KCC and our partners undoubtedly saved and protected life, livestock and properties.

- 5.10 As the emergency progressed, joint plans, procedures and working arrangements matured, informed by the experiences of previous events.
- 5.11 When established, multi-agency co-ordination was effective, particularly when this was co-located. Specifically, Bronze / Operational teams deployed on the ground provided an effective and invaluable link into affected communities, particularly when communication and transport links were disrupted
- 5.12 Throughout the sequence of events, the voluntary sector provided extremely valuable support, demonstrating a high level of professionalism, dedication and capability.

Areas for Improvement

- 5.13 Feedback from debriefs, public consultations & flood fairs suggest that the EA's flood warnings were not always received or there was difficulty in receiving warnings, particularly as power supplies were disrupted. Additionally, many residents received conflicting warnings, were unsure of the level of risk & therefore the relevant actions they should take.
- 5.14 KCC and its partners responded to emergency calls throughout Christmas Eve, Christmas Day & Boxing Day. However, pressure on staffing levels due to the Bank Holiday & sheer volume / complexity of incidents that were being reported led to delays in establishing co-ordinated multi-agency support structures in key affected communities (e.g. Tonbridge, Hildenborough, East Peckham, Yalding & Maidstone) until the following weekend which, understandably, has angered many residents & businesses.
- 5.15 Additionally, partner agencies, residents & businesses alike all suffered from a lack of / poor quality engagement & support from the utilities companies, particularly the power, water & sewerage providers.
- 5.16 Information management was a continual challenge – difficulties in obtaining critical information when it was need and, vice versa, information overload at times of intense pressure.

Recommendations

REC5: Undertake a fundamental review & update of the EA's Floodline Warnings Direct (FWD) Service for communities with high / complex flood risk.

REC6: Develop enhanced arrangements for warning & informing the public in flooding / severe weather scenarios, including contingency arrangements in the event of power outages and greater usage of social media.

REC7: Develop multi-agency arrangements to provide critical 'on scene' liaison & support to affected communities e.g. via multi-agency 'Bronze' / Operational teams.

REC8: Work with DCLG and the Flood Recovery Minister for Kent to bring pressure to bear on utilities companies to improve their arrangements for engaging with & supporting partners & customers.

REC9: Streamline & enhance existing multi-agency information management protocols & systems for sharing critical data in the planning for & management of emergencies.

Escalation, De-Escalation & Recovery

Identified Successes

- 5.17 Central Government colleagues have commended KCC and our partners for our approach in a number of key areas, and are promoting these as good practice e.g. early identification & monitoring of warnings / developing situations and a flexible / proportionate approach; and recovery management arrangements developed during Operation Sunrise 4.

Areas for Improvement

- 5.18 Some partners felt that, at times, there were delays in 'standing up' the co-located multi-agency emergency response co-ordination arrangements and, conversely, that these were occasionally stood-down too soon, declaring the 'emergency' over and handing-over to the 'recovery' phase.
- 5.19 Delays in involvement / support from Central Government caused difficulties for partners and the public over Christmas / New Year period. Conversely, once Central Government command & control was put in place, requests for detailed information at very short notice placed an additional burden on local responders.
- 5.20 The financial support schemes brought in by Central Government have also been difficult to interpret and implement at the local level, and do not adequately reflect the significant burdens placed on County Councils e.g. most schemes are focussed towards the Districts / Borough Councils, with significant cost incurred by KCC currently unlikely to qualify for central support.

Recommendations

REC10: Formalise the recovery management structures developed during Operation Sunrise 4 and adopt these as good practice.

REC11: Develop protocols to support emergency responders in deciding when to escalate / de-escalate to / from the 'emergency response' & 'recovery' phases.

REC12: Influence Central Government to secure additional financial support in recognition of the severe burden that these incidents have placed on KCC.

6. Flood Risk Management

- 6.1 As well as lessons learned to improve how KCC prepares for and manages flooding emergencies in the future, consideration must also be given to roles of each organisation and the broader flood risk management options available for preventing or reducing the likelihood and / or impacts of flooding occurring.

Roles & Responsibilities

- 6.2 **EA:** Responsible for taking a strategic overview of the management of all sources of flooding and coastal erosion. This includes, for example, setting the direction for managing the risks through strategic plans; working collaboratively to support the development of risk management and providing a framework to support local delivery including the administration of Flood Defence Grant in Aid (FDGiA). The Agency also has operational responsibility for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea, as well as being a coastal erosion risk management authority.
- 6.3 **KCC:** Lead Local Flood Authority (LLFA) for Kent as defined by the Flood and Water Management Act (2010) and has a role to provide strategic overview of local flooding, which is defined as flooding from surface water, groundwater and ordinary watercourses (watercourses that are not main rivers). As part of its role as LLFA KCC has prepared and adopted the Kent Local Flood Risk Management Strategy, which sets out the objectives for managing local flood risks in Kent. All risk management authorities must act consistently with the local strategy.

Highway Authority for Kent - has a role to maintain safe conditions on the roads by taking appropriate actions that may include the provision of temporary flood warning signs, clearance of flood water, reactive cleansing of the highway drainage system and the organisation of road closures and traffic diversions when roads become flooded.

- 6.4 District / Borough Councils: Key partners in planning local flood risk management and can carry out flood risk management works on minor watercourses, working with LLFA and others, including through taking decisions on development in their area which ensure that risks are effectively managed. Districts / Boroughs and Unitary Authorities in coastal areas also act as coastal erosion risk management authorities.
- 6.5 Internal Drainage Boards: Independent public bodies responsible for water level management in low lying areas, also play an important role in the areas they cover (approximately 10% of England at present), working in partnership with other authorities to actively manage and reduce the risk of flooding.
- 6.6 Water and Sewerage Companies: Responsible for managing the risks of flooding from water and foul or combined sewer systems, providing drainage from buildings and yards.

Effectiveness of River & Flood Management Assets

- 6.7 Partners, residents & businesses alike have raised a number of queries & concerns regarding the effectiveness of river & flood management systems / assets operated by the EA and Southern Water, including:
- EA: dredging of rivers and the operation of the Leigh Barrier and sluice gates at Yalding & Allington; and
 - Southern Water: lack / effectiveness of non-return valves in preventing sewage flooding, particularly in the Tonbridge area.

Recommendations

REC13: EA / Southern Water to respond to queries / concerns regarding the perceived lack / effectiveness of their management of rivers & flood management systems / assets.

Potential Flood Defence Schemes – information supplied by the EA

- 6.8 Approximately 65,000 homes and businesses are at risk of fluvial or coastal flooding in Kent, of which 38,000 currently benefit from flood defences with 27,000 not benefitting from defences. The EA has identified a further £194m of investment which would protect an additional 17,000 properties, between now and 2021. It has also identified further schemes identified for 2021 and beyond through its pipeline development programme.
- 6.9 The EA has worked successfully in the past with KCC and the private sector to implement flood risk management schemes such as the Sandwich Town Tidal Defence Scheme. It has also attracted additional partnership funding from a range of contributors including private businesses, developers and other government departments. There is a need to continue to work together to secure funding for priority schemes.
- 6.10 The recent flooding across the County has reinforced the need to accelerate this investment to reduce the risk of flooding. The EA in Kent & South London has secured £27.4m FDGiA for 2014-15. This will allow the EA to progress schemes including:
- | | |
|--|---|
| • Broomhill Sands Sea Defences | • East Peckham (Medway) Flood Alleviation Scheme (FAS) |
| • Sandwich Town Tidal Defences | • Aylesford Property-Level Protection Scheme (£50k contribution from KCC) |
| • Leigh Barrier Mechanical / Electrical Improvements | • Repairing assets damaged in the recent coastal surge and fluvial floods |
| • Study into Yalding Storage on the Beult | |

- Denge shingle re-nourishment

Flood Defence Grant in Aid (FDGiA)

6.11 In order to protect areas at Kent at risk of flooding investment is required in flood defences. The government will contribute to flood defences through FDGiA. However, current rules mean that schemes are rarely fully funded through this grant. Additional contributions or partnership funding is required to make up the shortfall. Without partnership funding flood defence schemes cannot be delivered.

6.12 The Government's partnership funding mechanism means that each scheme must have a minimum cost benefit of 8 – 1 and a partnership funding score of more than 100% in order to achieve Government allocated FDGiA. The EA has identified priority locations for accelerating flood defence projects based on people at risk and economic development including Yalding and Tonbridge that do not currently meet FDGiA criteria.

6.13 Areas that require investment to deliver flood defences in Kent include:

- The Leigh Flood Storage Area (FSA) and Lower Beult;
- East Peckham;
- Five Oak Green;
- South Ashford;
- Dover;
- Whitstable & Herne Bay;
- Folkestone; and
- Canterbury.

6.14 See **Appendix 1 section A7.4** for a detailed financial breakdown of each scheme.

Recommendations

REC14: Explore all possible opportunities with partners and beneficiaries to contribute to the priority flood defence schemes required in Kent, including influencing the EA, Defra & HM Treasury to secure funding to deliver the schemes that do not currently receive sufficient FDGiA funding even with substantial partnership contributions.

6.15 Highway Drainage Improvements

The County Council is responsible for the maintenance of 5,400 miles of public highway including 250,000 roadside drains and associated drainage systems. The weather this winter highlighted numerous pinch points in the drainage network. Some of these are being addressed by the implementation of an enhanced cleansing regime however in a large number of cases work is required to improve the functionality of the system.

In response, the County Council is investing an additional £3m to enable the delivery of 120 drainage improvement schemes in 2014/15. Renewals and improvements are being prioritised on the basis of the frequency of flooding and the risk posed to highway safety, properties adjacent to the highway and network disruption.

Other Flood Risk Management Options

6.16 Work is also currently on-going in the county by the EA and KCC to improve our understanding of flood risk and investigate options to provide protection. These include:

- Spatial & land-use planning & drainage;

- Personal flood resilience;
- High / complex flood risk communities; and
- Surface water management.

In most of the above areas, existing strategies and programmes of work are maintained by the relevant authorities. However, in light of recent events and the issues / opportunities highlighted in **Appendix 1 section A8** the following recommendations are made.

Recommendations

REC15: Ensure the consequences of flood risk are fully considered before promoting development in flood risk areas by consulting all organisations with a role in flood risk management and emergency management.

REC16: Implement a strategy to encourage greater awareness & take-up of individual & community flood protection measures e.g. property-level protection, sandbags.

REC17: Support awareness & implementation of key initiatives to support communities with high / complex flood risk, particularly e.g. Surface Water Management Plans (SWMPs), Multi-Agency Flood Alleviation Technical Working Groups

7. Recommendations

Recommendations: The Cabinet Committee is asked to a) note and endorse the recommendations outlined in the Action Plan in **Annex 1**; and b) once approved, receive further options papers / progress reports on delivery against the Action Plan.

8. Supporting Information

8.1 Annex 1. Draft Action Plan

8.2 Appendix 1 – Christmas & New Year 2013-14 Storms & Floods Final Report

Sections as follows:

- A1. Numbers of Properties Flooded;
- A2. Key Facts & Statistics;
- A3. Key Meeting & Event Dates
- A4. Summary of Emergency Response Operations;
- A5. Kent Resilience Forum (KRF) Multi-Agency Debrief - Draft Lessons Learned;
- A6. Floodline Warnings Direct (FWD) Service;
- A7. Potential Future Flood Defence Schemes; and
- A8. Other Flood Risk Management Options.

8.3 Background Documents

Christmas / New Year Storms & Floods Update Report to KCC Cabinet (22nd January 2014)

<https://democracy.kent.gov.uk/mgConvert2PDF.aspx?ID=44733> (Report &
<https://democracy.kent.gov.uk/mgConvert2PDF.aspx?ID=44762> Appendices)

Kent Local Flood Risk Management Strategy

<http://www.kent.gov.uk/about-the-council/strategies-and-policies/environment-waste-and-planning-policies/flooding-and-drainage-policies/kent-flood-risk-management-plan>

Local Surface Water Management Plans

<http://www.kent.gov.uk/about-the-council/strategies-and-policies/environment-waste-and-planning-policies/flooding-and-drainage-policies/surface-water-management-plans>

Revenue & Capital Budget Monitoring Report to KCC Cabinet (28th April 2014)

<https://democracy.kent.gov.uk/mgConvert2PDF.aspx?ID=46275>

Flood Support Schemes – Funding Available from Central Government

[https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/304805/Flood Recovery - Summary of Support Guide.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/304805/Flood_Recovery_-_Summary_of_Support_Guide.pdf)

DfT Pothole Challenge Fund

<https://www.gov.uk/government/news/councils-urged-to-apply-for-168-million-pothole-repair-fund>

Severe Weather Impacts Monitoring System (SWIMS)

<http://www.kent.gov.uk/business/Business-and-the-environment/severe-weather-impacts-monitoring-system-swims>

9. Contact Details

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Annex 1. Draft Action Plan

No.	Recommendation	Lead / Supporting Action Owner(s)	Start Date	End Date
REC1	Undertake a fundamental review & update of key KCC and partnership plans to ensure they are fit-for-purpose for even the most complex and protracted of incidents.	KCC / KRT	Jun 2014	Nov 2014
REC2	Provide Cabinet with an options paper for enhancing KCC's resilience , including training a cadre of 'emergency reservists'. Once approved, implement a programme to train, equip & support relevant personnel in readiness for Winter 2014.	KCC	Aug 2014	Nov 2014
REC3	Develop a consistent countywide policy & plans for maintaining & providing sandbags and other practical support to individuals & communities at risk of flooding.	KRT / Districts & Boroughs / EA	July 2014	Nov 2014
REC4	Implement a strategy to encourage greater flood awareness & individual / community resilience , including improving sign-up for the EA's Floodline Warnings Direct (FWD) Service and training local volunteers as Flood Wardens.		Apr 2014	Nov 2014
REC5	Undertake a fundamental review & update of the Floodline Warnings Direct (FWD) Service for communities with high / complex flood risk.	EA / KRT	July 2014	Nov 2014
REC6	Develop enhanced arrangements for warning & informing the public in flooding / severe weather scenarios , including contingency arrangements in the event of power outages and greater usage of social media.			
REC7	Develop multi-agency arrangements to provide critical 'on scene' liaison & support to affected communities e.g. via multi-agency 'Bronze' / Operational teams.	KRT	July 2014	Nov 2014
REC8	Work with DCLG and the Flood Recovery Minister for Kent to bring pressure to bear on utilities companies to improve their arrangements for engaging & supporting partners & customers.	KRT / KCC / EA	Ongoing	
REC9	Streamline & enhance existing multi-agency information management protocols & systems for sharing critical data in the planning for & management of	KRT	July 2014	Nov 2014

No.	Recommendation	Lead / Supporting Action Owner(s)	Start Date	End Date
	emergencies.			
REC10	Formalise the recovery management structures developed during Operation Sunrise 4 and adopt these as good practice.			
REC11	Develop protocols to support emergency responders in deciding when to escalate / de-escalate to / from the ‘emergency response’ & ‘recovery’ phases.	KRT	July 2014	Nov 2014
REC12	Influence Central Government to secure additional financial support in recognition of the severe burden that these incidents have placed on KCC.	KCC	Ongoing	
REC13	EA / Southern Water to respond to queries / concerns regarding the perceived lack of / effectiveness of their rivers & flood management systems / assets	EA / Southern Water	July 2014	Sept 2014
REC14	Explore all possible opportunities with partners and beneficiaries to contribute to the priority flood defence schemes required in Kent , including influencing the EA, Defra & HM Treasury to secure funding to deliver the schemes that do not currently receive sufficient FDGiA funding even with substantial partnership contributions.	KCC & Districts & Boroughs	Ongoing	
REC15	Ensure the consequences of flood risk are fully considered before promoting development in flood risk areas by consulting all organisations with a role in flood risk management and emergency management.	Districts / Boroughs / KCC, EA & KRT	Apr 2014	Mar 2015
REC16	Implement a strategy to encourage greater awareness & take-up of individual & community flood protection measures e.g. property-level protection, sandbags.	KRT / Districts / Boroughs / EA		
REC17	Support awareness & implementation of key initiatives to support communities with high / complex flood risk, particularly e.g. Surface Water Management Plans (SWMPs), Multi-Agency Flood Alleviation Technical Working Groups	Various leads, determined by nature of flood risk	Ongoing	

* Action Owners listed here are illustrative and these lists are not exhaustive. Work will need to involve a broader range of organisations with flood risk management responsibilities.