

KENT FLOOD RISK MANAGEMENT COMMITTEE

Monday, 17th November, 2014

2.00 pm

Council Chamber, The Guildhall, Cattle Market,
Sandwich CT13 9AP





AGENDA

KENT FLOOD RISK MANAGEMENT COMMITTEE

Monday, 17th November, 2014, at 2.00 pm Ask for: **Andrew Tait**
Council Chamber, The Guildhall, Cattle Market, Telephone **01622 694342**
Sandwich CT13 9AP

Tea/Coffee will be available 15 before the start of the meeting in the meeting room

Membership

Conservative (4): Mr M J Harrison (Chairman), Mr A H T Bowles,
 Mr L B Ridings, MBE and Mrs P A V Stockell

UKIP (1): Mr D Baker

Labour (1) Dr M R Eddy

Liberal Democrat (1) Mr M J Vye

UNRESTRICTED ITEMS

(During these items the meeting is likely to be open to the public)

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1. Membership and Substitutes
2. Declarations of Members' Interest relating to items on today's agenda
3. Minutes of the meeting on 21 July 2014 (Pages 5 - 10)

4. Southern Water response to Winter 2013/14 Floods (Pages 11 - 18)
5. Christmas/New Year 2013/14 Storms and Floods - Progress Report (Pages 19 - 34)
6. Evacuation of Animals Task and Finish Group (Pages 35 - 36)
7. Environment Agency and Met Office Flood Alerts and Warnings and KCC flood response activities since the last meeting (Pages 37 - 40)
8. Environment Agency work on the Great Stour - Oral report by Max Tant
9. Dates of meetings in 2015
 - 10 March 2015
 - 20 July 2015
 - 16 November 2015

EXEMPT ITEMS

(At the time of preparing the agenda there were no exempt items. During any such items which may arise the meeting is likely NOT to be open to the public)

Peter Sass
Head of Democratic Services
(01622) 694002

Friday, 7 November 2014

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KENT COUNTY COUNCIL**KENT FLOOD RISK MANAGEMENT COMMITTEE**

MINUTES of a meeting of the Kent Flood Risk Management Committee held in the Council Chamber, Sessions House, County Hall, Maidstone on Monday, 21 July 2014.

PRESENT: Mr M J Harrison (Chairman), Mr D Baker, Mr A H T Bowles, Dr M R Eddy, Mr L B Ridings, MBE, Mrs P A V Stockell and Mr M J Vye

IN ATTENDANCE: Mr M Tant (Flood Risk Manager), Mr T Harwood (Senior Resilience Officer), Ms K Lewis (Drainage and Flood Manager) and Mr A Tait (Democratic Services Officer)

ALSO IN ATTENDANCE: Mrs J Blanford (Ashford BC), Mr P Vickery-Jones (Canterbury CC), Mr A Hills (Shepway DC), Mr G Lewin (Swale BC), Mr D Elliott (Tunbridge Wells BC), Ms G Brown (KALC), Mr M Tapp (River Stour IDB), Mr M Dobson (Upper Medway IDB) and Mr P Flaherty (Kent Fire and Rescue).

UNRESTRICTED ITEMS**8. Membership and Introductions**

(Item 1)

(1) The Committee welcomed the appointment of Cllr Mrs Geraldine Brown (KALC) and Mr Paul Flaherty (Kent Fire and Rescue).

(2) The Chairman briefly reported that Members of the Committee had visited the Leigh Barrier before the meeting. He said that the visit had been very worthwhile and that the Environment Agency would be arranging a series of Open Days in September when those Members who had not been able to take part in the visit would be able to do so.

(3) Following the meeting, the Open Day dates were notified to the Democratic Services Officer as follows:-

9. Minutes of the meeting on 11 March 2014

(Item 4)

RESOLVED that, subject to the amendment to paragraph 24 of Minute 3 to indicate that Mr Bird had said that no serious flood warning had been received in Yalding, as well as some other minor textual amendments, the Minutes of the meeting held on 11 March 2014 are correctly recorded and that they be signed by the Chairman.

10. Report Back from Scrutiny Committee

(Item 5)

(1) The Chairman reported his attendance at the Scrutiny Committee meeting on 12 June 2014, where he had been accompanied by the Flood Risk Manager, Max

Tant, the Senior Resilience Officer, Tony Harwood and Andrew Tait from Democratic Services.

- (2) RESOLVED that the report be noted, together with the assurance that the Committee is carrying out its work to the Scrutiny Committee's satisfaction.

11. Report to Cabinet on the Christmas/New Year 2013/14 Storms and Floods *(Item 6)*

- (1) The Chairman introduced the report on the decision of the Cabinet meeting on 7 July 2014 in respect of how KCC, in collaboration with its partners, could be better prepared to manage storm and flooding events in the future. He stressed the 17 recommendations which had now been agreed by Cabinet and underlined the role of the Committee in considering progress against the targets set.

- (2) Dr Eddy noted that some of the recommendations had been given a start date of April 2014. He asked for an update on their implementation.

- (3) Mr Harwood said that a Cross-Directorate Steering Group (or Delivery Group) was in the process of being established. It would be chaired by Paul Crick, Director of Environment, Planning and Enforcement. Meanwhile, work had started on Recommendation 4 ("Implement a strategy to encourage greater flood awareness and individual/Community resilience") through road shows in different parts of the County.

- (4) Mr Vye asked whether consideration had been given to the use of social media and whether Community Wardens could be utilised to give out the message in areas that were prone to flooding. He also offered to put forward a list of matters which could be scrutinised by the Committee.

- (5) Mrs Brown said that the parish councils of Yalding, East Peckham and Collier Street had permanent direct access to the Environment Agency control rooms and that discussions had also recently taken place between these parishes and the EA on how best to provide a consistent form of flood warning in the locality. She considered that Community Wardens should not be diverted from their task of looking after vulnerable people and that the risk of using them to deliver flooding messages was that they would do so in a manner which was not consistent with an overall strategy. She then said that one of the difficulties with using social media to convey warnings was that it provided the mainstream media with the scope and temptation to portray the entire system as though it were a farce.

- (6) Mr Flaherty said that one of the lessons learned during the winter events was that people had not searched for available information. It was considered that one reason for this was that they did not know how and where to look for it. Kent Fire and Rescue was therefore working on a training programme for Flood Wardens. He would be able to update the Committee and provide more details at a future meeting.

- (7) RESOLVED that:-

- (a) the report to Cabinet and its 17 recommendations be noted; and

- (b) the progress against the targets set be considered at future meetings of the Committee.

12. Highway Drainage Infrastructure Repairs, Renewals and Improvements *(Item 7)*

(1) Ms Katie Lewis, Drainage Manager introduced the report, which had originally been intended to focus on the capacity of the highway drainage system. She explained that this report had been expanded to take account of the fact that capacity issues were not the only causes of flooding on the Kent highways. Other issues were the damaged and ageing infrastructure, including ingressive tree roots; damage by third parties, where utility services had laid their services through KCC's infrastructure; and the very large number of soakways that were now coming very close to the end of their twenty to thirty year life spans.

(2) The two main capacity issues were connections into the drainage system as a result of the development taking place across the county; and also the number of local residents who were paving over their driveways, leading to more surface water running onto the road instead of draining away through permeable land. The other issue arose when water had to be discharged into a third party sewer owned by Southern Water or Thames Water. She said that KCC had no power to require them to increase the capacity of their water drainage system. Consequently, the only alternative (and usually costly) option was to divert water elsewhere. The most cost effective option was to build up the capacity of the highway by, for example, raising kerbs or by erecting permanent flood warning signs.

(3) Ms Lewis said that land drainage had been a particular problem during the recent winter. Historically, KCC had tended to be over-lenient. A more robust approach was now being adopted. Although KCC would always seek to work with the landowners, it was now becoming increasingly necessary to use Highway Authority powers by taking enforcement action or by undertaking the work themselves and recharging.

(4) A one-off additional sum of £3m had been invested by KCC for work on drainage improvement schemes as well as 200 – 300 minor repairs, additional to the work that the County would normally undertake. Whilst this was good news, it should be born in mind that there had been some 3.5k drainage enquiries which would require investment.

(5) Mr Lewin referred to a very recent flash flooding event in Swale, Gravesham and Dartford. He suggested that the Kent Planning Officers Group could discuss the entire question of flooding arising out of short term causes in terms of design of residential and commercial development.

(6) Ms Lewis replied by saying that the Severe Weather Plan was in the process of being re-written to respond to flash flooding occurrences. It had been very fortunate on this occasion that senior officers had been available to assist. The follow up discussions were considering the causes in greater depth as well as how to improve liaison arrangements for a rapid response. This discussion would involve Southern Water, the EA and the Emergency Planning Team. In terms of planning development, much consideration was being given to sustainable drainage. KCC

would soon be in a position to require developers to have their drainage schemes approved. This would help to alleviate the current problems.

(7) Mr Harwood said that there was a widely held view (which had been particularly evident during the recent flash flooding event) that the creation of dropped kerbs enabled water to follow gravity and seep into people's houses. Although dropping kerbs might seem like a relatively minor change, more diligence would be needed to ensure that their design did not produce this result.

(8) The Chairman expressed concern that many flood warning signs were too small and flimsy to be effective and put the view forward that they should be resistant to the effects of heavy winds.

(9) Mr Vickery-Jones said that Ashford BC had undertaken a lot of work on retaining water on site, so that it did not discharge anywhere near the natural flow. This might be worthy of more general consideration. He added that there were occasions when what appeared to be a question of lack of capacity actually turned out to a matter requiring minor adjustments to the layout of pipes. This had been the case at the Street Roundabout in Herne Bay.

(10) Dr Eddy asked what financial arrangements were being made for the repair of those parts of the infrastructure for which KCC had responsibility. He then alluded to the work of the Select Committee which had looked into the 2000 floods. It had expressed strong concern that farmers were ploughing up and down a slope rather than across it, increasing run-off in terms of amount and quality of water.

(11) Ms Lewis replied that the process for improving drainage was that an inquiry from the public would be followed a check for defects and the cleansing of the system. If a defect was found, the site would be risk assessed. The outcome of the risk assessment would determine where the defect was placed in the priority list. The current budget for repairing drainage systems was £4.5m. The current state of the network meant that KCC had to be more reactive in its approach. KCC's approach to run off as a result of farming activities was to write with an explanation that they were causing water to drain onto the highway and that they needed to stop. Farmers were invariably happy to change their practice once its consequences had been drawn to their attention. The next step was to work with the NFU to publicise the problem to a greater extent and help keep the highway safe.

(12) Mr Vye said that he had recently attended a meeting of the Little Stour and Nailbourne River Management Group who had provided him with details where they considered that failures in highway drainage had contributed to the winter flooding events. He asked for reassurance that highways drainage was being considered by the numerous multi-agency technical groups. He also asked for the Committee to receive regular highways drainage updates so that it could be reassured that as much as possible was being done to ensure that this was not a contributory factor to flooding events in the future. Ms Lewis replied that she would be happy to provide such update report. She confirmed that representatives from her team attended many of the meetings and worked closely with the EA, IDBs and others.

(13) In response to a question from the Chairman, Mr Tant confirmed that KCC did have enforcement powers, outside of IDB Districts, to ensure that drainage systems were unblocked. It could not, however, carry out the work itself (as it would have been able to do if it were a Unitary Authority). In Hildenborough, these powers rested

with the Upper Medway IDB. KCC would only be able to use enforcement powers at the point where internal drainage problems were actually causing flooding.

(14) Mrs Brown said that Yalding PC had worked closely with Ms Lewis' Team. She asked whether it would be helpful if a representative of the Parish Councils in each area were to identify highways drainage problems and report them to the Team. Ms Lewis replied that this would be a beneficial initiative, particularly in respect of minor roads. She agreed with the Chairman that the most effective way to do this would be through liaison with the Highways Stewards.

(15) RESOLVED to note the need for the current level of investment in highway drainage infrastructure to be maintained and potentially increased in the future.

13. Environment Agency and Met Office Flood Alerts and Warnings and KCC flood response activities since the last meeting
(Item 8)

(1) Mr Harwood reported that the Committee papers had been published before the previous weekend's flooding events. As a result, the figure of 1 Flood Alert set out in Appendix 1 of the report had now become 4. The latest events had occurred in the Shuttle and Cray catchment area; the upper River Stour; and the Isle of Sheppey.

(2) There had also been further significant surface water flooding events in Swale (Sittingbourne, Upchurch and Teynham) and Gravesham. This had included storm damage to the Civic Centre, resulting in communication network failures which, in turn, had made it difficult for the Borough Council's officers to respond to a lighting strike on a residential property which had required an evacuation and homelessness response. There had also been a power outage failure in Canterbury affecting some 200 properties as a result of a lightning strike on an overhead power cable. Another power outage failure had occurred in New Romney affecting a number of residents.

(3) Mr Harwood then said that it was essential that any lessons to be learned were identified and acted upon promptly.

(4) Mr Harwood drew the Committee's attention to the graph in Appendix 2 which showed that the number of KCC resilience and emergency severe weather related incident alerts had been steadily low for much of the previous decade, but had risen sharply over the previous two years. This could be related to global weather patterns and work should be undertaken to see whether this was the case.

(5) Mr Hills said that the weather patterns were becoming ever more volatile as evidenced by the increased number and variety of severe weather warnings issued by the Met Office in his own area of New Romney.

(6) Mrs Brown stressed the need to examine the question of how people could remain in contact with one another when the communications network had been damaged by the weather.

(7) The Chairman suggested that one method of alternative communication that had been used in the past had been the air raid sirens. In Whitstable, these had been

removed even though they might have been able to provide some measure of flood warning.

(8) Mrs Stockell stressed the need for alternative communication methods to be explored. One possibility might be the use of the old analogue phones.

(9) RESOLVED that the level of alerts since the previous meeting of the Committee be noted (as updated at the meeting) together with the longer term trend.

14. Sustainable Drainage Oral Update

(Item 9)

(1) Mr Tant said that there was provision in the Flood and Water Management Act 2010 for sustainable drainage to be delivered as a matter of course in all new development. The provision for KCC to become responsible for approving and possibly adopting SuDS schemes had not yet been commenced. Civil Servants had visited KCC as well as a number of other authorities and had underlined that the Government was committed to full implementation of the Act, including SuDS. The most likely course of events was that there would be an announcement towards the end of the current Parliament that commencement would take place early in the next Parliament.

(2) Mr Tant replied to a question from the Chairman by saying that the legislation would only apply to new development that took place after the date of commencement.

(3) RESOLVED that the report be noted.

To: Kent Flood Risk Management Committee – 17th November 2014

From: Michael Harrison, Chairman of Kent Flood Risk Management Committee

Subject: Southern Water response to Winter 2013/14 floods

Classification: Unrestricted

1. Background

1.1 Following the flooding in Winter 2013/14 Cabinet requested a paper to explore the issues that arose and identify areas for improvement. The paper that was produced included 17 recommendations, it was tabled at Cabinet on 7th July 2014 and formally approved. This paper was reported to Kent Flood Risk Management Committee on 21st July 2014.

1.2 Recommendation 13 of the report was for “EA / Southern Water to respond to queries / concerns regarding the perceived lack of / effectiveness of their rivers & flood management systems / assets”. Paul Crick, Director of Environment, Planning and Enforcement, wrote to Matthew Wright, Chief Executive, Southern Water, to ask him to explain what Southern Water had done in response to the flooding. His response is included in Appendix 1 of this report.

1.3 The Environment Agency is due to publish a report into the winter flooding.

2. Recommendations

That Members:

- Note the Southern Water letter (Appendix 1); and
- Consider any matters arising from the letter.

Michael Harrison, Chairman of the Kent Flood Risk Management Committee

Contact Officer: Max Tant, Flood Risk Manager 03000 413466
max.tant@kent.gov.uk

Background documents: Report to Cabinet on the Christmas / New Year 2013/14 Storms and Floods (7th July 2014)

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Paul Crick
Director of Environment, Planning and Enforcement
1st Floor, Invicta House
County Hall
Maidstone
Kent
ME14 1XX

Your ref

Our ref

MW/EC

Date

24 October 2014

Contact

Tel 01903 272393

Fax

Dear Paul

I am writing in response to your letter dated 29th September 2014, requesting that Southern Water provides you with information on how we responded to the flooding experienced during the winter of 2013-14. We are committed to working with other flood risk management authorities across our region, including Kent County Council (KCC), and as such welcome the chance to comment on last winter's flooding. In doing so, I would first like to stress that in 2013-14 Southern Water:

- Engaged regularly with Lead Local Flood Authorities (LLFAs), the Environment Agency (EA) and other flood risk authorities across our region, actively taking part in Flood Risk Management Boards and the Southern Regional Flood and Coastal Committee.
- Worked in partnership with other agencies and as part of a multi-agency response to winter flooding across our region.
- Was an active Steering Group Member on a number of flood and coastal erosion projects across the south east.
- Invested heavily (more than £5M) to survey and seal sewers and manholes in areas susceptible to groundwater flooding.
- Conducted an extensive programme of work to seal sewers, where we identified significant leaks, not just in our sewer system but also in some customers' lateral drains. This meant that we only needed to deploy tankers after higher groundwater levels were reached in many areas, when compared with previous flood events.
- Developed in-house, and deployed our unique Eco-Filter process, to reduce the impact on discharges to streams and watercourses.
- Improved our sewer network serving a number of vulnerable areas, so that it was better able to withstand infiltration from groundwater.

In direct response to each of the subjects you have specifically raised queries on, I would like to update you as follows:

Published reports on floods occurring due to our assets

Annually under Section 18 of the Flood and Water Management Act 2010, the EA has a duty to report on flood risk management and mitigation. Along with other water and sewerage companies, Southern Water provided a report to the EA in April 2014 that outlined progress over the previous financial year. There was significant emphasis on the issues surrounding the 2013-14 flooding, but we highlighted the good progress on infiltration reduction and other flooding related investment that has been made, or is ongoing.

The final 2013-14 report was issued by the EA on 19th September 2014 and can be viewed via <https://www.gov.uk/government/publications/managing-flood-and-coastal-erosion-risk-april-2013-to-march-2014>. It clearly cites Southern Water's previous work to reduce groundwater infiltration (through sewer and manhole sealing) and the positive impact that this had during the 2013-14 floods. It also refers to the cost of 2013-14 flooding and the £20M total flood response spend by our organisation.

There was reference in the EA report to £6M worth of investigations and repairs during 2013-14, including in villages along the River Nailbourne, and the benefits of such investment being seen in many catchments across our region during the winter. It referred to Southern Water only needing to use tankers when higher groundwater levels than previously experienced were reached. Nevertheless, tankering and over-pumping costs peaked at around £150,000 a day, with more than 330 staff involved and 117 tankers in use. Indeed, at its peak Southern Water was pumping out around 125 million litres a day of excess water from its sewerage system – enough to fill 50 Olympic sized swimming pools.

This goes some way to demonstrate the extreme conditions that were experienced and dealt with by our workforce throughout Kent, Sussex, Hampshire and the Isle of Wight. Groundwater levels were at a record high during the wet weather of 2013-14, resulting in 40 groundwater flooding locations across our region.

Asset improvements to prevent flooding

In 2013-14, Southern Water invested more than £6 million to survey and seal sewers and manholes in areas susceptible to groundwater flooding across our region. As part of our Wastewater Pumping Station Total Care Programme, we have Total Care Plans (TCPs) identified for 500 sites selected in favour of pollution and flooding. The Programme started on March 2013 and some 470 sites had TCPs completed by the end of December 2013, reducing the risk of future pollution events and flooding. The TCP work has focussed on driving resilience and performance, but a small number of sites (less than 10) within the Programme were impacted by groundwater during 2013-14.

Increased sewer network resilience

During the current 5 year Asset Management Period of investment covering 2010-15, we have undertaken resilience assessments of our key assets, in order to identify where these require enhanced protection and justified future investment. Certain operational sites, such as Sandown Water Supply Works, were flooded by surface water during the 2013-14 wet weather. Those few operational sites that were actually flooded during 2013-14 continued to operate, despite the severe weather conditions.

As well as contending with flood waters, storm conditions had a significant impact on our assets during 2013-14, with some 250 pumping stations losing power during the Christmas

2013 storm alone. To counter this risk, we routinely undertake criticality assessments on our sites to determine the impact of power outages. Such assessments include reviewing vulnerability to power outages, as well as the impact of outages on customers and/or the environment.

Where the frequency and consequence of outages is deemed unacceptable, e.g. it results in internal flooding or a serious pollution incident, then a permanently installed generator is required. Where the frequency of outages is low or has minimal impact, then we rely upon mobile generators, which are located at strategic centres such as Ashford, Maidstone and Tonbridge. Alternatively we use tankers to take the flow from pumping stations and discharge it at local wastewater treatment works. Our experience over the last winter has shown our risk based approach to be effective and has not required us to install additional generators.

Other measures to prevent flooding

We have been working in a number of other ways to help prevent flooding. Being actively involved in a number of flood and coastal erosion projects across our region has helped to better inform these projects, provide valuable input and guidance and also to maximise protection of our own assets. LLFAs have valued our input and representation on their respective Flood Risk Management Boards, as well as the Southern Regional Flood and Coastal Committee. Drawing upon lessons learnt during previous floods, including the West Sussex 2012 floods, we have worked well with LLFAs and other flood risk management authorities to respond to the unprecedented weather conditions experienced across the south east during 2013-14.

Our collaboration with other flood risk management authorities has influenced our planning investment, in both the current (2010-15) and the next 5-year Asset Management Period (2015-20). From 2015 we plan to focus on wider adoption of Surface Water Management Plans, adoption of technology to allow integration of different flood mechanisms and real time management of the 'whole drainage' network. We also want to ensure that there is a clearer understanding of roles and responsibilities for all parties going forwards and to maintain partnership working, including multi-agency responses.

In addition, as a result of its effectiveness, we wish to continue our programme of surveys and repairs, to develop proposals for seasonal overflows with tertiary treatment and to continue to develop Infiltration Reduction Management Plans where necessary across our region.

Work with local communities to explain the risk and improve resilience

Our involvement with local communities has been prominent in those areas of our region where the flooding of 2013-14 was particularly severe. In Kent, a key part of our focus is in the County centred upon the Nailbourne Valley, where we have been working closely with authorities such as parish, borough, district and county councils, the Environment Agency and river management group to jointly resolve the problems caused by groundwater flooding. The following is a summary case study outlining our work on flood protection in village communities along the Nailbourne:

Nailbourne flood protection scheme

Work began in early 2013 on a £1 million programme to tackle the problem of high levels of groundwater flooding the sewer network in villages along the Nailbourne

Recent flooding

We were recently using five tankers and five temporary pumps to remove wastewater from the sewers serving the villages along the Nailbourne.

Investigations

In 2013, engineers used remote operated CCTV cameras to extensively survey over ten kilometres of sewers and 250 manholes. Sources of groundwater infiltration were identified. The main locations were:

- Bridge, near Brewery Lane and Mill Lane
- Bourne Park, at Bishopsbourne
- Charlton Park
- Barham
- Substantial leaks were also found elsewhere along the valley.

Between Sept 2013 and Jan 2014, over 3.5 km of sewers were repaired.

We are working closely with authorities such as parish, borough, district and county councils, the Environment Agency and river management group to jointly resolve the problems caused by groundwater flooding.

Benefits

Due to the severity of the flooding this year, the repairs were not able to eliminate groundwater entering the sewers, but Southern Water did not need to start using tankers until the groundwater level at Little Bucket borehole had risen to 80m, compared to a level of 78.5m in 2013 when tankering commenced.

Biological treatment units have been installed at four of the five over-pumping locations along the bourne, to improve the quality of the water being discharged.

Planned Work

A flow monitoring survey to identify remaining areas of infiltration will be carried out when groundwater levels fall slightly.

Contribute to a Surface Water Management Plan led by the lead flood Authority.

A study will be carried out in Spring 2014, of the potential for an emergency discharge at an appropriate location in the catchment. The discharge would include some elementary treatment.



Geographical coverage of our improvements

In your letter you have stated that the geographical areas where residents have raised questions for Southern Water are Tonbridge, Five Oak Green and the villages of the Nailbourne Valley and have asked where else we have undertaken improvements in response to the 2013-14 floods. In relation to the 2013-14 floods in Kent and associated improvements that have been identified or implemented since, I would like to take the opportunity to update you on key geographical locations as follows:

Nailbourne Canterbury area - This was the worst impacted area in 2013-14, where the sewerage system was inundated with groundwater during the winter. To ensure drainage within the system, Southern Water needed to over pump the sewerage system at five locations: Barham, Bishopsbourne, Patricxbourne, Bekesbourne and Littlebourne. In addition, we utilised tankers at various locations including Barham, Patricxbourne and Bridge. We have previously invested in sewer sealing to reduce the level of infiltration, and this has proved effective as the requirement for over pumping was reduced, i.e over pumping commenced at a higher groundwater level than previously experienced and also ceased when the groundwater level was higher than previous events. Since the event we have installed non-return valves at key properties, which will prevent them from flooding due to the sewerage system backing up. We have also refurbished the major pumping station, School Lane. The station now has more modern variable speed pumps and new control equipment. This will allow the station to operate at the maximum possible for the downstream sewer capacity. Although not yet tested under high groundwater levels, it is likely that it will pump more than prior to its refurbishment, thus reducing our reliance on the over-pumping.

Nailbourne Elham area – Southern Water experienced inundation of the sewerage system in both Elham and Ottinge last winter. This was the first such event since the winter of 2000-01. To ensure the free drainage of the sewerage system, we over-pumped diluted wastewater (c.90% groundwater) from The Orchards Pumping Station into the Nailbourne. To minimise the impact of this discharge, we installed a temporary treatment facility to improve the discharge quality. We have since undertaken a CCTV examination of the sewerage network and as a result will be undertaking jetting of parts of the sewerage system to remove fat build up and root ingress. We will be replacing a sewer liner, previously inserted in the sewer pipe to seal the sewer, as it has been distorted and is no longer effective. In addition, we will be sealing three manholes where infiltration has been identified. This work will be completed during the Autumn of 2014. We are also investigating the possibility of isolating a section of the sewerage system, prone to flooding under high groundwater conditions, and servicing the area by tanker.

We are looking at the possibility of providing temporary pumping of a small section of the sewerage system in Ottinge to allow permanent drainage to all properties in the catchment. This review will be completed by the end of October 2014 and if suitable the solution will be implemented in November 2014. In this catchment we have replaced a number of manhole covers that were submerged by groundwater, with sealed units, this will prevent the ingress of significant amounts of water.

Petham Bourne - The Bourne was evident again last winter, which is the first time since the winter of 2000-01. The high ground water level caused surcharging of the sewerage system leading to discharging from two manholes in the grounds of the Stiner School, near Chartham. In recognition of this, Perry Court Pumping Station, has undergone refurbishment over the spring and summer of 2014 and the opportunity has been taken to up-rate its pumping capacity by a factor of three. We believe that this improvement will be sufficient to maintain free drainage in the system and should prevent the overflowing of the manholes in the future.

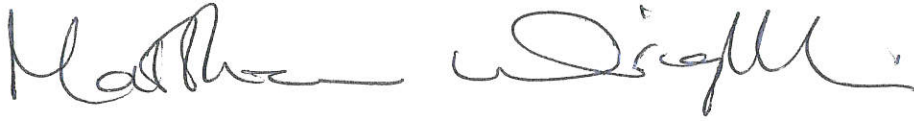
Alkham Valley - Our sewerage system suffered infiltration as a result of the high groundwater levels in 2013-14. Although not as severe as elsewhere, this led to some external flooding and several customers suffering restricted toilet use. We assisted by using tankers as required. A CCTV survey undertaken, after the flows had subsided, did not show any points of groundwater ingress.

Preston & Elmstone - We have replaced a number of manhole covers with sealed units to prevent surface water ingress. In addition, a number of sewers have been jetted to ensure that operate at full capacity. The operation of Court Lane Pumping Station allowed flows to back up in the catchment and cause some garden and highway flooding. As a result of this, the station was overhauled to ensure it operates at maximum capacity. Court Farm Pumping Station had previously undergone refurbishment, but its reliability is not as good as we would like and so we are considering the option to replace it with a conventional submersible pumping station.

Ickham and Wickhambreaux - the majority of the issues in this location during 2013-14 were associated with fluvial flooding from the Nailbourne, which caused our wastewater pumping station to fail and prevented an immediate response. We are currently reviewing an appropriate means of protecting the site with bespoke flood protection barriers, which is complicated by its location at a road junction.

I hope that you find this response to your queries useful. Should you have any further questions or concerns on any aspect of our flood risk management work then please feel free to contact me again.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Matthew Wright', written in a cursive style.

Matthew Wright
Chief Executive Officer

To: Kent Flood Risk Management Committee – 17th November 2014

From: Michael Harrison, Chairman of Kent Flood Risk Management Committee

Subject: Christmas / New Year 2013-14 Storms & Floods – Progress Report.

Classification: Unrestricted

Summary: To update Kent Flood Risk Management Committee on progress against the 7th July Christmas / New Year 2013-14 Storms & Floods Report to Cabinet

1. Background

1.1 The severe weather events that the County experienced from October 2013 to February 2014 were unprecedented, and impacted many communities, individual residents and business across Kent:

- The East Coast tidal surge on 5th & 6th December was equal to a 1 in 200 year tidal event and the biggest tidal event to impact Kent since the devastating floods of 1953;
- This was also the wettest winter in over 250 years, with 120mm of rainfall falling between 19th to 25th December onto already saturated ground;
- On Christmas Eve, the highest ever peak flows were recorded upstream of the Leigh Flood Storage Area;
- 929 residential and commercial properties were flooded across Kent, compared to approximately 1000 properties flooded in the 2000 floods;
- Additionally, high winds caused extensive damage and disruption with, tragically, the loss of one life on October 23rd (the St Jude Storm) and 28,500 people without power on Christmas Eve.

1.2 These extreme weather events stretched all public services, emergency responders, utilities and the transport network. The main risk and impact was to life and property, but events also significantly impacted on the environment, particularly the farming community.

1.3 After such events KCC, along with its statutory and voluntary partners, has a duty to examine and assess its plans and procedures to identify lessons to be learnt. To this end Cabinet requested a detailed paper, which was tabled on 7th July 2014. All 17 of its recommendations were formally approved by Cabinet. This paper was reported to Kent Flood Risk Management Committee on 21st July 2014.

2. Next Steps

2.1 A Cross-Directorate Steering Group (chaired by Paul Crick, Director of Environment, Planning & Enforcement) has been established to take forward the 17 recommendations outlined in the 7th July report to Cabinet.

2.2 A report was presented to Cabinet on 13th October providing an update on progress against these actions in preparation for Winter 2014-15. This report is attached at Appendix 1.

3. Recommendations

3.1 That Members:

- Note the contents of the Progress Report (Appendix 1); and
- Consider progress against the targets set in the original report.

Michael Harrison, Chairman of the Kent Flood Risk Management Committee

Contact Officer: Tony Harwood, Senior Emergency Planning Officer 07850 907286 / tony.harwood@kent.gov.uk

Background documents: Report to Cabinet on the Christmas / New Year 2013/14 Storms and Floods (7th July 2014)

From: Paul Crick, Director of Environment, Planning & Enforcement
To: Cabinet – 13th October
Decision No: N/A
Subject: Christmas / New Year 2013-14 Storms & Floods – Progress Report
Classification: Unrestricted
Past Pathway of Paper: N/A
Future Pathway of Paper:
 Growth, Economic Development & Communities Cabinet Committee – 2nd December
 Environment & Transport Cabinet Committee – 5th December
 Kent Flood Risk Management Committee – 17th November
Electoral Division: N/A

Summary: This report provides Cabinet with an update on progress being made to deliver the 17 recommendations in the Christmas / New Year 2013-14 Storms & Floods – Lessons Learnt report that was endorsed by Cabinet on 7th July 2014. It also provides an update on new developments relating to the implementation of sustainable drainage.

Recommendations: Cabinet is asked to note the progress being made against the 17 lessons learnt recommendations and the update on sustainable drainage.

1. Introduction

- 1.1 Following the severe weather experienced over Christmas and New Year 2013-14, and based on a wide range of public consultations and internal and external debriefs, a comprehensive lessons learnt report was presented to, and approved, by Cabinet on 7th July 2014.
- 1.2 The report included 17 recommendations, and this report provides Cabinet with an update on progress made to date against these recommendations.
- 1.3 It also provides an update on recent developments relating to the implementation of sustainable urban drainage policy and practice.

2. Progress Report

- 2.1 Significant progress has been made by KCC and our multi-agency partners in implementing all of the recommendations in the 'lessons learnt' report. A detailed summary against each of these is provided at **Annex 1**. Key highlights can be summarised as follows:
- 2.2 Management action: A series of internal and partnership debriefs have been carried out and management structures established to deliver the recommendations identified in these reports. Within KCC, a cross-directorate Corporate Resilience Steering Group has been established, with Director-level representation. Similarly, the Kent Resilience Forum (KRF) has established a multi-agency Pan-Kent Flood Group, chaired by the Environment Agency. Terms of reference for both groups have been agreed, action plans drawn-up and internal and external governance / reporting lines established to ensure appropriate member and senior officer

oversight. Additionally, the multi-agency Strategic Recovery Coordination Group, chaired by the Director of Environment, Planning and Enforcement, was reconvened on 23rd September, to review lessons learnt, current progress and preparations for winter 2014-15. Furthermore, the KRF will use its annual seminar at the East Malling Conference Centre on 14th November to provide a further health check on partners' preparations.

- 2.3 Plans: Comprehensive reviews of existing single and multi-agency emergency plans have been undertaken, including generic plans and those specific for dealing with flooding and severe weather. The KCC Major Emergency and Flood Response Plans have been reviewed and re-published and the suite of multi-agency flood plans will be re-published in the coming months. Additional new plans have also been drawn-up as a result of lessons learnt e.g. KCC Highways, Transportation & Waste have developed new Severe Weather plans and a flood plan has been developed for Little Venice Caravan Park, which flooded several times over Christmas / New Year.
- 2.4 Training & exercising: Since January 2014, 76 multi-agency training sessions and exercises have been / will be run in Kent, to familiarise many hundreds of staff from across the KRF partnership in a variety of emergency response roles (from senior officers to front-line staff) and scenarios. Internally within KCC a fundamental review of key emergency response roles has been undertaken and training needs identified. The cross-directorate Corporate Resilience Steering Group will assist in the identification of staff to be trained and a series of training & exercising sessions (supported by e-learning and briefings) will be held. An initial emergency planning awareness training pilot ran in September, with 37 managers participating from across KCC. Additionally, all Community Wardens are now trained as Incident Liaison Officers, with 12 vans and 2 4x4 vehicles equipped with emergency response equipment for deployment to affected communities in the event of an emergency.
- 2.5 Community engagement: A long-standing programme of multi-agency work to develop community-level emergency plans and flood plans has continued apace, with many local plans now in place or under development in key communities at risk of flooding. This approach has been complemented by a range of other activities to encourage greater awareness and preparedness for flooding and other emergencies, including a series of 'flood fairs' held across the county and the establishment of Multi-Agency Flood Alleviation Technical Working Groups to understand and tackle complex flood risk issues. 42 volunteers from Yalding, East Peckham, Tonbridge & Hildenborough have also been trained and equipped and further sessions are planned for other parts of the county. Additionally, 15,000 copies of a newly-published booklet '*What should I do in an emergency?*' have been distributed through a variety channels and access points. A wider awareness campaign will be undertaken in the coming months, linked to the national 'Get Ready for Winter' campaign.
- 2.6 Financial investment & flood risk management: £8.6m central government grant received by KCC in tranche 1 of the 'Severe Weather Recovery Scheme' to help repair damaged highways infrastructure. A further £499,000 has been received in tranche 2. We are still awaiting a final settlement figure from DCLG for a claim submitted under the Bellwin Scheme of emergency financial assistance. KCC Highways & Transportation is investing an additional £3m to enable the delivery of 120 drainage improvement schemes in 2014/15. KCC is working with the EA, to identify strategic schemes in Kent that require partnership funding. River Medway and Beult Flood Defence Schemes are being taken through to feasibility stage, with KCC investment of £255,000. Other partnership contributions are currently being sought.

3. Sustainable Drainage update

- 3.1 The Flood and Water Management Act 2010 contains provisions for an approval and adoption regime for drainage in new developments. This regime would make the KCC an approving body with a duty to approve the technical details of new drainage in accordance with a set of National Standards, and adopt any approved drainage that serves more than one property. The National Standards promote sustainable drainage. Defra have been working on measures to deliver this part of the act and KCC had been expecting to become the approving body in the next 6-12 months.
- 3.2 Defra has found it difficult to deliver this provision to the satisfaction of all stakeholders. As a consequence they are considering an alternative approach and are currently consulting on revising planning guidance to promote sustainable urban drainage in new developments with no proposals to alter the regime for maintenance. KCC is responding to this consultation. Our primary concerns are that this option may not provide sufficient incentive to increase the uptake of sustainable urban drainage and it does not provide a reliable means to ensure long-term maintenance. We will keep Cabinet informed of developments in this area.

4. Recommendations

Recommendations: Cabinet is asked to note the progress being made against the 17 lessons learnt recommendations and the update on sustainable drainage.

5. Background Documents

Christmas / New Year 2013-14 Storms & Floods - Final Report (7th July 2014)

Report: <https://democracy.kent.gov.uk/documents/s47250/Item%20-%20-%20Flooding.pdf>

Appendix: <https://democracy.kent.gov.uk/documents/s47251/Item%20-%20-%20Appendix.pdf>

6. Contact Details

- Paul Crick, Director of Environment, Planning & Enforcement
01622 221527 / paul.crick@kent.gov.uk
- Stuart Beaumont, Head of Community Safety & Emergency Planning
01622 694878 / stuart.beaumont@kent.gov.uk
- Steven Terry, Kent Resilience Team (KRT) Manager
01622 692121 x 7811 / steve.terry@kent.gov.uk
- Sarah Anderson, Flood Risk and Natural Environment Manager
03000 413316 / sarah.anderson@kent.gov.uk

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Christmas & New Year 2013-14 Storms & Floods – Lessons Learnt Progress Report

Current Progress	Next Steps	RAG Status
Recommendation 1: Undertake a fundamental review and update of key KCC and partnership plans to ensure that they are fit for purpose for even the most complex and protracted of incidents		
<ul style="list-style-type: none"> • KCC Corporate Resilience Steering Group established to oversee implementation of Cabinet recommendations. • Kent Resilience Forum (KRF) Pan-Kent Flooding Group established to oversee implementation of multi-agency recommendations. • KCC Flood Response and Major Emergency Plans and Emergency Contacts Directory have been reviewed, updated & re-issued to key contacts • KCC Highways, Transportation & Waste have developed new Severe Weather plans, informed by experiences and lessons learned from winter 2013-14 and previous cold winter weather. • Kent Resilience Team (KRT) is working the Pan-Kent Flood Group to review & update of the KRF Pan-Kent Strategic Emergency Framework, Pan-Kent Flood Plan and 13 x Medway / District / Borough level plans. • Ongoing programme of work to develop community-level flood plans (see Recommendation 4). 	<ul style="list-style-type: none"> • Suite of multi-agency plans to be finalised and circulated to key partners. • Further review and simplify plans to align to key roles and training • Series of KCC and multi-agency awareness-raising & briefing sessions, training and exercises to be run over the coming month e.g. KCC training and exercise sessions scheduled for November. 	AMBER

Recommendation 2: 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		
<ul style="list-style-type: none"> • A review of professional and generic roles across KCC in relation to emergency response has been carried out and training needs identified • Introduction to Resilience and Emergencies training was carried out in early September with 37 managers enrolled. This will be further developed as e-learning and integrated into KCC Learning and Development to increase reach across the organisation. • Recommendations for 'reservists' will be taken to the Corporate Resilience Steering Group in October • Targeted training courses for specific roles and responsibilities have been identified and are in development • Initial meeting with HR to establish more effective out-of-hours processes and integration into job roles as appropriate. • Since January 2014, 76 multi-agency training sessions and exercises have been / will be run in Kent, to familiarise many hundreds of staff from across the KRF partnership in a variety of emergency response roles and scenarios. 	<ul style="list-style-type: none"> • Identification of officers for targeted training in November (to be led by the Steering Group) • Paper to CMT to establish potential for on-call system for Corporate Directors in event of a major emergency and provide short, targeted training as appropriate • Continue work with HR to establish requirements. • Run training for key emergency response roles and reservists in November • KCC staff to be identified and enrolled to attend multi-agency training in the coming months. 	AMBER
Recommendation 3: Develop a consistent countywide policy & plans for maintaining & providing sandbags and other practical support to individuals & communities at risk of flooding.		
<ul style="list-style-type: none"> • KCC, Medway and Districts / Boroughs working together to review each agency's current stocks of sandbags (or equivalent products), policies and plans for deployments. • Work also underway to review / enhance 	<ul style="list-style-type: none"> • and gap analysis of policy and resources across KCC and partner organisations to be undertaken in Sept. Additional stocks / arrangements to be put in place by individual agencies to address any gaps in readiness for winter. Discussions to be held with KCC and partners to work towards a joined-up a countywide policy. 	Review AMBER

<p>arrangements for provision of other practical support e.g. key accounts with hotels / B&Bs, provision of dehumidifiers, pumps, access to contractors for gas / electric / water safety checks etc.</p>	<ul style="list-style-type: none"> • Work with Association of British Insurers, KCC Kent Support & Assistance Service, Finance, Legal & Insurance to develop a robust policy for provision of support to individuals / communities affected by flooding or other emergencies. 	
<p>Recommendation 4: 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.</p>		
<ul style="list-style-type: none"> • KRF Resilient Communities is currently developing a strategy to bring together work around key themes, to focus the wide range of work being undertaken by individual agencies and in partnerships. • This will include the Community Emergency Planning programme run by KCC in association with Kent Association of Local Councils. Currently 10% of Parish / Town Councils have a plan. Strategy to be developed to significantly enhance take-up countywide, with a particular focus on communities at risk of flooding. Further training sessions are scheduled for October / November. • Pilot session of Flood Warden training facilitated by KFRS, EA, KCC, Maidstone and Tonbridge & Malling Borough Councils on 12th July. 42 volunteers from Yalding, East Peckham, Tonbridge & Hildenborough, trained and equipped as Flood Wardens on 12th July. Further pilot scheduled for delivery in east of the county in October / November. • Work also underway to provide caravan, camping, gypsy & traveller sites with guidance and templates to develop their own emergency / flood plans. Flood plan Little Venice Caravan Park has now been completed. 	<ul style="list-style-type: none"> • Work with KRF Pan-Kent Flood Group and KRF Public Warning & Informing Group to develop and implement a countywide strategy. • Scope opportunities to apply for funding to take forward severe weather community resilience projects e.g. Interreg VA 2-Seas programme. 	<p>AMBER</p>

Recommendation 5: Undertake a fundamental review & update of the Floodline Warnings Direct (FWD) Service for communities with high / complex flood risk.		
<ul style="list-style-type: none"> Following consultations with communities and partners during the summer, the EA has refined its flood warning areas for the Rivers Medway, Bourne, Beult and Teise catchments. These will allow the EA to provide more targeted and locally-specific warnings to particular at risk communities. 	<ul style="list-style-type: none"> New flood warning systems to go live in late October / early November. Final update of single- and multi-agency plans to reflect new arrangements, supported by awareness-raising, briefings and training sessions 	AMBER
Recommendation 6: 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.		
<ul style="list-style-type: none"> KRF Public Warning & Informing meeting on 30th September to scope development of a media & communications strategy to implement in advance of, during and after flooding / severe weather events. 15,000 copies of newly-published KRF booklet 'What should I do in an emergency?' have been distributed through a variety channels and access points. e.g. all Parish / Town Councils, Gateways and is being made available electronically via partner websites and www.kentprepared.org.uk. A wider awareness campaign will be undertaken as part of the above strategy. 	<ul style="list-style-type: none"> Work with the KRF Pan-Kent Flood Group to develop and implement the strategy, linking-in with outputs from other linked recommendations and initiatives e.g. national 'Get Ready for Winter' campaign which commences on 20th October. Explore provision of loudhailers, universal mobile chargers and deployment of on-scene communications in the event of power outages. 	AMBER
Recommendation 7: Develop arrangements to provide critical 'on scene' liaison & support to affected communities e.g. via multi-agency 'Bronze' / Operational teams.		
<ul style="list-style-type: none"> KRF Pan-Kent Flood Group currently undertaking review and gap analysis of key on-scene liaison / support roles (e.g. Incident Liaison Officers, door-knocking, evacuation & shelter, provision of information, welfare checks and sandbagging) and supporting training, 	<ul style="list-style-type: none"> Enhancements to multi-agency on-scene response capability to be developed and rolled-out over coming months. Need to continue promotion of KCC staff to attend Local Authority-specific (next event 9th October) and multi-agency training (next event 27th November) sessions, as well as providing additional training / awareness 	AMBER

<p>guidance and resources.</p> <ul style="list-style-type: none"> • All Community Wardens now trained as Incident Liaison Officers, with 12 x vans and 2 x 4x4s equipped with emergency response equipment. • KRT is currently working with the Kent Voluntary Sector Emergencies Group to put in place new or enhanced MOUs to formalise support provided by voluntary sector partners. • See also Flood Warden and Community Emergency Plan training under Recommendation 4. 	<p>sessions on specific roles.</p> <ul style="list-style-type: none"> • Additional training sessions for new / existing KCC staff to be rolled-out in coming months. • Formalise MOUs with voluntary sector partners ready for winter. 	
<p>Recommendation 8: 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.</p>		
<ul style="list-style-type: none"> • Flood Recovery Minister (Greg Clark MP) met with UK Power Networks (14th June) to address concerns raised by Kent partners. • DCLG and Flood Recovery Minister actively engaged as part of the multi-agency recovery management structures chaired by KCC, as were UK Power Networks. • Although these have now been formally stood-down, linkages with both DCLG and the Flood Recovery Minister are being maintained and will be kept regularly apprised of progress and any blockages. 	<ul style="list-style-type: none"> • Response and lessons learned report received to be picked-up through KRF Pan-Kent Flood Group. • Various utilities companies have been invited to join the group and progress will be monitored closely. 	GREEN
<p>Recommendation 9: Streamline & enhance existing multi-agency information management protocols & systems for sharing critical data in the planning for & management of emergencies.</p>		
<ul style="list-style-type: none"> • Work underway led by KRT to explore a number of enhancements to multi-agency communications and information management, including automated alerting systems, web-based logging, extranet and GIS systems. • EA is reviewing availability / provision of flood 	<ul style="list-style-type: none"> • Work to be progressed over the coming months, linking into the KRF Pan-Kent Flood Group. 	AMBER

<p>mapping at multi-agency control centres and on-scene response locations.</p> <ul style="list-style-type: none"> • KCC, Medway and Districts / Boroughs working together to enhance protocols for Local Authority coordination, feeding into the multi-agency response. 		
<p>Recommendation 10: Formalise the recovery management structures developed during Operation Sunrise 4 and adopt these as good practice.</p>		
<ul style="list-style-type: none"> • KCC-led Strategic Recovery Coordinating Group met 23rd September to review lessons learned, current status and preparedness going into winter 2014-15. • Recovery management structures, processes, good practice & lessons learned to be incorporated into single- and multi-agency plans, supported by appropriate awareness / training sessions. • 15-20 staff from KCC and multi-agency partners attending locally-delivered Emergency Planning College 'Recovering from Emergencies' course 2nd-3rd October. 	<ul style="list-style-type: none"> • KRT currently leading a review of the multi-agency Pan-Kent Emergency Recovery Framework and associated plans. 	<p>AMBER</p>
<p>Recommendation 11: Develop protocols to support emergency responders in deciding when to escalate / de-escalate to / from the 'emergency response' & 'recovery' phases.</p>		
<ul style="list-style-type: none"> • Plans, guidance and training have been reviewed and updated in line with new national doctrine (the 'Joint Decision Model') to foster more effective multi-agency working. • >30 multi-agency training sessions to support this initiative have been run in Kent over last 12 months, training hundreds of staff from senior officers down to front line staff. • Role of the KRT to provide professional advice 	<ul style="list-style-type: none"> • Further multi-agency training opportunities, briefings and awareness raising sessions planned over the coming months. • Role of KRT in emergencies to be agreed and embedded ready for winter 2014-15. 	<p>AMBER</p>

<p>and support to multi-agency partners, from first alerting, through to the emergency response and recovery phase is currently being scoped with multi-agency partners.</p>		
<p>Recommendation 12: Influence Central Government to secure additional financial support in recognition of the severe burden that these incidents have placed on KCC.</p>		
<ul style="list-style-type: none"> • £8.6m central government grant received from the 'Severe Weather Recovery Scheme' in Tranche 1 to help repair damaged highways infrastructure. Further £499,000 received in Tranche 2. • £982.7k received under the Bellwin Scheme will be used to replenish the 'Emergency Conditions' reserve, which is currently at zero. • KCC Sustainability & Climate Change team published its final report detailing multi-agency expenditure captured in the Severe Weather Impact Monitoring System (SWIMS) for winter 2013-14 (www.kent.gov.uk/swims) 	<ul style="list-style-type: none"> • DCLG will shortly to be launching a public information website will provide a breakdown by Local Authority area of data, including expenditure, relating to the winter storms and floods. 	<p>GREEN</p>
<p>Recommendation 13: EA / Southern Water to respond to queries / concerns regarding the perceived lack of / effectiveness of their rivers & flood management systems / assets</p>		
<ul style="list-style-type: none"> • Andrew Pearce (EA) attended KCC Cabinet meeting on 7th July and assured members that assets, such as critical locks, were maintained to the highest operational standards and to support this, this year an additional £1million of funding for revenue and maintenance activities had been secured and enhanced programmes would be in place before the winter. • Southern Water invited to attend future meeting of Kent Flood Risk Management Committee to provide similar update and for members to raise queries / concerns. 	<ul style="list-style-type: none"> • Andrew Pearce invited to KCC Cabinet meeting on 13th October to provide a further progress update. • Southern Water attending Kent Flood Risk Management Committee meeting on 17th November. 	<p>AMBER</p>

Recommendation 14: 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.		
<ul style="list-style-type: none"> Working with the EA, strategic schemes in Kent have been identified that require partnership funding Medway and Bult River Flood Defence Scheme being taken through to feasibility stage with KCC investment of £255,000. Other partnership contributions currently being sought through Tonbridge & Malling and Maidstone Borough Councils. 	<ul style="list-style-type: none"> Agree KCC long term approach to partnership contributions for other priority flood defence schemes. 	AMBER
Recommendation 15: 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.		
<ul style="list-style-type: none"> Initial meeting held between KCC Resilience & Emergencies Unit, KRT, KCC Flood Risk Manager and KCC Planning Applications team where a strategy was agreed to address interface between resilience and planning systems - strategy to be developed and agreed A draft digest of flood risk and wider resilience chapters within National Planning Policy Framework and National Planning Policy Guidance. Online toolkit for planners developed with KCC Public Health and Sustainability & Climate Change team. 	<ul style="list-style-type: none"> Draft guidance document in preparation, expanding upon relevant flooding and wider resilience chapters of the National Planning Policy Framework / National Planning Policy Guidance with standing advice and practical examples. Host toolkit and guidance documents on relevant websites and access points and engage planners, developers and the general public to promote awareness and usage. 	AMBER
Recommendation 16: Implement a strategy to encourage greater awareness & take-up of individual & community flood protection measures e.g. property level protection, sandbags.		
<ul style="list-style-type: none"> Series of community consultations and Flood Fairs held in Spring 2014 in the communities affected by flooding. 	<ul style="list-style-type: none"> Development of European funding bid to further develop community resilience programmes (to be submitted end 2014) to help deliver the strategy. 	AMBER

<ul style="list-style-type: none"> • Working with communities where we are undertaking surface water management plans (SWMPs) to help them understand the risks identified and opportunities for them to help themselves. 		
Recommendation 17: 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		
<ul style="list-style-type: none"> • Series of Multi-Agency Flood Alleviation Technical Working Groups established across Kent, working with key stakeholders to understand and tackle complex flood risk issues. • Developing Flood Risk to Communities (working title) documents which give an overview of flood risk on a district basis and signpost to other documents. • Developing SWMPs across Kent 	<ul style="list-style-type: none"> • Further develop and embed these initiatives as part of our long-term flood risk management strategy. 	AMBER

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To: Kent Flood Risk Management Committee – 17th November 2014

From: Michael Harrison, Chairman of Kent Flood Risk Management Committee

Subject: Kent Resilience Forum Evacuation of Animals Task and Finish Group

Classification: Unrestricted

Summary: To brief Kent Flood Risk Management Committee on progress by the Kent Resilience Forum Evacuation of Animals Task and Finish Group towards production of an Evacuation of Animals Emergency Plan

1. Background

1.1 At its meetings on 11th March and 21st July the Kent Flood Risk Management Committee heard evidence and discussed the impacts of last winter's severe weather upon livestock and domestic animals.

1.2 A key issue arising from this debate was how improved warning and informing of stock owners and managers in advance of flooding and other severe weather events could best be achieved. In response to the concerns of Kent Flood Risk Management Committee and other stakeholders the Kent Resilience Forum Evacuation and Shelter Working Group has established an Evacuation of Animals Task and Finish Group. It is envisaged that the Task and Finish Group will produce a draft Evacuation of Animals Emergency Plan by the end of December 2014.

2. Latest situation

2.1 The Task and Finish Group's inaugural meeting took place on the 15th October when Laurel Niven of Ashford Borough Council was elected as chair. Membership of the Group also includes KCC Trading Standards, National Farmers Union, KCC Gypsy and Traveller Unit, Gravesham Borough Council (Animal Welfare Group), Kent Wildlife Trust and RSPCA

2.2 At the initial meeting it was agreed that a similar plan produced by Somerset County Council following last winter's floods would be utilised as a template for a Kent document.

3. Next Steps

3.1 It is envisaged that a final draft of the Kent Resilience Forum Evacuation of Animals Emergency Plan will be completed by the end of December and that this will operate county-wide and inform all relevant warning and informing and response activity.

3.2 Members will continue to be regularly updated on the progress of this locally significant area of flood, and wider severe weather, response planning.

4. Recommendations

4.1 That Members:

- Note the establishment of the Kent Resilience Forum Evacuation of Animals Task and Finish Group and the timetable for emergency plan production; and
- Contribute any additional matters arising from debate by the Committee.

Tony Harwood, Senior Resilience Officer, Growth Environment and Transport
07850 907286 / tony.harwood@kent.gov.uk

Background documents: None

To: Kent Flood Risk Management Committee – 17th November 2014

From: Michael Harrison, Chairman of Kent Flood Risk Management Committee

Subject: Environment Agency and Met Office Alerts and Warnings and KCC flood response activity since last meeting.

Classification: Unrestricted

Summary: To update Kent Flood Risk Management Committee on Environment Agency and Met Office Alerts and Warnings and KCC flood response activity since the last meeting of the Committee on 21st July 2014. Members are asked to note this report.

1. Background

1.1 KCC Resilience and Emergencies Unit and Kent Resilience Team receive Environment Agency Flood Alerts and Warnings and Met Office Severe Weather Alerts and Warnings on a 24 hour 7 days a week basis. Impacts upon communities, infra-structure and the wider environment are assessed and a single or multi-agency response mobilised as required.

1.2 Some 70,000 properties in Kent are located within areas at risk of fluvial or tidal flooding. Where practically possible, these properties are offered a Flood Warning Service by the Environment Agency. However, other parts of the county are also potentially vulnerable to surface or ground water flooding. Early warning of flood risk to communities (including areas outside of fluvial and tidal floodplains) is delivered through Flood Guidance Statements, Severe Weather Warnings and Severe Weather Advisory Group.

2. Latest situation

2.1 July and August 2014 saw a number of dramatic summer storms, resulting in a number of surface water flooding and associated subsidence and sewage contamination incidents. This autumn has seen further intense short duration precipitation events, notably on 13th October.

2.2 Since 21st July 2014 30 Environment Agency flood alerts and no warnings have been issued¹. The figure for the same period in 2013 was 25 flood alerts and no warnings. In addition, 10 yellow Severe Weather Alerts and Warnings have been issued for heavy rain and the risk of surface water flooding². The figure for the same period in 2013 was 9 yellow Severe Weather Alerts and Warnings for heavy rain. The most significant recent intense precipitation events struck Kent on the 20th July, 8th, 9th and 10th August and 10th, 11th and 13th October 2014, resulting

¹ please see Appendix 1

² please see Appendix 2

in a number of surface water flooding, sewage contamination and subsidence incidents.

2.3 The Thames Barrier was closed on 3 occasions for test and operational purposes since the last meeting. The figure for the same period in 2013 was 2.

2.4 A total of 18 flooding related incidents were reported to the 24/7 KCC Emergency Planning Duty Officer since 21st July, encompassing surface water, subsidence and sewage pollution. The figure for the same period in 2013 was 10. A further alert was received in relation to a 'low risk' of an east Coast tidal surge during the late tides of Tuesday 21st and Wednesday 22nd October.

3. Next Steps

3.1 The autumn and winter period has historically seen an increased risk of flooding in Kent. Recent heavy rainfall, and long range weather forecasts suggest that weather conditions will remain unsettled, underlining the need for continued vigilance by Kent County Council, the wider local resilience community and residents.

3.2 Significantly, September 2015 will be the high point in the 19 year astronomical tide cycle. The greatest risk of tidal flooding is experienced between November and March, when winter storms are most likely. Key dates for such high tides are January 22nd and 23rd and February 20th and 21st 2015.

3.3 Members will continue to be regularly updated on flood alerts, severe weather warnings and operational response across Kent.

4. Recommendations

4.1 That Members:

- Note the level of alerts and operational response since the last meeting of the Kent Flood Risk Management Committee; and
- Contribute any additional matters arising from debate by the Committee.

Tony Harwood, Senior Resilience Officer, Growth Environment and Transport
07850 907286 / tony.harwood@kent.gov.uk

Background documents: None

Appendix 1: Environment Agency Flood Alerts received between 21st July and 7th November 2014

REGISTER OF ALERTS - 2014										Click here for instructions
Serial No:	Area	Day received	Date received	Time received	Date issued (if different)	Alert?	Warning?	Severe Warning?	Date All Clear	Staff Involved
461	Coast from Sandgate to Dungeness	Saturday	09/08/2014	14:08		X			14/08/2014	TH, GS
462	Coast from Fairlight to Dungeness including the Tidal Rother	Saturday	09/08/2014	14:02		X			14/08/2014	TH, GS
465	Coast from Pegwell Bay to Deal including the Tidal Stour	Wednesday	13/08/2014	09:43		X			13/08/2014	GS
467	Tidal Medway, Medway Estuary and Isle of Grain	Wednesday	13/08/2014	10:29		X			14/08/2014	TH
468	Isle of Sheppey and Coast from Kemsley to Seasalter	Wednesday	13/08/2014	10:36		X			14/08/2014	TH
469	Coast from Dartford to Allhallows	Wednesday	13/08/2014	10:43		X			14/08/2014	TH
470	Coast from Whitstable to Margate	Wednesday	13/08/2014	10:56		X			14/08/2014	TH
471	Coast from Pegwell Bay to Deal including the Tidal Stour	Thursday	14/08/2014	09:43		X			14/08/2014	TH
473	Shuttle and Cray Catchments	Thursday	14/08/2014	14:47		X			14/08/2014	TH
477	Great Stour from Charing Heath to A2070	Tuesday	26/08/2014	10:36		X			27/08/2014	FG
490	Isle of Sheppey and Coast from Kemsley to Seasalter	Tuesday	09/09/2014	16:32		X			11/09/2014	RW
492	Coast and tidal areas from Fairlight to Dungeness	Wednesday	10/09/2014	09:30		X			11/09/2014	RW
496	Coast from Fairlight to Dungeness including the Tidal Rother	Wednesday	08/10/2014	15:30		X			10/10/2014	TH, FG
497	Coast from Sandgate to Dungeness	Wednesday	08/10/2014	15:31		X			10/10/2014	TH, FG
498	River Rother Area	Friday	10/10/2014	21:01		X			10/10/2014	FG
521	Upper River Stour Area	Saturday	11/10/2014	09:15		X			14/10/2014	FG
524	Darent Catchment	Monday	13/10/2014	06:16		X			15/10/2014	TH
525	Rivers Eden & Eden Brook Area	Monday	13/10/2014	09:18		X			15/10/2014	TH
526	Upper River Medway Area	Monday	13/10/2014	09:44		X			14/10/2014	TH
527	River Bourne Area	Monday	13/10/2014	09:57		X			14/10/2014	TH
537	Rivers on the Isle of Sheppey	Monday	13/10/2014	15:15		X			14/10/2014	TH
552	Isle of Sheppey and Coast from Kemsley to Seasalter	Tuesday	21/10/2014	16:49		X			22/10/2014	TH
553	Tidal Medway, Medway Estuary and Isle of Grain	Tuesday	21/10/2014	16:49		X			22/10/2014	TH
554	Coast from Dartford to Allhallows	Tuesday	21/10/2014	16:49		X			22/10/2014	TH
555	Coast from Whitstable to Margate	Tuesday	21/10/2014	16:49		X			22/10/2014	TH
556	Coast from Pegwell Bay to Deal including the Tidal Stour	Tuesday	21/10/2014	16:49		X			22/10/2014	TH
564	Upper River Medway Area	Sunday	02/11/2014	20:28		X			04/11/2014	TH/SS
565	Upper River Stour Area	Monday	03/11/2014	13:34		X			04/11/2014	SS
566	Upper River Stour Area	Wednesday	04/11/2014	20:40		X				SS
567	Swalecliffe Brook	Wednesday	04/11/2014	20:52		X				SS

Appendix 2: Met Office Warnings and Alerts received between 21st July and 7th November 2014

REGISTER OF ALERTS - 2014					
Serial No:	Day received	Date received	Date issued (if different)	Staff Involved	Description
446	Friday	25/07/2014		TH	Yellow Warning of Rain for London & South East England: valid from 1200 Fri 25 Jul to 2100 Fri 25 Jul
447	Monday	28/07/2014		TH	Yellow Warning of Rain for London & South East England: valid from 0310 Mon 28 Jul to 2345 Mon 28 Jul
453	Wednesday	06/07/2014		TH	Yellow Alert of Rain for London & South East England: valid from 1200 Fri 08 Aug to 2100 Fri 08 Aug
472	Thursday	14/08/2014		TH	Yellow Warning of Rain for London & South East England: valid from 1210 Thu 14 Aug to 2100 Thu 14 Aug
502	Thursday	18/09/2014		TH	Yellow Warning of Rain for London & South East England: valid from 0015 Fri 19 Sep to 2345 Fri 19 Sep
538	Friday	10/10/2014		TH	Yellow Warning of Rain for London & South East England: valid from 2045 Fri 10 Oct to 0400 Sat 11 Oct
539	Saturday	11/10/2014		TH	Yellow Warning of Fog for London & South East England: valid from 0100 Sun 12 Oct to 1100 Sun 12 Oct
540	Sunday	12/10/2014		TH	Yellow Warning of Rain for London & South East England: valid from 0015 Mon 13 Oct to 2300 Mon 13 Oct
541	Monday	13/10/2014		TH	Yellow Warning of Rain for London & South East England: valid from 1115 Mon 13 Oct to 2345 Mon 13 Oct
545	Thursday	16/10/2014		TH	Yellow Warning of Rain for London & South East England: valid from 2015 Thu 16 Oct to 0400 Fri 17 Oct