

KENT FLOOD RISK MANAGEMENT COMMITTEE

Monday, 11th November, 2019

2.00 pm

Council Chamber, Sessions House, County Hall,
Maidstone





AGENDA

KENT FLOOD RISK MANAGEMENT COMMITTEE

Monday, 11th November, 2019, at 2.00 pm

Ask for: **Andrew Tait**

Council Chamber, Sessions House, County Hall, Maidstone Telephone **03000 416749**

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

Membership (7)

Conservative (6): Mr A R Hills (Chairman), Mr A H T Bowles, Mrs L Hurst,
Mr P W A Lake, Mr K Pugh and Mr H Rayner

Liberal Democrat (1) Mr I S Chittenden

UNRESTRICTED ITEMS

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

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1. Substitutes
2. Declarations of Members' Interest relating to items on today's agenda
3. Minutes of the meeting on 22 July 2019 (Pages 5 - 18)
4. Dates of future meetings
Monday, 9 March 2020
Monday, 6 July 2020

Monday, 23 November 2020

Monday, 8 March 2021

All meetings will start at 2.00 pm.

5. Water Sustainability and Farmer Co-ordination - Presentation by Tom Ormesher, NFU Environment and Land Use Adviser
6. Winter Preparedness - Presentation by Earl Bournier, Asset Manager, Drainage, Structures and Safety Barriers
7. Drainage and Wastewater Management Plans - Presentation by Max Tant (Pages 19 - 20)
8. Kent Emergency Planning - Presentation by Tony Harwood
9. Environment Agency and Met Office Alerts and Warnings and KCC severe weather response activity since the last meeting (Pages 21 - 26)
10. Other items which the Chairman decides are Urgent.

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)

Benjamin Watts
General Counsel
03000 416814

Friday, 1 November 2019

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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 Sessions House on Monday, 22 July 2019.

PRESENT: Mr A R Hills (Chairman), Mr D L Brazier (Substitute for Mr K Pugh), Mr I S Chittenden, Mrs L Hurst, Mr P W A Lake, Mr H Rayner, Mrs J Blanford (Ashford BC), Mr D Mortimer (Maidstone BC), Mr S McGregor (Substitute for Mr J Scholey (Sevenoaks DC)), Mr H Rogers (Tonbridge and Malling BC), Mrs C Mackonochie (Tonbridge Wells BC), Mrs G Brown (KALC), Mr C Mackonochie (KALC) and Mr L Rose (Kent Fire and Rescue Service)

IN ATTENDANCE: Mr M Tant (Flood and Water Manager), Mr T Harwood (Resilience and Emergency Planning Manager), Miss L Butfoy (Resilience and Emergency Planning Project Officer), Ms C Wissink (Coastal Communities Project Officer) and Mr A Tait (Democratic Services Officer)

UNRESTRICTED ITEMS

6. Minutes of the meeting on 11 March 2019
(Item 3)

RESOLVED that the Minutes of the meeting held on 11 March 2019 are correctly recorded and that they be signed by the Chairman.

7. Presentation by Samantha Howe (Environment Agency) on the latest coastal modelling for Kent
(Item 4)

(1) Samantha Howe (Environment Agency Coastal Risk Management) gave a presentation. The accompanying slides are contained within the electronic papers on the KCC website.

(2) Ms Howe began her presentation by saying that recently, 60,000 properties in Kent (residential and commercial) had been considered to be at risk of flooding from rivers and the sea. This figure had decreased according to some studies. An updated figure would be produced once the latest modelling had taken place.

(3) Ms Howe then said that computer models were used to help understanding of the areas at risk. The Flood Map for Planning showed the present-day risk of flooding to land from main rivers and the sea without taking into account the presence of flood defences. The map identified Flood Zone 3 areas where there was a 1% chance of fluvial flooding in any given year and a 0.5% chance of tidal flooding in any given year. Flood Zone 2 consisted of those areas which had a 0.1% chance of flooding in any given year.

(4) The Environment Agency was also updating the *Risk of Flooding from Rivers and the Sea* map. This data set had formerly been known as the “National Flood Risk Assessment” or NaFRA. Unlike the Flood Map for Planning, this map did take account of the presence and condition of flood defences and expressed the residual risk as “very low”, “low”, “medium” or “high risk.”

(5) Ms Howe said that there were three flood risk models that covered the Kent coast. These were the North Kent coast from Erith to Seasalter, the East Kent coast from Seasalter to Hythe and Romney Marsh (Hythe to Fairlight in East Sussex). The modelling method was consistent throughout these areas.

(6) Scenario modelling had also been undertaken for both defended and undefended circumstances in the present day as well as the future, taking climate change into account and including increases in offshore wind speeds.

(7) Ms Howe moved on to give an overview of the Kent Coastal models. She said that the detailed model for the East Kent Coast area had been completed in 2018. The area had not been completely covered before this date and the previous approach had been broad in scale. The North Kent Coast model had been completed in 2013 but was now being reviewed in the light of the 2013 tidal surge which had taken place just afterwards and a new extreme sea level data set which had come about in 2015. The Romney Marsh model was also being updated to allow breach modelling to be undertaken so that the implications of any such event could be fully understood. This review also enabled the inclusion of Broomfield Sands defences, as well as further climate change runs.

(8) Ms Howe then went on to use the East Kent model of 2018 as a case study. As this was such a large area, it had been split into two domains (Whitstable to Kingsdown and Kingsdown to Sandgate). She said that no single modelling software package was capable of collectively assessing the three components of wave transformation, wave overtopping and inundation. They were therefore assessed separately before the results were brought together. Wave and wind data was measured by using the Met Office’s *WaveWatch*. The tide gauge at Dover, which had been gathered over 80 years, was used to model sea levels. The Coastal Flood boundary dataset 2011 was used to inform still water levels at offshore boundaries. Once the water levels had been established, bathymetry data and modelling software was used to model the transformation of offshore wave conditions into those nearshore. The model had been run for 500 events to derive the nearshore conditions at the toe of each defence. The wave overtopping discharges for defended scenarios were calculated using a tool called EurOtop (European Overtopping Manual), which used a large database of results from physical modelling tests at 150 locations to derive a prediction of wave overtopping at various types of defences. The last stage was the creation of the inundation model which used a grid system representing the topography of the study area to represent the movement of flood water across the floodplain. This was applied for still water level flooding and wave overtopping volumes and enabled the EA to establish which areas were most at risk.

(9) Ms Howe then set out the range of model scenarios that had analysed. These ranged from an Annual Exceedance Probability (AEP) of 20% to 0.1% for present day defended and undefended scenarios. Climate Change scenarios of 0.5 and

0.1% had also been modelled for 2070 and 2115. All modelling had been undertaken in line with national guidance.

(10) Ms Howe described the outcomes from the East Coast Model. The EA was now able to identify the flood depths and levels, velocities, and the standard of each of the defences. A forecasting tool had also been developed for each of the three coastal models. This had dramatically changed the information that would be shared with the public and other agencies during flooding events.

(11) Ms Howe went on to give examples of work carried out. The biggest tidal surge since 1953 had occurred in December 2013. The data collected during this event had been used to calibrate the results of the model. She showed photographs and mapping for Sandwich and Margate taken during this period.

(12) Ms Howe said that as a result of the detailed modelling study in East Kent, 5,768 residential and 714 commercial properties had been removed from Flood Zone 3 whilst 432 residential and 126 commercial properties had been added to it. An *Area Benefitting from Defence* (ABD) had now been created, including 2064 residential and 243 commercial properties.

(13) The reason for the great changes in categorisation had occurred because the previous modelling had been incomplete and had used broad scale methods. The new model had used the latest techniques and data, resulting in a detailed and accurate understanding of the impact of nearshore water on the East Kent Coast. It used topographical data to identify urban and rural areas and the impact that a flooding event would have on them. Wave overtopping was now taken into account, which had not previously been the case. The smaller grid size had also contributed to the detailed results.

(14) Ms Howe showed the model results for Sandwich demonstrating that at 0.5% AEP all Sandwich would be under threat in an undefended scenario. The map also showed the parts of Sandwich under threat when all of the flood defences were in place. The model also showed the Sandwich 200-year ABD.

(15) The model was also able to produce animations. An example of this for the Sandwich area showed how the flood propagated for a 200-year (0.5% AEP) defended scenario over 3 tidal cycles.

(16) Ms Howe said that another model output was the *forecast* tool which allowed the forecast information to be entered prior to and during an event so that the points of greatest expected impact could be identified. This information would be shared with the public and would also enable evacuation to take place where this was appropriate.

(17) Ms Howe then identified the key considerations of the East Kent Coastal Model. She said that it was used purely for coastal flooding from tides and waves. A conservative approach was always taken to infiltration, by not taking it into account. This also applied in respect of shingle beaches, surface water drainage and the sewage network.

(18) Ms Howe briefly turned to the other two coastal models. The North Kent Coast Model had recently been updated to include data collected during the

December 2013 tidal surge and the most extreme dataset from 2015. The flood map and flood warning areas were due to be updated by the end of 2019, but it was not expected that these changes would make a major difference to the model. A forecasting tool was also being developed.

(19) The Romney Marsh modelling had been updated in 2017 but further work was being carried out to model defence breaches at 14 locations and to incorporate the Broomhill Sands defences. A forecasting tool was also being developed, in common with the other two areas.

(20) Ms Howe concluded her presentation by setting out the practical applications of coastal modelling. It enabled an understanding of the areas at risk of flooding for both the responders and the wider public. It assisted local authorities and developers in developing their Strategic Flood Risk Assessments and Flood Risk Assessments. It also informed asset management and scheme development and was invaluable in incident response work. The data was shared with multi-agency partners and was also freely available to the public.

(21) Ms Howe replied to a question from Mr Brazier by referring to the 2013 flooding. Coastal flooding had taken place from mid-December before the fluvial flooding on Christmas Eve. In East Kent there were 22 models. Two of these were coastal and the rest fluvial. The River Stour had been modelled up to Fordwich, where it converged with a fluvial model. The necessary information existed and needed to be put together. Coastal and Fluvial models had to be compiled in very different ways, but the local team had all the information available. In those areas prone to both types of flooding, both sets of data were made available for flood response and strategic planning purposes.

(22) Mr Rayner asked how tidal streams were calculated in terms of tides coming through the Channel and also how the differentials were calculated between neap high water and spring high water in the light of the prevailing weather and seasons. Ms Howe replied that bathymetry data was used in modelling offshore wave conditions to show the seabed as water was coming on shore. She offered to send further detailed information to him.

(23) Ms Howe replied to a question from Mrs Blanford by saying that the models for wave transformation had been run some 500 times. The wave component was taken from the national database. This enabled winds and storms to be taken fully into account.

(24) Mr Rose asked whether urban development was taken into account. The Kent Fire and Rescue Service had to pump water somewhere when responding to a flooding incident and housing development was having an impact in this regard. Ms Howe said that different roughness coefficients were applied to the model to represent both rural and urban areas. This indicated where the water was flowing. In terms of planning applications, developers would request model data so that they could complete a flood risk assessment to demonstrate that the proposed development area was stable and flood resilient.

(25) Mrs Hurst said that she had concerns at Birchington where the windfarms were shifting sands around. She believed this would have a dramatic effect on the models on that stretch of coast. Ms Howe replied that the data for the models was

taken at a particular point. A static beach profile would therefore be inputted into the model. The example given demonstrated the need for the models to be regularly reviewed.

(26) Ms Howe replied to a question from Mr Lake by saying that the climate change models projected forward for the next 100 years, taking account of the latest information. The estimates contained within the Met Office's UKCP18 document were being analysed by the Environment Agency at national level with a particular focus on its modelling implications.

(27) Ms Howe said that all data, including for climate change was freely available and that she would be able to provide it to any Member of the Committee on request.

(28) RESOLVED that Samantha Howe be thanked for her presentation.

8. Kent Environmental Strategy - Sustainable Communities: Presentation by Christine Wissink (KCC Adaptation Programme Manager)

(Item)

(1) Christine Wissink (KCC Adaptation Programme Manager) gave a presentation. The accompanying slides are contained within the electronic papers on the KCC website.

(2) Ms Wissink began her presentation by explaining that her role involved working on climate change, including flooding. This work encompassed preparation for the future as well as the present. The presentation would cover the work that was being undertaken in partnership with national and international organisations to make adaptations for climate change.

(3) Ms Wissink began with the Climate Change Risk Assessment 2017 (CCRA 2017). This had arisen out of the Climate Change Act 2008 which imposed upon the Government the duty to assess climate change impacts every five years and to put forward an adaptation programme in response. The most recent risk assessment has been produced in 2017 with the adaptation plan following in 2018. Kent produced a "drilled down" version setting out the implications for the county.

(4) JBA had been appointed in September 2018 to develop the Kent Climate Risk and Impact Assessment (CCRiA). They had undertaken desktop research and discussions with stakeholders (including a workshop), resulting in a draft presented to KCC in May 2019. This very detailed and thorough document was then edited to put it into a format that was sufficiently easy for lay people to read and comprehend.

(5) Ms Wissink then said that the CCRiA was based on the CCRA 2017. It was divided into three parts, the first of these setting out the context, methodology and giving a summary. The second part consisted of in the third part. Most of the material worked on had been taken from UKCP09 and UKCP18.

(6) Ms Wissink turned to the main findings within the CCRiA. There were six priority risks, four of which were already happening and two which would arise in the future. An additional risk (new and emerging pests and diseases an invasive non-native species) had been identified, although its potential impacts were not yet fully

understood. Four of the priority risks were significant in terms of the work of the Kent Flood Risk Management Committee. These were identified as :-

- (a) Flooding and coastal change risks to communities, businesses and infrastructure;
- (b) Risk of storm events/intense rainfall impacting productivity and transport infrastructure. This was particularly significant for the Fruit industry;
- (c) Overheating, flooding, drought and coastal change risks for Kent's natural capital; and
- (d) Soil erosion and slope destabilisation as a result of flooding and drought impacting infrastructure, the natural environment and productivity. This was an additional risk for Kent beyond the national risks set out in CCRA 2017 and was particularly significant for the Rail industry.

(7) Ms Wissink said that the next steps for the CCRiA would be completion of the editing and refining work by the end of July followed by stakeholder consultation in August 2019 and publication in the Autumn. Once this had been done, there would be follow-on work such as the downscaling of the UKCP18 climate projections to extract the Kent data and make it useable for non-experts; the development of the Kent Adaptation Programme and Plan; and the development of local support, either at District Council level or by local sector.

(8) Ms Wissink moved on to discuss the Social Care Assessments that had been carried out. One of these had been on Flood Disadvantage. This looked at people who were more vulnerable to flooding due to their age, health or income levels. Data facts provided by the Rowntree Foundation had been used to identify where disadvantage levels were at their highest. The highest disadvantage levels for fluvial and coastal flooding were in coastal regions, particularly in Swale, Hythe to New Romney and Thanet. There was a higher element of risk across the whole of Kent from surface water flooding. The mapping enabled identification of the areas in Kent which needed to be targeted. In Sheerness, for example, there were two communities next to each other. These had the same level of flood exposure risk. One of these was an elderly population that was cash poor with high levels of disability. The other was a younger population with single parent families and high levels of unemployment. This information would shortly be published for use by Social Care Teams and Emergency Planning, amongst others.

(9) Mapping of Social Care assets, gathered through the SHAPE Atlas system, had also been overlain onto flood risk maps in order to help identify which of these were at greatest risk. This had also helped to identify those properties which were not at risk in themselves, but where their access and egress would be affected. This would soon be published, and the SHAPE Atlas system was publicly available on-line.

(10) Ms Wissink's next topic was the Severe Weather Impact Monitoring System (SWIMS). This provided public sector organisations with the opportunity to document how they were being affected by severe weather in order to build a data base which could be used for response and recoupment purposes. This system had been running since 2012 but was now in need of updating. This was because an assessment had been undertaken in 2018 as to how the system was being used. It had found that some £18m of accredited data had been inputted into the system but was not of the quality that had been expected.

(11) Ms Wissink said that one of the improvements that would be made was that flooding would be specifically identified as an event, rather than coming under its current event heading of “storms and gales.”

(12) Ms Wissink continued that it had become clear that the SWIMS system was not being used for droughts as the 7-year period had identified only 1 event at no data input cost. Similarly, heatwaves had only been identified on four occasions at a cost of £3,300. The number of organisations inputting had remained consistent and currently stood at 38. However, Only a third of them were inputting good quality data. Another third of them were entering data of variable quality and the final third were hardly using the system at all.

(13) Ms Wissink then said that the analysis had established that there were a lot of changers of users; that the software was out of date and not user-friendly; and it was limited in terms of what it permitted to be entered. European money had been found to develop a new system which was due to go live by the end of 2019 and to be potentially rolled out nationally as well.

(14) Ms Wissink turned to the Adaptation Catalyst. This was work undertaken with *Deltares* to develop software which could enable identification of the best time to carry out adaptations in terms of risk management and cost/benefit ratios. The user could input the climate change risk and the measure proposed to counteract it (including the time it would take to install and the length of time it was expected to last). The software would then identify whether it was a viable option and would also allow the user to identify alternatives. The software was expected to be ready for use within the next few months having been tested for flooding, subsidence and heat.

(15) In response to a question from Mr Rogers, Mr Harwood confirmed that the Shape Atlas was being used as a tool by the Emergency Planners to not only identify flood risk but also its timing and potential risks to responders.

(16) Mr Rayner expressed surprise that the Kent and Medway Surface Water Flood Disadvantage Map (Figure 9.4 in the report) identified Wrotham as a high-risk area even though its location was on high ground and the Local Authorities seemed to be unaware of this designation. Mr Tant explained that the data was very aggregated and detailed. Flood risk was only one of the factors taken into account. There was also a variety of deprivation scores and other social statistics. It was likely that that there was a medium risk of surface water flooding but high risks in terms of deprivation and resilience.

(17) Mr Brazier said that it was essential that the data was up-to-date and valid. He believed that this was not the case in respect of surface water. He asked whether the resulting conclusions were valid. Ms Wissink replied that much of the data was indeed out-of-date. For example, the disadvantage data had been compiled in 2011. The conclusions were still useful when seen as a general indicator of trends. Mr Tant added that the surface water data was taken from the National Surface Water Flood Map. He would treat the results with caution if he was seeking to identify individual properties but would be reasonably confident when identifying areas within the county.

(18) Mrs Brown suggested that a series of seminars could be held with Parish Councils at a later stage so that they could understand the full implications of the data and maps that were being reported. The Chairman agreed with Mrs Brown that such an exercise would have value. This was an idea that would be explored.

(19) Ms Wissink asked for an indication of what aspects of her work Parish Councils would find most interesting. Mr Rayner said that he believed that Parish Councils would be interested to know why they appeared on a map so that they could incorporate measures into their own Local Plan arrangements for dealing with an emergency. In straight forward terms, they would be able to translate the information provided into a programme that enabled their communities to help themselves.

(20) RESOLVED that Christine Wissink be thanked for her presentation and that consideration be given to arranging presentations for Parish Councils and other local interested groups.

9. KCC Flood Response Plan Update

(Item 6)

(1) Mr Harwood gave an introductory presentation. The accompanying slides are contained within the electronic papers on the KCC website.

(2) Mr Harwood said that the Flood Response Plan was a single agency document which set out KCC's roles and responsibilities and identified where there was an interface with its partners in terms of planning and response. It also provided geographical data and briefings on Kent's most flood vulnerable areas. The revisions proposed aimed to address climate change impacts and emerging better data. Resources needed to be used in the most appropriate and ergonomic way, and the document sought to identify the multi-faceted nature of flood vulnerability.

(3) Mr Harwood underlined that KCC was not undertaking planning in a vacuum or in isolation. Each of the County's Boroughs and Districts produced a local multi-agency Flood Plan. These were also in the process of being updated. The Kent Resilience Forum had established a Task and Finish Group so that all the Boroughs and Districts could work together on their Plans. KCC and the KFRS were also involved, ensuring that their single-agency plans dovetailed with those of their other partners.

(4) Mr Harwood concluded his introductory presentation by saying that the document would be signed off in October.

(5) Mrs Mackonochie referred to the section on sewerage flood risk and asked whether the water companies had been brought into the process. Mr Harwood replied that the Kent Resilience Forum had established a Kent Utilities Group which included the water companies. This group had been considering this particular issue. He then gave a commitment that he would revisit this particular section of the KCC plan in order to integrate and assimilate the water utilities into it.

(6) Mr Harwood agreed that any comments and contributions that Members might wish to make should be emailed to him. He added that the Plan was constantly evolving and that it was not essential to do so before 23 September.

(7) Mr Chittenden referred to a recent burst watermain incident in Bearsted and praised South East Water's response to it. Problems had, however, been experienced when Southern Water had been faced with similar problems and this might have been caused by the lack of clarity over who had responsibility when surface water and sewerage events were taking place in the same location. This had often resulted in KCC Highways completing its share of the work whilst Southern Water did not perform its tasks until a much later date.

(8) The Chairman noted that the document referred to District responsibilities and commented that he had been shocked by the increasing lack of specialist staff resources available to them. He was concerned that Kent's Districts might not have the capacity to undertake all the work that was needed.

(9) Mr Harwood said that the water companies were now classified as Category 2 Responders under the Civil Contingencies Act. This gave them far greater levels of responsibility and a "duty to co-operate" which they were fulfilling in a greatly improved manner.

(10) Mr Harwood then said that the Plan was, in part a historic document which identified exercises that had taken place over recent years following the flooding events of 2013/14. Exercising of different types of emergency had latterly taken precedence, such as anti-terrorism and EU withdrawal. He agreed that it continued to be essential to test KCC's planning and its staff for flooding scenarios. This needed to take staff and staffing changes fully into account. Significantly, Exercise Persephone would validate the KCC plan on 13 September.

(11) RESOLVED that the content of the draft updates to the KCC Flood Response Plan be noted, together with the assurance given that any comments made by Members after the meeting will be taken fully into account.

10. Flood Risk Management Policies

(Item 7)

(1) Mr Tant introduced the report by saying that KCC had been appointed Lead Local Flood Authority under the Flood and Water Management Act 2010, which gave KCC the strategic overview of local flooding caused by surface water, groundwater and ordinary watercourses. This was accompanied by a number of duties, one of which was to publish a Flood Risk Management Strategy. The revised Strategy had been published in 2017.

(2) KCC had a number of powers and duties for the management of local flood risk. These included the duty to act as a statutory consultee for surface water in planning, the power to regulate works in ordinary watercourses, and the duty to undertake investigations into flooding. KCC was now bringing forward new policies which set out how these powers and duties were to be undertaken.

(3) Mr Tant then discussed the proposed revisions to the Drainage and Planning Policy. He said that it had first been adopted in 2015. Since then it had become clear that there were issues that needed to be dealt with. The Policy Statement had therefore been refined and clarified in order to bolster the work that KCC carried out

in partnership with developers and other local authorities. The revisions also ensured consistency with changes to the NPPF and DEFRA's 25-year Environment Plan.

(4) Mr Tant then turned to the Land Drainage Policy. He said that KCC's powers were set out in the Land Drainage Act 1991. One of these was the power to provide consent for any works within an ordinary watercourse outside IDB jurisdiction. In particular, this policy set out KCC's position regarding culverts. Generally speaking, KCC was opposed to culverts due to the increase in flood risk and damage to wildlife habitats. KCC accepted culverts where they were used to unlock land for development. One of Kent's greatest flood problems was flooding that arose due to the culverting of ordinary watercourses. The draft Policy set out KCC's approach to exercising these powers and gave applicants guidance who sought land drainage consent.

(5) Mr Tant continued by saying that the third Policy was the Section 19 Investigation Policy. The duty to investigate flood events in the County was conferred on KCC under section 19 of the Flood and Water Management Act 2010, which left it up to each Lead Local Flood Authority to decide how it would undertake this duty.

(6) Mr Tant said that up to this point, the investigation policy had been contained within the Flood Risk Management Strategy and had specified that an investigation would be carried out whenever flooding had caused damage to property. This approach was being revised because a formal investigation required the Lead Flood Authority to issue a report about the flood, which was a time-consuming process that slowed down the dissemination of information unnecessarily in small events. The draft Policy therefore proposed to increase the threshold for a published report so that 5 properties in a local geographical area would need to be flooded internally before a formal report was written. KCC would still investigate flood events that did not reach this threshold, but it meant that a formal report was not always required.

(7) Mr Tant concluded his introduction by saying that consultation on the three policies would take place during the summer months before the final versions were adopted by KCC in late Autumn.

(8) Mr Tant replied to a question from Mr Brazier by saying that Section 19 of the Flood and Water Management Act was very brief and un-prescriptive on how investigations were to be carried out. It simply stated that lead local flood authorities had a duty, to investigate significant flooding to the extent it felt necessary. It was left to the Lead Local Flood Authority to decide on the definition of "significant."

(9) Mr Brazier said that he had read a number of surface water management plans and found that they varied considerably. Some were very detailed whereas others contained information that was very dated with a flood risk still being identified where significant measures had already been taken to deal with it. Mr Tant replied that the surface water management plans were separate from S19 investigations and varied in age. The first had been completed in 2012 and the last in 2017. They were currently under review and would be updated on the website as necessary.

(10) Mr Tant replied to a question from Mr Rogers by saying that consideration had been given to merging the revised Drainage Policy and the Land Drainage Policy. They did, however, address different duties. One of them referenced that KCC was a

statutory consultee for Planning whereas the other referred to its role as a Land Drainage Authority. These powers came from different Instruments and therefore needed to be treated separately (albeit linked to one another). Furthermore, the Land Drainage Act gave KCC enforcement powers which would not appropriately be set out in the Drainage Policy which was giving advice on planning matters to developers and other authorities.

(11) Mr Tant then said that that KCC could not decide how Sustainable Drainage would be undertaken. The section on Sustainable Drainage within the Drainage and Planning Statement went as far as KCC was legally able to go and further than many Lead Local Flood Authorities. He then confirmed that the Internal Drainage Boards would be consulted on the Land Drainage Policy.

(12) Mrs Mackonochie said that there was a connection between the intention to cut back on investigations when only single properties were affected by flooding and outside consultations advising on different solutions to flooding. If a single property were to flood in for example one of the major developments in Zones 2 and 3, the landowner might have to employ consultants to identify the cause. Mr Tant replied that KCC would not cease to investigate floods as a result of the Investigation Policy. It was simply the requirement to publish a formal report on every occasion that would stop. It was often the case that official flood investigations were not helpful as they were onerous, required consultation and delayed the authority from explaining the full reason for the flooding event. Section 19 Investigations rarely went beyond a straightforward explanation of the reasons for the flooding occurrence. They did not help to unlock money for remedial action. Often, any work that needed to be undertaken had already begun well before the report was published.

(13) Mrs Mackonochie then asked whether the text could be strengthened to stress that authorities should understand the implications of permitting single storey non-bedroom extensions in areas prone to flooding. Mr Tant replied that the EA was routinely consulted on any proposed development in a flood plain, which should enable appropriate advice to be given in such scenarios.

(14) Mrs Blanford said that every development in Ashford had SuDS systems. It was the responsibility of the developers to ensure that they were built properly and regularly inspected. She asked who was responsible for inspection. Mr Tant replied that no authority had the specific responsibility for inspecting sustainable drainage, although the planning authority had the duty to ensure that the permitted development had been carried out as approved. The revised policy also required the developers to complete a form to confirm that they had completed the works in the manner set out in the Permission.

(15) Mrs Brown said that there was advice which the Environment Agency had made available to the District Authorities. She added that in Yalding there had recently been an application for a single storey bedroom extension in Flood Zone 3. The District Planners had omitted to consult the EA, who had nevertheless objected following representations made to them by the Parish Council. She said that it was essential that all local authorities understood that the Environment Agency had to be consulted on even the most apparently minor applications in a flood plain rather than rely on the generic published advice.

- (16) Mrs Brown then asked whether a brief written explanation could be given as to exactly who was responsible for each type of flooding event.
- (17) The Chairman said that he was keen to see the production of a simple Kent Flood Management map, giving contact details as appropriate.
- (18) RESOLVED that the report and the draft Drainage and Planning Policy, the draft Land Drainage Policy and the draft Section 19 Investigation Policy be noted together with the comments made by Members.

11. Environment Agency and Met Office Alerts and Warnings and KCC severe weather response activity since the last meeting
(Item 8)

(1) Mr Harwood said that the month of June 2019 had seen dramatic rainfall leading to surface and groundwater flooding in parts of North West Kent. Eynsford had received 112.3 mm of rain and Ham Hill 111.5 mm within a single 24-hour period. This contrasted with the long-term average rainfall during June of 53 mm for the entire month. Some 170 residential and commercial premises had been affected. The water had flowed through and damaged these properties so quickly that it had often disappeared by the time emergency responders had arrived.

(2) Mr Harwood then said that sudden, high intensity events such as these were exactly what experts on climate change impacts had been predicting, with a warmer atmosphere leading to more water vapour in the air and an increasing likelihood of storms. This meant that every part of the county was potentially at risk because, no matter where the rain fell, there would always be built and topographical features which exacerbated flood risk to associated vulnerable properties.

(3) Mr Harwood said that the Severe Weather Advisory Group teleconference that had taken place in response to the June surface water flooding event had initially been chaired by the Environment Agency because the response was to surface and groundwater flooding. KCC had taken the chair for the subsequent recovery phase.

(4) The worst affected premises had been St Katherine's School and Nursery in Snodland, where the damage had been so significant that the children had needed to be educated at the local secondary school. It was hoped that they would be able to return to their own school when the new term began in September.

(5) Mr Harwood concluded his introduction by saying that elevated tides with high risk of coastal flooding had been forecast between 28 September and 3 October and between 26 and 31 October, the key risks would arise if storms or high winds accompanied these elevated high tides.

(6) Mr Chittenden noted that groundwater levels and reservoirs were, for the most part within normal ranges even though many new houses were being built in Kent. He asked whether there were any projections for water capacity during the next 5 to 10 years.

(7) Mr Tant replied to Mr Chittenden by saying that he was not aware of any significant constraint within this time period. Water companies had a duty to provide water and had to produce a new 25 year plan every 5 years. The latest version had been submitted earlier in the year and was due to commence in April 2020. This was under review by Ofwat, whose work included assessment for extreme scenarios, including those potentially caused by climate change.

(8) Mr Tant added that KCC promoted water-efficient development. An example of this was the promotion of “grey water” rather than drinking quality water for appropriate functions such as gardening and toilet flushing.

(9) Mr Harwood said that since the repeal of the Code for Sustainable Homes in 2010, local water conservation policies needed to be delivered through the Local Planning process, where an evidential underpinning was needed to demonstrate the reasons that, for example, building regulations were not sufficient in the local area. He added that another example was that in areas of significant new housing development, Local Plans should make provision for natural water retention by ensuring that there were sufficient semi-natural ponds to hold surface water and facilitate natural flood water attenuation.

(10) RESOLVED that the current water resources situation and warnings received since the last meeting of the Committee be noted.

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To: Kent Flood Risk Management Committee

From: Max Tant – Flood and Water Manager

Subject: Drainage and Wastewater Management Plans

Classification: Unrestricted

Summary: Sewerage undertakers are preparing Drainage and Wastewater Management Plans (DWMPs) to provide long-term plans for drainage and wastewater infrastructure.

Recommendation: Members are invited to note and comment on the report and accompanying presentation.

1. Sewerage undertakers are responsible for providing foul and surface water drainage disposal and for managing the assets that provide this service. Water companies have traditionally planned for investment in these assets through their five-yearly business planning process, regulated by OfWat and the Environment Agency. Following the 21st Century Drainage project, which looked at performance issues of the sewerage undertakers, it was recommended that the planning for drainage and wastewater planning be undertaken on a longer-term and more nationally consistent basis, through Drainage and Wastewater Management Plans (DWMPs).
2. A DWMP steering group was established to prepare the guidance for sewerage undertakers to use to write their plans. The steering group included all the sewerage undertakers in the UK as well as other interest groups, including the Environment Agency, DEFRA, the National Infrastructure Commission, Consumer Council for Water, ADEPT, Blueprint for Water (an association of environmental NGOs).
3. The DWMP framework was published in May 2019. The framework can be found here: <https://www.water.org.uk/policy-topics/managing-sewage-and-drainage/drainage-and-wastewater-management-plans/>
4. The framework establishes a technical process to review the provision of drainage and wastewater and identify pressures that need to be planned for, these include pollution, capacity, flooding and growth. Any catchment that meets the criteria on any of these factors is investigated in more detail. The framework is intended to be collaborative, as many of the issues that are included are not wholly within the remit of sewerage undertakers.
5. Following the publication of the DWMP framework, the steering group recognised that the technical guidance does not provide a useful entry point to the DWMP process for organisations outside the sewerage industry. To address this the steering group has prepared an introductory guide to DWMPs, which can also be found here: <https://www.water.org.uk/policy-topics/managing-sewage-and-drainage/drainage-and-wastewater-management-plans/>.
6. Max Tant will provide a presentation on DWMPs to the committee.

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To: Kent Flood Risk Management Committee – 11th November 2019

From: Katie Stewart, Director of Environment, Planning and Enforcement

Subject: Environment Agency and Met Office Alerts and Warnings and KCC severe weather response activity.

Classification: Unrestricted

Summary: To update Kent Flood Risk Management Committee on the current water situation, Environment Agency and Met Office Warnings, and flood response activity since the last meeting of the Committee on 22nd July 2019.

1. Background

- 1.1 This report is the latest in the regular updates to the Committee addressing the current water situation and severe weather and flood response activity during the period from July through to October 2019.
- 1.2 The KCC Resilience and Emergency Planning Service Duty Emergency Planning Officer (DEPO) and Contact Point receive Environment Agency (EA) and Met Office alerts and warnings regarding severe weather on a 24/7 basis. Site specific severe weather impacts are notified to the DEPO by the emergency services and other resilience partners, with reports from the public received by Contact Point and passed on to the DEPO and/or Kent Highways. DEPO further initiates multi-agency reporting using the innovative Severe Weather Impacts System (SWIMS) to capture resources and costs arising from severe weather incidents.
- 1.3 Some 85,500 residential and commercial addresses across Kent are located within areas identified as at risk from fluvial (river) or tidal flooding. Where possible, these properties are offered a Flood Warning Service by the EA. Early warning of flood risk to communities (including areas outside floodplains) is delivered through Flood Guidance Statements, Severe Weather Warnings and mobilisation of the Kent Resilience Forum (KRF) Severe Weather Advisory Group (SWAG).

2. Latest situation

- 2.1 Whilst it has been a drier summer than the previous year, the autumn has so far been wetter. Kent experienced 89% of long-term average rainfall in July, 66% in August, 86% in September and 117% in October. The latest monitoring data available (source: EA 21st October 2019) indicates that river flows within the County are all within the 'below normal' to 'notably low' ranges. However, local

rivers responded to rainfall in late September and October, with more significant fluvial responses observed across surface water sensitive urban catchments.

- 2.2 Groundwater aquifers across Kent are currently within 'normal' to 'below normal' ranges. Marginal groundwater recovery was observed in late September and early October. However, the Environment Agency states that to sustain local groundwater recovery high intensity rainfall will be needed over coming weeks, consequently it is too early to identify whether this autumn and winter's recharge season has begun.
- 2.3 All reservoirs remain within their normal ranges. However, Bough Beech reservoir is reported by the EA to currently be below its long-term average level.
- 2.4 As a result, particularly due to high astronomical tides, there has been a considerable increase in the number of flood alerts during this period when compared with last year. 42 flood alerts and 5 flood warnings were issued by the EA since the last meeting in July (5 fluvial and 42 coastal)¹. A range of interventions were triggered by the EA, County Council and partners in response to these alerts and warning, ranging from closing flood gates through to public warning and informing, mobilisation and deployment of additional staff resources. This contrasts with 4 flood alerts (3 fluvial and 1 coastal) in the corresponding period last year.
- 2.5 This period also saw a considerable increase in the number of severe weather warnings issued. Since July, 23 Met Office severe weather warnings were released (4 warnings for wind, 15 for rain and 4 for thunderstorms)². Impacts arising from this increased storminess were particularly significant in terms of Kent Highways and District colleagues dealing with surface water on the highway and fallen trees and other windblown debris. The total for the same period in 2018 was 10 (5 warnings for wind, 1 amber warning for rain and 4 yellow warnings for thunderstorms).
- 2.6 The Thames Barrier was closed on 3 occasions since the last meeting (2 for test and 1 for operational purposes)³. The figure for the corresponding period last year was 3 (all for test purposes)³.
- 2.7 EA chaired KRF SWAG teleconferences took place between 27th and 29th September ahead of forecast high astronomical tides, which were combined with a surge influence and a succession of low-pressure systems, bringing precipitation and thunderstorms.
- 2.8 The EA's Area Incident Room operated from 29th September through to Sunday 29th September, with a total of 185 personnel active within the response. The KCC DEPO and County Emergency Centre also supported these EA operations. Defences at Jury's Gap were fortified with shingle filled geo-bags

¹ Please see appendix 1

² Please see appendix 2

³ Please see appendix 3

and shingle replenishment. Local beaches are now being restored and flood defence assets assessed.

- 2.9 EA Community Information Officers were deployed during this high astronomical tide period to Front Brents at Faversham, Jury's Gap near Rye, St Margaret's at Cliffe, Dover, Littlestone, Dymchurch, Ramsgate, Halling, Strood, Upnor, Stoke, Gravesend, Warden Bay, Shellness, Strood, Rochester, Upnor, Broomhill, Faversham and Conyer during this period. At least three properties were confirmed as having been inundated during this period, two in Strood and one in Gravesend.
- 2.10 As a component of the ongoing recovery process to these events the EA is now contacting residents in Medway, Rye and Faversham, as well as affected local authorities, to gather further data on flood impacts.

3. Looking forward

- 3.1 According to Met Office long-term forecasts confidence is relatively high for a warmer and wetter than average winter, however this does not rule out short cold spells where snow and freezing conditions are possible.
- 3.2 The EA continuously runs surge forecasts, informed by astronomical tide calculations. If a risk of coastal flooding is forecast this information is communicated to partners. Elevated tides with a corresponding higher risk of coastal flooding, if in combination with high winds, are forecast between 25th and 28th November 2019.
- 3.3 KRF is facilitating a Winter Preparedness Workshop on 26th November, which will specifically address flood risk and response amongst other winter hazards. The event will be attended by KCC officers as well as partners including the Met Office, Environment Agency, Kent Fire & Rescue Service, Utilities and NHS.
- 3.4 The national East Coast Flood Group will be running an east coast surge exercise in 2020. Planning is at an early stage, but Kent is included in the scenario.
- 3.5 Kent Flood Risk Management Committee will continue to receive regular updates on water resources, flood alerts, weather warnings and response.

4. Recommendations

- 4.1 That Members:
- Note the warnings received since the last meeting of the Committee; and
 - Contribute to planning and response policy and practice through oversight and debate.

Tony Harwood, Resilience and Emergency Planning Manager, Growth Environment and Transport, tel. 03000 413 386, e-mail tony.harwood@kent.gov.uk

Appendix 1: EA Flood Alerts and Warnings issued since 22nd July 2019

Date issued	Flood Zone	Status
02/09/2019	Coast from St. Margaret's at Cliffe to Sandgate	Alert
02/09/2019	Coast from Ramsgate to Kingsdown	Alert
02/09/2019	Isle of Sheppey and Coast from Kemsley to Seasalter	Alert
02/09/2019	Coast from Whitstable to Margate	Alert
02/09/2019	Tidal Medway, Medway Estuary and Isle of Grain	Alert
02/09/2019	Coast from Dartford to Allhallows	Alert
23/09/2019	River Cray to St Mary's Cray	Alert
28/09/2019	Coast from St. Margaret's at Cliffe to Sandgate	Alert
28/09/2019	Coast from Ramsgate to Kingsdown	Alert
28/09/2019	Coast from Sandgate to Dungeness	Alert
28/09/2019	Coast from Fairlight to Dungeness	Alert
29/09/2019	Tidal Medway, Medway Estuary and Isle of Grain	Alert
29/09/2019	Coast from Dartford to Allhallows	Alert
29/09/2019	Isle of Sheppey and coast from Kemsley to Seasalter	Alert
29/09/2019	Coast from Whitstable to Margate	Alert
29/09/2019	Coast from St Margaret's at Cliffe to Sandgate	Alert
29/09/2019	Coast from Ramsgate to Kingsdown	Alert
29/09/2019	Coast from Sandgate to Dungeness	Alert
29/09/2019	Coast from Fairlight to Dungeness	Alert
29/09/2019	Coast from Warden Bay to Hamlet of Shellness	Alert
29/09/2019	Coast from Folkestone to St Mary's Bay	Warning
29/09/2019	Coast from Littlestone Golf Course to Dungeness	Warning
29/09/2019	Coast from Dungeness to Rye	Warning
29/09/2019	Properties seaward side of tidal defences from Greenhithe to Gravesend	Warning
30/09/2019	Coast from St Margaret's at Cliffe to Sandgate	Alert
30/09/2019	Coast from Ramsgate to Kingsdown	Alert
30/09/2019	Tidal Medway, Medway Estuary and Isle of Grain	Alert
30/09/2019	Coast from Sandgate to Dungeness	Alert
30/09/2019	Coast from Fairlight to Dungeness and Tidal Rother	Alert
30/09/2019	Shuttle and Cray from St Mary's Cray to Crayford	Alert
30/09/2019	Tidal River Medway and Medway Estuary	Alert
30/09/2019	Coast from Warden Bay to Hamlet of Shellness	Alert
30/09/2019	Coast from Dover to Folkestone	Warning
30/10/2019	Coast from Sandgate to Dungeness	Alert
30/20/2019	Rivers Shuttle and Cray	Alert
01/10/2019	Coast from Whitstable from Margate	Alert
01/10/2019	Coast from Dartford to Allhallows	Alert
01/10/2019	Tidal Medway, Medway Estuary and Isle of Grain	Alert
01/10/2019	Isle of Sheppey and Coast from Kemsley to Seasalter	Alert
01/10/2019	Coast from Dartford to All Hallows	Alert
18/10/2019	River Rother and Tributaries from Turks Bridge to the Royal Military Canal	Alert
18/10/2019	Upper River Medway	Alert
27/10/2019	Coast from St. Margaret's at Cliffe to Sandgate	Alert
27/10/2019	Coast from Whitstable to Margate	Alert
27/10/2019	Isle of Sheppey and coast from Kemsley to Seasalter	Alert
27/10/2019	Coast from Dartford to All Hallows	Alert
27/10/2019	Tidal Medway, Medway Estuary and Isle of Grain	Alert

Appendix 2:

22 Met Office Warnings issued (including updates)

- 21 Yellow
- 1 Amber
- 8 Low Impact
- 14 Medium Impact

Met Office Warnings – July to October 2019			
Weather Element	Number of Warnings	No of Different Events	Dates of Events
Thunderstorm	4	3	23-24 Jul, 25-26 Jul, 12 Aug
Rain	15	5	27-28 Jul, 23-24 Sep, 1 Oct, 6 Oct, 14 Oct
Wind	4	2	9-10 Aug, 2 November

Appendix 3: Environment Agency Thames Barrier closures since 22nd July 2019

Thames Barrier closures	Date	Status
Thames Barrier closed	19/08/2019	Test
Thames Barrier closed	30/09/2019	Operational
Thames Barrier closed	17/10/2019	Test

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