

To: Kent Flood Risk Management Committee – 24th November 2021

From: Rebecca Spore, Director of Infrastructure, Strategic and Corporate Services

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, weather statistics, Environment Agency and Met Office Warnings, and flood response activity since the last meeting of the Committee on 8th July 2021.

1. Background

- 1.1 This report is the latest of the regular updates to the Committee addressing the current water situation and severe weather and flood response activity.
- 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. Any 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 county council's 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 (coastal) flooding. Where possible, flood vulnerable properties are offered a Flood Warning Service by the EA. Early warning of flood risk to communities (including areas outside of floodplains) is delivered through Flood Guidance Statements, Severe Weather Warnings and mobilisation of the Kent Resilience Forum (KRF) Severe Weather Advisory Group (SWAG).

2. Kent water situation and weather statistics

- 2.1 Kent experienced significant rainfall totals in early summer 2021, with 192% of the long-term monthly average falling in June and 139% in July. Both months also saw mean temperatures which were slightly above average at +1.4 C in June and +0.4 C in July.

- 2.2 In contrast, August and September were drier than the average for these months in Kent, experiencing just 87% and 49% respectively of long-term monthly average rainfall. Mean temperatures measured against the 1981-2010 long-term average were -0.9 C for August and +1.8 C for September. October recorded 137% of long-term average rainfall and mean temperatures +0.3 C above average.
- 2.3 The latest data available from the Environment Agency indicates that the significant soil moisture deficits recorded in September, that were negatively impacting some agricultural sectors, were replenished by October's above average rainfall. Indeed, there was sufficient rainfall in October to generate soil moisture recharge earlier than in an average year, especially in west Kent.
- 2.4 Groundwater levels reacted to the wet October such that in the Kent's western catchments, where monthly rainfall totals were highest, groundwater levels began to increase. Meanwhile in the east, where rainfall totals were lower, levels have continued to decline, but at a much slower rate than during August and September.
- 2.4 Reservoir levels were relatively stable at Bough Beech (54%) and Bewl (74%), and were normal and above normal, respectively, for the time of year.
- 2.5 43 flood alerts and one flood warning were issued by the EA since the last meeting of the Committee (26 fluvial and 18 coastal)¹. This contrasts with 47 flood alerts and five warnings (nine fluvial and 43 coastal) in the corresponding period in 2020.
- 2.6 The Met Office issued 41 weather warnings covering Kent between June and October 2021 (11 yellow warnings and one amber warning for thunderstorms, 15 yellow warnings and one amber for rain, three yellow warnings for rain, two yellow warnings for wind and rain and one yellow warning for fog)². This contrasts with 24 Met Office weather warnings (16 yellow warnings for rain, four yellow warnings for thunderstorms and four for rain) in the corresponding period last year.
- 2.7 The Thames Barrier was closed on four occasions since the last meeting of the Committee in July (three for flood defence and one for test purposes)³. The figure for the corresponding period last year was three (one for flood defence and two for test purposes).
- 2.8 Heavy and often localised rainfall experienced across the South East during the early part of summer resulted in numerous and sometimes destructive surface water and highway flooding incidents. For example, London Fire Brigade declared a major incident for surface water flooding on 12th July, while 25th July

¹ Please see appendix 1

² Please see appendix 2

³ Please see appendix 3

saw flood damage to homes and vehicles in Bethersden and sewage-contaminated surface water pollute the River Len in Maidstone.

- 2.9 Perhaps the most significant surface water flooding impacts of the summer were experienced in and around Ulcombe, on the Greensand Ridge, where homes and vehicles were inundated following intense rainfall on 1st August, with some further disruptive localised flooding on 8th and 9th August.
- 2.10 Early autumn saw further intense localised rainfall events, with surcharging sewage contaminating surface water near Maidstone East Railway Station on 11th September and sandbags deployed by Kent County Council to protect the Stilebridge Caravan Site, near Marden, on 5th October.

3. Outlook

- 3.1 The Met Office three month outlook summary indicates a 10% chance that November to January will be cooler than average, a 45% chance that it will be near average and a 45% chance that it will be milder than average. In terms of rainfall, the summary indicates a 10% chance the season will be drier than average, 60% chance that it will be near average and a 30% chance it will be wetter than average.
- 3.2 The EA continuously runs surge forecasts, informed by astronomical tide calculations. If a risk of coastal flooding is forecast, then this information is communicated to partners. Indeed, the next notably high equinoctial spring tides, with a corresponding elevated risk of coastal flooding, if in combination with high winds, are forecast for 3rd to 7th December. However, coastal flooding can still occur outside of high spring tides, as a consequence of a storm or breach of defences.
- 3.3 To support local contingency planning for flood response, Exercise Scarce Emerald took place on 28th October and tested the County Council's planning and response capability for a reservoir dam breach. A range of partners took part in this table-top exercise, including Kent Fire and Rescue Service, EA and Ashford Borough Council. A further table-top flood response training exercise (Exercise Basilea) is now scheduled for 6th December and will simulate, in a Kent context, weather conditions that unleashed such lethal and destructive flooding in parts of Germany last July. Key County Council personnel and partner agencies will participate. It is also worthy of note that KCC is delivering a multi-agency training exercise (Exercise Marsh Harrier) on 10th December, simulating a breach of flood defences on the tidal River Thames near Northfleet. Flood response training forms a part of the extensive KCC emergency planning exercise programme.

- 3.3 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.

5. Contact Details

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Appendix 1: EA Flood Alerts and Warnings issued since 8th July 2021

Date issued	Flood Zone	Status
20/07/2021	Shuttle and Cray	Alert
23/07/2021	Shuttle and Cray	Alert
25/07/2021	Shuttle and Cray	Alert
26/07/2021	River Beult from Pluckley and Bethersden to Hampstead Lock at Yalding	Alert
26/07/2021	Shuttle and Cray	Alert
28/07/2021	Shuttle and Cray	Alert
09/08/2021	Upper River Medway	Alert
09/08/2021	River Rother and its Tributaries	Alert
02/10/2021	Shuttle and Cray	Alert
02/10/2021	Upper River Medway	Alert
04/10/2021	Shuttle and Cray	Alert
05/10/2021	River Darent from Westerham to Dartford	Alert
05/10/2021	Upper River Medway	Alert
05/10/2021	River Bourne from Hadlow to East Peckham	Alert
05/10/2021	Rivers Eden and Eden Brook	Alert
20/10/2021	Upper River Medway	Alert
20/10/2021	Plenty, Swalecliffe and West Brooks	Alert
20/10/2021	Rivers Eden and Eden Brook	Alert
20/10/2021	Middle River Medway	Alert
20/10/2021	River Rother and its tributaries from Turks Bridge to the Royal Military Canal	Alert
20/10/2021	River Darent from Westerham to Dartford	Alert
20/10/2021	Shuttle and Cray	Alert
20/10/2021	Coast from St Margaret's at Cliffe to Sandgate	Alert
21/10/2021	Rivers Eden and Eden Brook Area	Warning
21/10/2021	River Bourne from Hadlow to East Peckham	Alert
21/10/2021	Upper River Stour	Alert
21/10/2021	Coast from Ramsgate to Kingsdown	Alert
21/10/2021	Coast from Dartford to Allhallows	Alert
21/10/2021	Coast from Dartford to Allhallows	Alert
21/10/2021	Lower River Medway	Alert
21/10/2021	Coast from Whitstable to Margate	Alert
21/10/2021	Tidal Medway, Medway Estuary and Isle of Grain	Alert
04/11/2021	Coast from Whitstable to Margate	Alert
04/11/2021	Isle of Sheppey and Coast from Kemsley to Seasalter	Alert
04/11/2021	Tidal Medway, Medway estuary and Isle of Grain	Alert
04/11/2021	Coast from Dartford to Allhallows	Alert
06/11/2021	Coast from Ramsgate to Kingsdown	Alert
06/11/2021	Coast from St Margaret's at Cliffe to Sandgate	Alert
06/11/2021	Coast from Fairlight to Dungeness Including the Tidal Rother	Alert
07/11/2021	Coast from Whitstable to Margate	Alert
07/11/2021	Isle of Sheppey and Coast from Kemsley to Seasalter	Alert
07/11/2021	Coast from Dartford to Allhallows	Alert
07/11/2021	Tidal Medway, Medway estuary and Isle of Grain	Alert
07/11/2021	Tidal Thames riverside from Dartford Creek and The Mardyke to the Thames Barrier	Alert

Appendix 2: Met Office Severe Weather Warnings - June to October 2021

Weather Element	Number of Warnings	No of Different Events	Dates covered by Events
Thunderstorm	15	12	16-19 & 28 June 3, 19-20, 24-26 & 31 (Amber on 20 th) July 9 August
Rain	15	10	18 June 12 & 25 July 21-22 August 14 & 19 September 20-21 (Amber) October 30 October
Wind	3	3	6, 23 & 30 July
Wind & Rain	2	1	2 October
Fog	1	1	9 October

Appendix 3: Environment Agency Thames Barrier closures since 8th July 2021

Thames Barrier closures	Date	Status
Thames Barrier closed	13/07/2021	Test
Thames Barrier closed	11/08/2021	Operational
Thames Barrier closed	21/10/2021	Operational
Thames Barrier closed	07/11/2021	Operational