

# Medway Flood Action Plan

## Plan Together - Deliver in Partnership



Working with the Medway Flood Partnership

### Reducing the risk of flooding in the Medway catchment: Year 2 report - December 2019



Full Action Plan

# The Medway Flood Partnership

The Medway Flood Partnership was established in January 2017 and brings together local partners, national agencies, non-governmental organisations and community representatives with the aim of reducing flood risk within the Medway catchment and create better places for people, properties and businesses.

The partnership brings together senior representatives from the following organisations:

|  |   |
|--|---|
| <ul style="list-style-type: none"><li>• Country Land and Business Association</li><li>• Forestry Commission</li><li>• Kent Association of Local Councils</li><li>• Maidstone Borough Council</li><li>• Natural England</li><li>• South East Rivers Trust</li><li>• Tonbridge and Malling Borough Council</li></ul> | <ul style="list-style-type: none"><li>• Environment Agency</li><li>• Joint Parish Flood Group</li><li>• Kent County Council</li><li>• National Farmers Union</li><li>• Sevenoaks District Council</li><li>• Southern Water</li><li>• Tunbridge Wells Borough Council</li><li>• Upper Medway Internal Drainage Board</li></ul> |
|--|---|

Reducing the risk of flooding in the Medway catchment is a complex problem that is best solved by working in partnership. During the December 2013 flood event, approximately 965 homes were flooded across the Medway catchment, devastating people and livelihoods. Over 9,000 properties across the Medway catchment are at risk of river flooding with more at risk from other sources such as surface water or sewer flooding.

The flood action plan was first published at the end of 2017 and sets out what partner organisations will do to reduce flood risk in the short term. While this flood action plan is a significant milestone in addressing flood risk in the Medway catchment, it is part of a longer journey with the partnership, communities and with individuals to build awareness and preparedness for flooding, and identify and develop more actions which can help to reduce flood levels. Over the coming years, the partnership will continue to work with communities to develop this plan further and consider the 25 year vision and the pathway to getting there.

This action plan is a 'living document' that will be regularly monitored and reviewed by the Medway Flood Partnership to make sure that actions are delivered and new information and ideas are incorporated. All members are committed to its delivery and embedding an integrated approach to flood risk management into our organisations.

For more information about the Medway Flood Partnership or to view the Medway Flood Action Plan, please see our webpage on gov.uk:

<https://www.gov.uk/government/publications/the-river-medway-partnership-objectives-members-and-action-plan>

# Capital investment and maintenance



Actions include traditional, engineered flood defence projects which help to reduce the risk of flooding to people, property and businesses.

It also includes maintenance of flood risk assets, such as sluices, to ensure they are in good operational condition and the maintenance of river channels which includes ditch and highway gully clearance, weed cutting, tree and debris removal and desilting of river beds.

## Action 1. Coult Stream flood storage area

Carry out works to enable the Coult Stream Flood Storage Area to be used more frequently to reduce the risk of flooding to homes in smaller events.

|       |   |                          |                    |
|-------|---|--------------------------|--------------------|
| Where | River Medway at Leigh and Hildenborough | Owner                    | Environment Agency |
| When  | March 2018                              | Supporting organisations |                    |

### Action completed in Year 1

The Environment Agency has spent £7,500 on works to ensure the Coult Stream flood storage area protects 51 properties in Snoll Hatch and East Peckham from a 1 in 100 flood (a flood with a 1% probability of occurring in any year).

## Action 2. East Peckham scheme

Carry out feasibility and funding investigations to develop and deliver (if applicable) a scheme to reduce risk to homes and businesses in East Peckham.

|       |              |                          |   |
|-------|--------------|--------------------------|---|
| Where | East Peckham | Owner                    | Environment Agency  |
| When  | 2017-2022    | Supporting organisations | Tonbridge and Malling Borough Council, Kent County Council, South East Local Enterprise Partnership |

### Year 2 progress: action ongoing

Since the 2013 floods the Environment Agency has been investigating options to reduce flood risk in East Peckham and Little Mill. Whilst it's possible to construct walls and embankments to reduce risk to homes and businesses in both communities, the cost is substantial. Current estimates are between £3.8m and £8.4m depending on the size of the scheme. Under the current government funding rules these options would require over 50% in partnership contributions. Despite the Partnership's best efforts we have been unable to source sufficient contributions to enable this option to proceed.

Members of the partnership have met with Tom Tugendhat MP to discuss the options. Due to the large funding gap and the need for action it was agreed that the Environment Agency would progress a Property Flood Resilience (PFR) scheme. Whilst it is disappointing that partnership funding is not available, a technically viable option remains on the table for the future should the funding rules change or partnership funding is identified. In the short term, PFR will help to minimise the impact of flooding to homes. PFR measures would include flood doors, flood barriers, and non-return valves on waste pipes and would be funded by government. Only residential dwellings are eligible and so the road network and commercial areas at Branbridges would remain at risk.

In January 2020, the Environment Agency will carry out threshold surveys of properties within the flood zone. This will confirm which properties are at risk of internal flooding and so are eligible for PFR measures. Once the eligible properties have been identified and the necessary funding secured, more detailed surveys will be done to assess suitability and specific measures for each property.

### Action 3. Leigh expansion and Hildenborough embankment scheme:

Reduce flood risk to 1,470 homes in Tonbridge and Hildenborough by carrying out construction works to enlarge the capacity of the Leigh Flood Storage Area (FSA) and build embankments in Hildenborough.

|       |   |                          |   |
|-------|---|--------------------------|---|
| Where | River Medway at Leigh and Hildenborough | Owner                    | Environment Agency  |
| When  | 2019-2022                               | Supporting organisations | Kent County Council, South East Local Enterprise Partnership, Tonbridge and Malling Borough Council |

#### Year 2 progress update: action ongoing

Over the last year, work to expand the Leigh Flood Storage Area (FSA) and build an embankment to reduce risk in Hildenborough has progressed as planned.

In Hildenborough, the main flood risk is from water in the River Medway being forced up the Hawden Stream. The proposed embankment in Hildenborough will protect land and properties from the Medway. A pumping station will make sure the Hawden Stream still discharges water when flows and levels in the Medway are high. Discussions with the local landowners on the detailed design is progressing.

At the Leigh FSA, the Environment Agency has identified the optimum expanded storage level as 28.6m Above Ordnance Datum Newlyn (AODN). Currently the FSA has a footprint of 278 hectares, and when operating, stores 5.8million m<sup>3</sup> of water at a level of 28.05m AODN.

Increasing the stored water level to 28.6m AODN will reduce flood risk to 1,470 homes and 100 businesses in Tonbridge. Increasing the stored water level to this height will require 16.4 hectares of extra footprint but will provide 7.3million m<sup>3</sup> of storage – a capacity increase of 24%.

The stored water level is set out under the River Medway Flood (Relief) Act 1976 and changing it will require permission from the Floods Minister. Over the summer and autumn, the Environment Agency has been meeting with organisations and landowners affected by the proposed change to discuss the proposal, the impact it may have on them, and the process to make the change. The proposal is expected to be submitted to the Minister for consideration in early 2020.

The Environment Agency plan to submit a planning application for the construction works in late spring 2020. Construction is planned to start in 2021 with completion in 2023.



Gate inspection, January 2019



#### Action 4. Leigh flood storage area interim works

Carry out a 3-year programme of engineering works to keep the Leigh Flood Storage Area in good operational condition.

|       |                 |                          |                    |
|-------|-----------------|--------------------------|--------------------|
| Where | Leigh           | Owner                    | Environment Agency |
| When  | Ongoing to 2019 | Supporting organisations |                    |

##### Year 2 progress update: action ongoing

Over 2019/20 the Environment Agency has invested £600,000 as part of planned works to keep the existing flood storage area fully operational and compliant with the statutory Reservoirs Act. All works are designed to complement the scheme to expand the Leigh Flood Storage Area.

These works include replacing the original 1981 generator with a new one which is designed to last for the next 30 years. This generator supplies back up power so the structure can continue to operate if there is a power cut. New security measures have also been installed to ensure the structure is safe and secure. The lifting mechanism on the north gate has been refurbished so that it continues to operate the gate and lighting has been installed on the crest of the embankment to allow safe access and inspection when required. Repairs have been done to the Powder Mill stream bridge which enables access for maintenance, grass clearance and silt clearing.

The pictures below show the process of replacing the lifting mechanisms on the north gate.



*The mechanisms for the actuators are housed in kiosks on top of the structure. These kiosks had to be removed so the actuators could be taken out.*

*A pair of lead screw 'actuators' open and close the gates mechanically (see arrow). Each actuator is 4m long and weighs 2 tonnes. Two fully operational 'spares' are always kept on site.*



*Then the gear boxes were removed.*

*The actuators were hoisted up and away from the gates.*



*The removed actuator was sent for refurbishment at specialist engineering workshop. The onsite spares were then put back in their place.*

## Action 5. Middle Medway Flood Resilience Scheme – Phase 1

Carry out scoping surveys to understand which homes at greatest risk of flooding in the Middle Medway Flood Resilience Scheme area are suitable for property resistance measures. Where homeowners agree, install property resistance measures in suitable homes in the Middle Medway Flood Resilience Scheme area.

|       |  |                          |   |
|-------|--|--------------------------|---|
| Where | Yalding, Collier Street, Hunton, Marden, West Farleigh, East Farleigh, Watringbury and Nettlestead | Owner                    | Environment Agency  |
| When  | 2017-2019  | Supporting organisations | Kent County Council, Maidstone Borough Council, Joint Parish Flood Group, Southern Regional Flood and Coastal Committee |

### Year 2 progress update: action ongoing

Government funding and levy funding from the Southern Regional Flood and Coastal Committee have enabled the Middle Medway Flood Resilience Scheme to continue to progress.

Following the installation of property flood resilience measures at 28 properties in December 2017 through a pilot approach (Phase 1a), the Environment Agency are continuing to install measures to up to a further 241 properties as part of Phase 1b.

To date, over 200 properties in Phase 1b have had at measures installed with very positive feedback from the homeowners. Installation will continue for the remaining properties with completion by the end of March 2020. Over 40 are listed properties where listed building consent is required from Maidstone Borough Council.



Engagement is a key aspect of the scheme as the measures are installed directly on people's homes and the scheme relies on individual homeowner take-up.

Throughout the scheme the project team have worked closely with the parish councils to ensure they are involved and in a number of cases parish councillors have been instrumental in getting residents to sign up to the scheme by carrying out door-knocking on the project's behalf. The team have also run a number of drop in sessions to discuss the measures with residents.

The December 2019 flooding tested the measures at some properties and some issues were identified which have now been resolved. As part of the installation process, all properties will receive a Post Installation Audit where measures will be checked and signed off with the homeowner.



*Photos left and right, examples of flood resilience measures: flood gates, flood door and non-return valves*

### Action 6. Middle Medway Flood Resilience Scheme – Phase 2

With funding from Kent County Council, Maidstone Borough Council and the Southern Regional Flood and Coastal Committee investigate and implement community level resilience measures to reduce the impact of flooding in the Middle Medway Flood Resilience Scheme area. This includes localised flood defences to reduce risk to homes at greatest risk of flooding

|       |  |                          |   |
|-------|--|--------------------------|---|
| Where | Yalding, Collier Street, Hunton, Marden, West Farleigh, East Farleigh, Watlingbury and Nettlestead | Owner                    | Environment Agency, Kent County Council, Maidstone Borough Council      |
| When  | 2018-2020  | Supporting organisations | Joint Parish Flood Group, Southern Regional Flood and Coastal Committee |

#### Year 2 progress update: action ongoing

Phase 2 is intended to address flood risk for those properties not suited for the individual property flood resilience measures delivered in Phase 1, including temporary flood defences and measures to support community flood resilience. Feasibility work has been carried out and will be reviewed in the light of the experience from the Christmas 2019 floods.

### Action 7. Environment Agency annual maintenance programme

Continue to carry out the Environment Agency's annual programme of maintenance work on Main Rivers across the catchment to maintain the flow of water and ensure flood risk assets are in good condition.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Environment Agency   |
| When  | Ongoing        | Supporting organisations | Kent County Council, Upper Medway Internal Drainage Board, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council, Maidstone Borough Council |

#### Year 2 progress update: action ongoing

Each year the Environment Agency spend approximately £1million on maintenance works across the Medway catchment to ensure that water flows unobstructed down through the catchment, and that structures and defences are in good working order.

Maintenance activities include testing that flood gates shut properly and pumps are working as expected, cutting grass on embankments and clearing excess weed from watercourses, and carrying out mechanical and electrical testing of structures.

The Environment Agency's annual maintenance programme can be found on gov.uk: <https://environment.data.gov.uk/asset-management/index.html>



### Action 8. Collated maintenance map

Collate the flood maintenance activities of risk management authorities across the catchment.

Make this information available to communities to raise awareness of the work that is being done to manage flood risk in the catchment and use it to encourage riparian landowners to carry out their own maintenance.

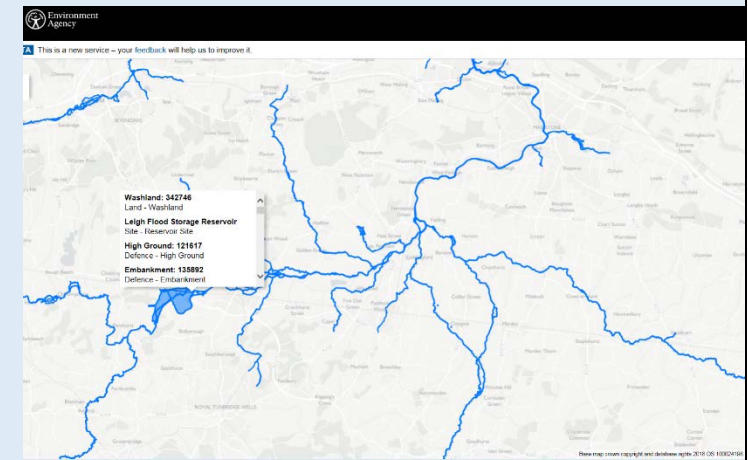
|       |                 |                          |  |
|-------|-----------------|--------------------------|--|
| Where | Catchment wide  | Owner                    | Environment Agency   |
| When  | 2018/19 onwards | Supporting organisations | Kent County Council, Upper Medway Internal Drainage Board, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council, Maidstone Borough Council |

#### Year 2 progress update: action ongoing

The Environment Agency has gathered the maintenance programmes from KCC, UMIDB, TMBC, MBC and KCC Highways and had been developing a static map which brings these annual work plans together. Unfortunately work on this map has stalled this year. Nationally, the Environment Agency has an online live maintenance map which provides up to date information on maintenance plans across the country. Creating a static map of the Medway Catchment could contradict the live map and create confusion over local maintenance plans. We have investigated adding other organisations data to this map, but that is not possible.

We are now looking at alternative ways to provide the information to communities. In the meantime, the Environment Agency's national live maintenance map can be found at:

<https://www.gov.uk/government/publications/river-and-coastal-maintenance-programme>



### Action 9. Maintenance group

Set up a Medway Maintenance Group to discuss and review the planned maintenance work of the Environment Agency, Upper Medway Internal Drainage Board, local councils, Kent County Council Highways and Southern Water. Involve local community representatives to promote a joined up approach and increase community involvement.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Environment Agency   |
| When  | Ongoing        | Supporting organisations | Kent County Council, Upper Medway Internal Drainage Board, Southern Water, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council, Kent Association of Local Councils, Joint Parish Flood Group, Maidstone Borough Council |

#### Year 2 progress update: action ongoing

We have concentrated our efforts this year on the collated maintenance map to guide partnership and community conversations. As noted in action 8, we are now looking at alternative ways to communicate the maintenance information and the Maintenance Group will take this forward in Year 3.



## Action 10: Culvert inspections

Carry out a rolling programme of work to inspect Environment Agency owned culverts across the catchment to ensure they continue to convey flows.

|       |                |                          |                    |
|-------|----------------|--------------------------|--------------------|
| Where | Catchment wide | Owner                    | Environment Agency |
| When  | Annually       | Supporting organisations |                    |

### Year 2 progress update: action ongoing

The results from last year's CCTV inspections were used to plan a programme of repairs. Some of these pieces of work will require significant funding so have been added to the Environment Agency's capital programme which will be paid for through government funding. Other smaller works will be delivered through the annual maintenance programme.

This year's inspections will be completed by the end of this financial year and the results will continue to be fed into work programmes.

Below are some images from a recent CCTV inspection showing the types of defects that are identified and then added to work programmes for repair.



*Crack in pipe at joint, from 7 to 1 o'clock*



*Repair needed in pipe from 11 to 1 o'clock*



*Fracture, longitudinal, at 12 o'clock*

### Action 11: Removal of old structures to reduce flood risk

Work with partners and communities to consider where removal of old structures, such as retention weirs and automatic sluices, may help to lower water levels and reduce flood risk. Where appropriate, work with partners and the community to carry out these works.

|       |                              |                          |                         |
|-------|------------------------------|--------------------------|-------------------------|
| Where | Rivers Teise, Beult and Eden | Owner                    | Environment Agency      |
| When  | 2018-2022                    | Supporting organisations | South East Rivers Trust |

#### Year 2 progress update: action ongoing

A sluice is a sliding gate built within a watercourse to control the flow of water and maintain higher upstream water levels. These higher water levels provide wet fencing and water for livestock, irrigation, navigation, angling and visual amenity value for local communities. Across the Rivers Beult and Teise, there are several auto-sluices of the same design and function that are in a poor state of repair and are coming to the end of their lives.

Duddies and Darman's sluices near Laddingford, Kent are the most downstream of these structures on the River Teise. They were built in 1943 by Italian prisoners of war to support local agriculture and are now owned by the Environment Agency. The structure and functioning of these sluices means they provide little or no flood risk benefit. As a result, the Environment Agency is unlikely to be able to access flood risk management funding for the continued maintenance or replacement of these sluices. However, the sluices cannot continue operating in the present manner.

In December 2018, the South East Rivers Trust held 2 drop in sessions to talk to local landowners and interested parties about the future of the Darman's and Duddies auto-sluices. The key questions asked were:

- How the structures, and the raised water levels they cause, support peoples activities, businesses and land use, and
- How any potential future changes to the existing sluice structures, could affect local people by changing the nature of the local river.

Attendees were also asked how they felt about 4 possible options: total removal with river restoration upstream, partial removal of the structures, transferring the asset to a willing buyer, or doing nothing.

The outcome of the consultation was that no willing buyer for the sluice was identified. In general, stakeholders engaged during the process were cautiously supportive of change to the current situation but there were significant concerns about how potential future work could affect flood risk, both locally and downstream in Yalding. At this early stage of the project, some stated that more information is needed before an informed decision could be made.

The Environment Agency is considering a set water level which works for everyone and welding the structure in place to prevent it from failing. The next step is to carry out modelling to test the effect of this option. Further consultation will be carried out to agree any actions.

### Action 12: Watercourse maintenance

Carry out drainage works and maintenance works to Ordinary Watercourses on behalf of Maidstone Borough Council to maintain flow of water.

|       |                   |                          |                           |
|-------|-------------------|--------------------------|---------------------------|
| Where | Maidstone Borough | Owner                    | Kent County Council       |
| When  | 2017-2020         | Supporting organisations | Maidstone Borough Council |

#### Year 2 progress update: action ongoing

Kent County Council is continuing to deliver this work for Maidstone Borough Council and are investigating further works in the Collier Street area.

**Action 13. River Grom trash screen, Tunbridge Wells**

Improve the trash screen on the River Grom culvert entrance to prevent flooding due to blockage.

|       |                 |                          |                     |
|-------|-----------------|--------------------------|---------------------|
| Where | Tunbridge Wells | Owner                    | Kent County Council |
| When  | 2017/18         | Supporting organisations |                     |

**Action completed in Year 1**

Kent County Council invested £7,000 to install a new trash screen across a culvert on the River Grom in Tunbridge Wells.

**Action 14. Tunbridge Wells**

Investigate ways to reduce risk of flooding at Neville Street and in the Warwick Park area of Tunbridge Wells. If feasible, develop funding plans and deliver flood risk management measures.

|       |  |                          |                     |
|-------|--|--------------------------|---------------------|
| Where | Neville Street/Warwick Park, Tunbridge Wells | Owner                    | Kent County Council |
| When  | 2017/18                                      | Supporting organisations |                     |

**Year 2 progress update: action ongoing**

Kent County Council is working with the Conservators of the Commons in Tunbridge Wells to explore options to reduce runoff. They have carried out a topographical survey of the Commons and are exploring whether it's possible to encourage surface water to soak into the ground.

**Action 15. Southern Water drainage maintenance**

Continue to carry out Southern Water's proactive programme of maintenance work to maintain an effective system, include regular reviews to ensure appropriate maintenance is carried out.

|       |                   |                          |                |
|-------|-------------------|--------------------------|----------------|
| Where | Catchment wide    | Owner                    | Southern Water |
| When  | Rolling programme | Supporting organisations |                |

**Year 2 progress update: Rolling programme under continual review**

### Action 16. Southern Water asset surveys

Carry out a targeted programme of surveys of Southern Water assets to improve our understanding of their condition and inform our future Capital Maintenance plan.

|       |                   |                          |                |
|-------|-------------------|--------------------------|----------------|
| Where | Catchment wide    | Owner                    | Southern Water |
| When  | Rolling programme | Supporting organisations |                |

**Year 2 progress update: Rolling programme under continual review**

### Action 17. Drainage Area Plans

Update Drainage Area Plans for:

Headcorn, Horsmonden, Staplehurst, Ashford, Redgate Mill Crowborough, Aylesford, Ham Hill, Tonbridge, Bidborough, Biddenden, Coxheath, Edenbridge, Luxfords Lane East Grinstead, Eden Vale East Grinstead, Felbridge, Forest Row, Godstone, Hawkhurst South, Leeds, Lingfield, Paddock Wood, Tunbridge Wells North & South, Copthorne, Watlingtonbury.

Use these to understand the impact of weather/climate change and growth on waste water systems and identify how this impact can be managed to reduce flood risk from sewers to homes.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Southern Water   |
| When  | By March 2020  | Supporting organisations | Kent County Council, Environment Agency, Borough and District Councils as required |

### Year 2 progress update: action complete

The Drainage Area Plans for 25 sewerage catchments within the Medway River Basin District have been updated. The interventions identified in these plans to improve performance are being prioritised against other needs across the Southern Water region. The Drainage Area Plans will be used as level 3 tactical planning documents alongside the LLFA Surface Water Management Plans to determine strategic level plans for the River Basin District as part of the creation of the Drainage and Wastewater Management Plan (DWMP). The DWMP will identify potential partnership opportunities and will be completed by summer 2022. All parties responsible for drainage within the Medway river basin will be engaged as a part of this framework.

### Action 18. IDB watercourse maintenance

Carry out annual maintenance work within Upper Medway Internal Drainage Board district to maintain flow of water.

|       |                |                          |                                      |
|-------|----------------|--------------------------|--------------------------------------|
| Where | Catchment wide | Owner                    | Upper Medway Internal Drainage Board |
| When  | Annually       | Supporting organisations |                                      |

**Year 2 progress update: action ongoing**



### Action 19. Community Infrastructure Levy

Support infrastructure projects which will reduce flood risk by considering valid bids for Community Infrastructure Levy (CIL) funding.

|       |                    |                          |                            |
|-------|--------------------|--------------------------|----------------------------|
| Where | Sevenoaks District | Owner                    | Sevenoaks District Council |
| When  | Ongoing            | Supporting organisations |                            |

#### Year 2 progress update: action ongoing

There have been two meetings of the Council's CIL Spending Board (May and December 2018). The Board has awarded funding to 12 infrastructure projects, with one dealing with flooding mitigation (see Year 1 progress).

No further bids have been submitted to the Board to bring forward flood mitigation proposals at present. However, future bids may include flood mitigation projects. The Council's CIL Governance arrangements and assessment criteria for CIL funding were changed in June 2019 and it has been agreed that another Board meeting will be held in December 2019. The applications for this Board meeting were invited between July and September 2019.

The interactive CIL tool provides information on how much CIL has been generated in a parish area from qualifying development; which qualifying developments have contributed to the CIL generated in the parish area; and how much CIL will be given to the relevant town/parish council.

All information is displayed in real time and can be accessed via the SDC website by searching 'CIL'.

### New action: Ightham Property Flood Resilience measures

Carry out scoping surveys to understand which homes at greatest risk of flooding in Ightham are suitable for property resistance measures. Where homeowners agree, install property resistance measures in suitable homes.

|       |         |                          |                     |
|-------|---------|--------------------------|---------------------|
| Where | Ightham | Owner                    | Kent County Council |
| When  | 2018/19 | Supporting organisations |                     |

#### Year 2 progress update: action completed

Kent County Council (KCC) has delivered property flood resilience (PFR) measures to 12 properties in Ightham following the flooding in 2016. KCC worked with the Flood Action Group in Ightham to determine the best course of action to manage the flood risk in the village and resolved to provide PFR for those properties that were eligible. The PFR measures installed are primarily passive, that is they are always in place (for instance flood resistant doors) and do not have to be specially deployed, this is because Ightham does not benefit from flood warnings and the flood risk is very flashy in nature.

# Natural Flood Management



Actions in this theme of work look at how natural flood management techniques could work in combination with engineered solutions to help to slow the flow of water and reduce the impacts of flooding.

There are a wide range of techniques including measures to help slow and/or reduce flows including re-meandering rivers, targeted woodland planting, and techniques to hold water temporarily on the land. As well as helping to reduce flood risk, natural flood management techniques can also provide wider social and environmental benefits by improving our environment for people and wildlife to enjoy.

## Action 20. Supporting NFM through annual maintenance programmes

Work with partners to consider how our annual maintenance work can support natural flood management measures where they help to reduce flood risk.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Environment Agency   |
| When  | Annually       | Supporting organisations | South East Rivers Trust, Natural England, Upper Medway Internal Drainage Board, Kent County Council, Southern Water, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council, Joint Parish Flood Group, Kent Association of Local Councils, Maidstone Borough Council |

### Year 2 progress update: action ongoing

The Environment Agency considers natural flood management plans through its internal consultation on the annual flood risk management maintenance programme. Into the future, we plan to take the collated maintenance programme to the NFM steering group with the aim of identifying opportunities to 'slow the flow'.

## Action 21. Improving the River Beult SSSI for people and wildlife

Identify, investigate and agree options to improve the River Beult SSSI for people and wildlife by working with landowners, local partners and groups. This will include options to slow flood flows and use unoccupied areas of the floodplain to temporarily accept flood water.

|       |   |                          |                    |
|-------|---|--------------------------|--------------------|
| Where | River Beult between Hadmans Bridge near Smarden and its confluence with the River Medway at Yalding | Owner                    | Environment Agency |
| When  | 2017/18   | Supporting organisations | Natural England    |

### Action completed in Year 1

The Environment Agency published the *Improving the River Beult SSSI for people and wildlife* report on the gov.uk website in August 2018:

<https://www.gov.uk/government/publications/the-river-medway-partnership-objectives-members-and-action-plan>

The next step is to put the plan into action and this very much depends on the cooperation and support of local landowners. The Environment Agency and Natural England will use the plan to continue working with partners and local people to design and build the improvement measures. Further surveys and actions will be needed to inform the design stages. Partnership funding will also be needed and a wide variety of sources will be considered, many of which are detailed in the improvement plan.

### Action 22. Mill Farm

Provide 12,500m<sup>3</sup> of flood storage at Mill Farm, Marden and use this site to demonstrate the technique to build support for natural flood management measures.

|       |                   |                          |                               |
|-------|-------------------|--------------------------|-------------------------------|
| Where | Mill Farm, Marden | Owner                    | Kent County Council           |
| When  | 2017              | Supporting organisations | Environment Agency, Mill Farm |

#### Action completed in Year 1

Kent County Council worked in partnership with a local landowner, to complete a 12,500m<sup>3</sup> flood storage area in Marden which will store peak flows from the drainage ditch network and River Teise which contribute to the flooding within the catchment.

Construction of the £40,000 project took place between November 2016 and December 2017. In addition to storing water, the site provides additional habitat across this higher level stewardship farm, which supports a wide diversity of bird life. The site will be managed for wildlife and has no public access so will be an undisturbed haven for wildlife within the local area.

An opening event was held on 18 May 2018 to showcase the flood storage area to other local landowners. A number of follow up meetings took place with other landowners interested in natural flood management measures.

### Action 23. Paddock Wood

Investigate opportunities to use natural flood management techniques to reduce flood risk in Paddock Wood.

|       |              |                          |                                      |
|-------|--------------|--------------------------|--------------------------------------|
| Where | Paddock Wood | Owner                    | Kent County Council                  |
| When  | 2017/18      | Supporting organisations | Upper Medway Internal Drainage Board |

#### Year 2 progress update: action ongoing

Kent County Council is planning to carry out works over the next year to reinstate the channel at Whetsted Woods to take peak flows from the Tudeley Brook.

### Action 24. Ightham

Investigate opportunities to use natural flood management techniques to reduce flood risk around Ightham.

|       |         |                          |                     |
|-------|---------|--------------------------|---------------------|
| Where | Ightham | Owner                    | Kent County Council |
| When  | 2017/18 | Supporting organisations | Environment Agency  |

#### Year 2 progress update: action ongoing

Opportunities for NFM in this catchment are limited. The Countryside Management Partnership are continuing to look for opportunities but now that the property resilience measures have been delivered to properties in Ightham this project is a lower priority (see supplementary Ightham action in the Capital Investment and Maintenance theme).

### Action 25. Catchment Sensitive Farming

Explore how we can use the Catchment Sensitive Farming approach to provide advice to farmers about managing water on-farm that promotes natural flood management measures.

|       |  |                          |   |
|-------|--|--------------------------|---|
| Where | River Teise and River Beult catchments | Owner                    | Natural England                                   |
| When  | 2016-2020                              | Supporting organisations | Southern Water (Beult) & South East Water (Teise) |

#### Year 2 progress update: action ongoing

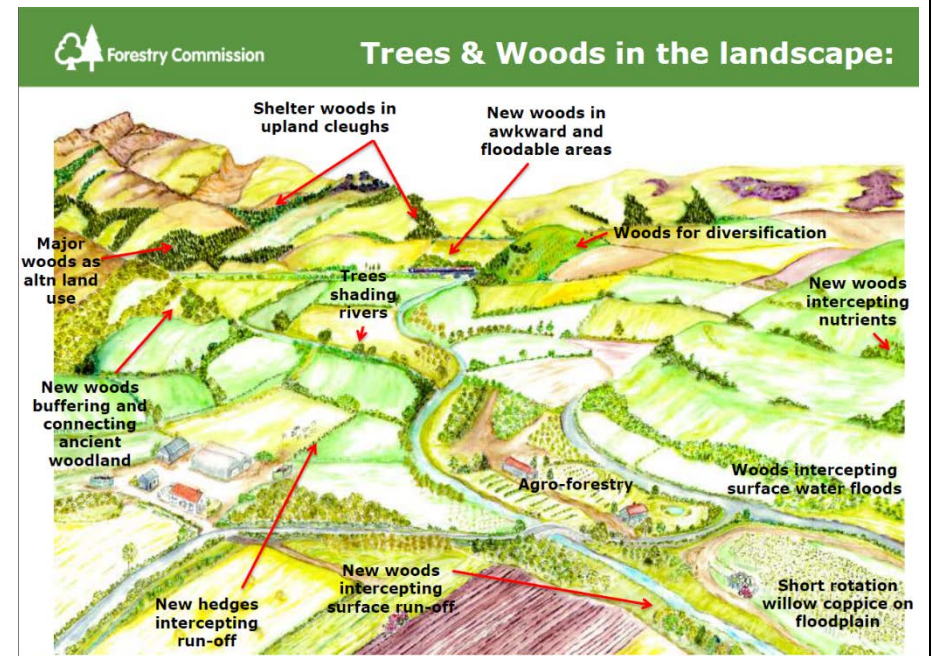
Catchment Sensitive Farming (CSF) officers have continued to promote farming practices that improve soil health for the benefit of soil water infiltration and holding capacity. This is done through on-to-one visits and workshops with groups of farmers.

Over 2019 CSF officers have also been working with representatives from across Defra to promote the benefits and opportunities offered by trees, woods and forestry to landowners.

The Forestry Commission has worked with Natural England and the Environment Agency to develop a training webinar targeted at CSF Officers to enable them to have conversations with landowners to introduce the business opportunities offered by planting more trees while also delivering enhancements to water quality, flood flow management and biodiversity. A new leaflet has also been produced to support these conversations.

Following an introductory conversation a Forestry Commission Woodland Officer will follow up with any interested landowners for a more detailed discussion on individual opportunities.

*Right: Promoting woodland planting to landowners*



### Action 26. Ashdown Forest

Investigate the potential to hold floodwater in the upper catchment by restoring areas of wet heathland in Ashdown Forest through the Countryside Stewardship Higher Tier Scheme.

|       |  |                          |                             |
|-------|--|--------------------------|-----------------------------|
| Where | Ashdown Forest / River Medway headwaters | Owner                    | Natural England             |
| When  | 2016-2021                                | Supporting organisations | Ashdown Forest Conservators |

#### Year 2 progress update: action complete

Natural England has worked with landowners at Ashdown Forest to agree a Countryside Stewardship agreement which will fund the 7,500m3 pond restoration work. The agreement was signed in January 2019 and the landowner has planned work to take place in autumn/winter 2019.



### Action 27. West Kent Woods

Explore the potential for natural flood management techniques in the West Kent Woods ecological network around Sevenoaks-Hildenborough-Hadlow-Kings Hill including the use of attenuation methods to slow the flow.

|       |              |                          |                     |
|-------|--------------|--------------------------|---------------------|
| Where | River Bourne | Owner                    | Natural England     |
| When  | 2017-2020    | Supporting organisations | Kent County Council |

#### Year 2 progress update: action paused

The assessment in Year 1 identified good opportunities to enhance the wet woodland habitat of Bourne Alder Carr SSSI along with woodland creation to the south of the SSSI to slow the flow. It also found that there are opportunities to buffer other SSSI woodland in the catchment with native planting that will deliver NFM.

Over Year 2, property flood resilience measures have been installed to at risk homes in Ightham (see supplementary Ightham action in the Capital Investment and Maintenance theme) which has lowered the priority level of this project. This, combined with current resource pressures within Natural England has meant that this action has been paused. The partnership's Natural Flood Management steering group will consider whether this work can be incorporated into other plans.

### Action 28. Countryside Stewardship

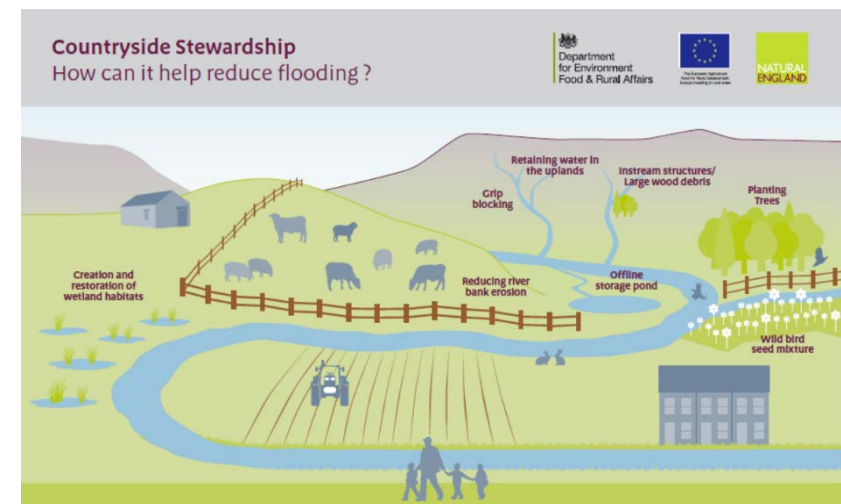
Invest in Countryside Stewardship agreements in the catchment, including creation/ restoration/ maintenance of diverse habitats to improve water quality and reduce run-off / erosion.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Natural England / Forestry Commission  |
| When  | Next 3 years   | Supporting organisations | Southern Water, Landowners and farmers |

#### Year 2 progress update: action ongoing

There are currently 18 Higher Level Stewardship schemes in the catchment. Natural England's aftercare programme raises awareness with these customers on how the options under investment can deliver for NFM.

Natural England also advises customers as they develop new agreements exploring where and how NFM measures can be incorporated into schemes. (See examples in picture, right).



### Action 29. Priority NFM sub-catchments

Through the FRAMES project, identify priority sub-catchments where natural flood management techniques will achieve greatest benefit in reducing flood risk in the catchment. Carry out modelling and identify the techniques to achieve this.

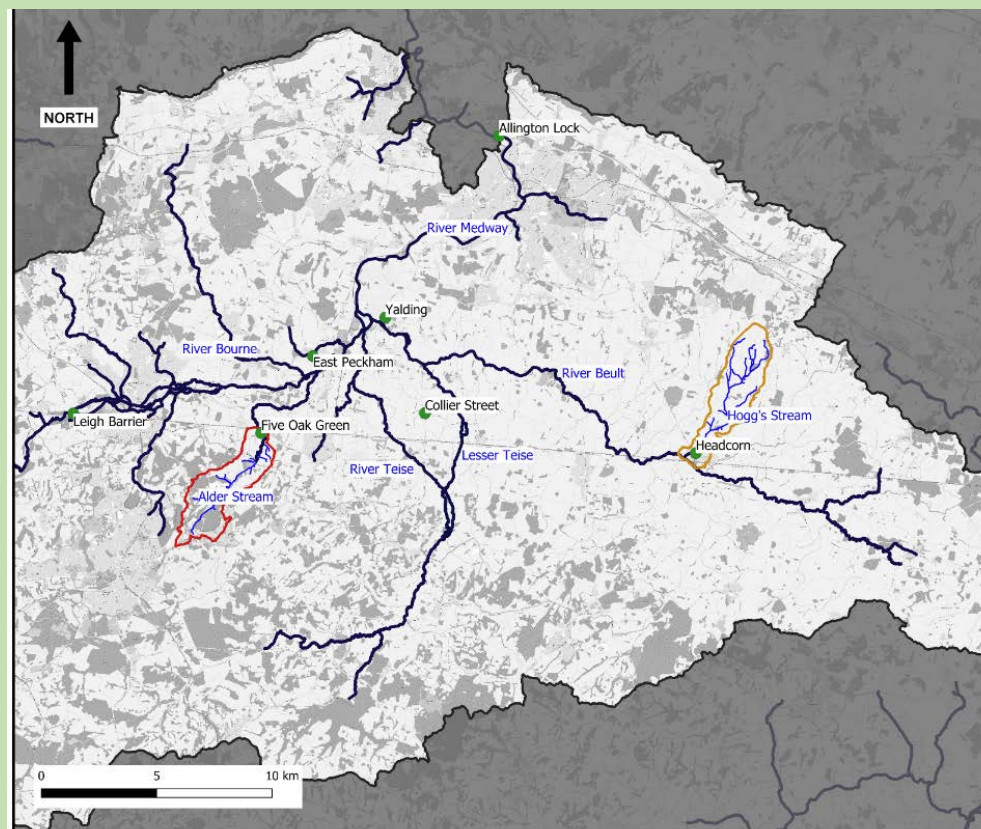
|       |                |                          |   |
|-------|----------------|--------------------------|---|
| Where | Catchment wide | Owner                    | South East Rivers Trust   |
| When  | 2017/18        | Supporting organisations | Environment Agency, Natural England, Forestry Commission, Kent County Council |

#### Year 2 progress update: action complete

Following consultation with partners supported by a wide variety of evidence, SERT have identified 2 flood-affected communities most likely to benefit from natural flood management in the short term. These are Headcorn, where around 20 properties are regularly at risk from flooding from the 'School Stream' (also known as the Hogg Stream); and Five Oak Green, where in the region of 100 properties are at risk from flooding from the Alder Stream. See map, right.

The small area of these sub-catchments means that natural flood management interventions are likely to have a greater effect. In addition, the nature of the headwaters and surrounding landscape make these catchments particularly suitable for this approach. Much has been learnt through the process of identifying these catchments which can be applied elsewhere.

In the longer term it is hoped that interventions in an increasing number of sub-catchments will have a cumulative effect, and help contribute to reducing flood risk further downstream.





## Action 30. Delivering NFM

Through the FRAMES project, work with local communities and landowners in priority sub catchments to design and deliver natural flood management schemes which will test land-management techniques.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | South East Rivers Trust  |
| When  | 2018-2021      | Supporting organisations | Environment Agency, Natural England, Forestry Commission, Kent County Council, Maidstone Borough Council |

### Year 2 progress update: action ongoing

SERT has been working closely with communities in the Headcorn (“School Stream”) and Five Oak Green (Alder Stream) catchments to understand the nature of flooding in their area, and have identified and signed agreements with local landowners who are willing to support pilot natural flood management schemes on their sites. Detailed surveys have been carried out, work has been planned and is now underway in the 2019/20 winter season.

In addition, two demonstration projects have been constructed. The first with the Forestry Commission at Bedgebury Forest, and a second at Sissinghurst Castle in close collaboration with the National Trust. These were designed with a number of objectives:

- to trial and test techniques suitable for the Wealden landscape
- to promote the concept of natural flood management at sites each of which receive over 200,000 visitors.
- to provide test locations for monitoring techniques
- to create exemplar projects which demonstrate the multiple benefits of natural flood management and provide models for replication
- to act as training hubs, where natural flood management techniques appropriate to the region can be shared with contractors, communities and volunteers.

We are planning a series of site visits and training sessions at these demonstration sites. In August, the Chief Executive of the Environment Agency, Sir James Bevan, visited the Bedgebury site and in November SERT hosted a site visit by FRAMES partners from the Netherlands, Belgium, Germany and Denmark to Frogmead Meadow, Sissinghurst. This was featured on BBC South East’s regional news programme, and on Radio Kent. In spring 2020 the Medway Flood Partnership plan to invite guests from organisations across the catchment to a site visit at Sissinghurst.



Photos above: works at Sissinghurst Castle

### Action 31. NFM funding strategy

Develop a funding strategy to identify and secure additional resources for natural flood management measures across the catchment. This will be a live document and reviewed regularly.

|       |                                |                          |   |
|-------|--------------------------------|--------------------------|---|
| Where | Catchment wide                 | Owner                    | South East Rivers Trust   |
| When  | 2017/18 and reviewed regularly | Supporting organisations | Environment Agency, Natural England, Forestry Commission, Kent County Council, Southern Water, Maidstone Borough Council, Tonbridge and Malling Borough Council |

#### Year 2 progress update: action ongoing

To date, natural flood management measures have been delivered in the Medway catchment using £300,000 of Defra funding with £130,000 match funding from the European FRAMES project. Following the project's initial success, Maidstone Borough Council offered up to £100,000 of further funding towards this work to deliver NFM within their borough. This has enabled a total budget of £530,000 to further develop and deliver natural flood management in the catchment.

The current economic uncertainty has delayed a definitive funding strategy however SERT is continuing to gather and compile information on potential funding sources, and hope to have made progress in this area by spring 2020. In 2020 the Medway Flood Partnership will hold a workshop with local authority economic regeneration and planning officers to review the NFM priority sub-catchments and consider where NFM may be delivered in boroughs and possible funding streams to do this. Tonbridge & Malling Borough Council has also earmarked some seed funding from their Business Rates Retention Pilot which could help to deliver NFM in their borough, subject to a viable scheme being identified.

### Action 32. Building NFM awareness and take-up

Through the FRAMES project, coordinate the use of existing mechanisms and networks across the partnership to build understanding of the wider benefits of natural flood management techniques and encourage landowners and tenants to consider implementing them within their current practices.

|       |                |                          |   |
|-------|----------------|--------------------------|---|
| Where | Catchment wide | Owner                    | South East Rivers Trust   |
| When  | 2018-2021      | Supporting organisations | Natural England, National Farmers Union, Country Land and Business Association, Environment Agency, Kent County Council |

#### Year 2 progress update: action ongoing

The concept of natural flood management and its benefits have been widely promoted through local and regional communications channels including appearances on the BBC. The natural flood management demonstration sites created at Bedgebury and Sissinghurst (see Action 30) are becoming a very valuable resource for this mission. Best practice on how to deliver natural flood management in the Wealden landscape is being developed and communicated through partner networks, and directly to landowners and contractors. Coordination of the work takes place through the MFAP natural flood management steering group, and day to day work between SERT, Forest England, Natural England, the EA and the Kent Countryside Management Projects. Partners such as Forest England and the Natural England Catchment Sensitive Farming Officer have been helpful in promoting natural flood management through tree-planting and soil management through their own networks.

In spring 2020 there will be a focus on disseminating results of the work through, reports, meetings and blogs which will be published on the FRAMES and SERT websites [www.southeastriverstrust.org/category/natural-flood-management/](http://www.southeastriverstrust.org/category/natural-flood-management/). The spatial information will be collated in a special website known as the 'Storymap' which will be hosted by the Medway Catchment Partnership. The FRAMES project completes in the summer of 2020, and the wider results of the "Multi-Level" approach to flooding (community resilience, environmental resilience, recovery etc.) across the North Sea Region will be communicated across the partnership.



### Action 33. Develop and share NFM case studies

Identify and develop natural flood management case studies from across the country. Build a database of more local demonstration projects and sites suitable for potential walkovers / visits.

Use these to build landowner support for the techniques to slow the flow of flood water and other natural flood management techniques, through targeted discussions with landowners in priority sub-catchments.

|       |                |                          |   |
|-------|----------------|--------------------------|---|
| Where | Catchment wide | Owner                    | South East Rivers Trust   |
| When  | 2018-2021      | Supporting organisations | Environment Agency, Natural England, Forestry Commission, Kent County Council |

#### Year 2 progress update: action ongoing

Material is being collected from examples of natural flood management best practice from around the country. This information is collected and shared with partners. We have developed a portfolio of pilot projects, including demonstration projects which are particularly suitable for walkovers and site visits. We have successfully used these as the basis for targeted discussions with landowners in sub-catchments, who are now giving their generous support to the project.

SERT has been working in close collaboration with Kings College London to develop a monitoring programme for the work in order to build a robust evidence base on which to build further work. In early summer 2020 this information will be compiled into a report and database as a guide to further development of natural flood management in the Medway. These case studies will be published on the SERT and FRAMES websites.



Above: Natural flood management in action at Bedgebury

# Community resilience



Actions in this theme consider a broad range of activities to improve community resilience, which not only aims to reduce the impact of flooding on communities, but also helps them to continue to function during a flood. This might be by ensuring that the power supply is uninterrupted or by managing traffic to prevent properties flooding from road wash.

The Medway Flood Partnership brings together a wide variety of organisations to work on raising awareness of flood risk, building individual preparedness, emergency planning activities to ensure local communities are ready to respond, and identifying community measures to reduce the impact of flooding.

## Action 34. Raising awareness of the Medway Flood Action Plan and developing it into the future

Run community drop in sessions and workshops to raise awareness of the Medway Flood Action Plan and develop it further to build flood resilience across the catchment and identify next steps for the action plan.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Environment Agency and Kent County Council |
| When  | 2018/19        | Supporting organisations | Medway Flood Partnership                   |

### Year 2 progress update: action ongoing

In year 1, the partnership focussed on delivering the actions set out in the plan. Over year 2, the partnership has continued to work hard to deliver the actions and used proactive communications and engagement to build community awareness of the partnership and action plan. Over this year the Strategy Group has also discussed how the partnership should develop into the future. A key aspect of this discussion was the Environment Agency's 2019 consultation on an updated national flood and coastal erosion risk management (FCERM) strategy.

This draft strategy set out a vision of “a nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100”. In particular, the draft National Strategy describes how we as a nation might move from the concept of protection to resilience and how we embed that across our society.

The Medway Flood Partnership is already working to some extent on many of the themes and objectives discussed in the draft strategy and as such will be well placed to coordinate the delivery of the ambitions described in it. The Environment Agency expect to publish the final National FCERM Strategy early in 2020 at which point the Medway Flood Partnership will consider how we can support its delivery through the Flood Action Plan and may update this action as a result.

### Action 35. Raising awareness of flood risk to residents

Support local communities to help build residents' awareness of their individual flood risk and what they can do to prepare and respond

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Kent Association of Local Councils   |
| When  | Ongoing        | Supporting organisations | Kent County Council, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council, Environment Agency, Kent Resilience Team, Maidstone Borough Council |

#### Year 2 progress update: action ongoing

It's been a busy year for raising awareness of flood risk. This year the Environment Agency has:

- Created a list of engagement resources for communities to use themselves with suggestions of how and when to use them over a 6-12 month period. Resources include posters, postcards, articles and social media content designed to raise awareness of flood risk and help people prepare.
- Completed a gap analysis of the percentage of people who have signed up to the Environment Agency's Flood Warning Service. This has been done for all the communities in the partnership to give a clear picture of which areas are a high priority to target.
- Held a workshop with communications colleagues in the partnership to map our collective routes to communicate with the public. A calendar of events run by members of the partnership was also created to identify appropriate ones to promote flood messaging.
- Visited primary schools in Yalding and Tunbridge Wells and delivered classroom sessions to KS1 and KS2 students.
- Attended the Kent Association of Local Councils AGM to promote flood awareness and present information on how Parish Councils can prepare.
- Attended two KCC Highways workshops covering communities in the partnership to highlight specific messages around not driving through flood water.



### Action 36. Extended Floodline Service

Raise awareness of the Extended Floodline Service and work with local councils to encourage them to register for this free service.

|       |                |                          |                      |
|-------|----------------|--------------------------|----------------------|
| Where | Catchment wide | Owner                    | Environment Agency   |
| When  | Ongoing        | Supporting organisations | Kent Resilience Team |

#### Action completed in Year 1

Maidstone Borough Council, Tunbridge Wells Borough Council, Tonbridge and Malling Borough Council and Sevenoaks District Council have now all signed up to the Extended Floodline Service.

Through this service, Environment Agency Floodline call handlers will be able to provide up-to-date and locally relevant flooding information direct to residents 24 hours a day, 365 days a year on behalf of the Council.



### Action 37. Build awareness of how structures work to reduce flood risk to homes and businesses

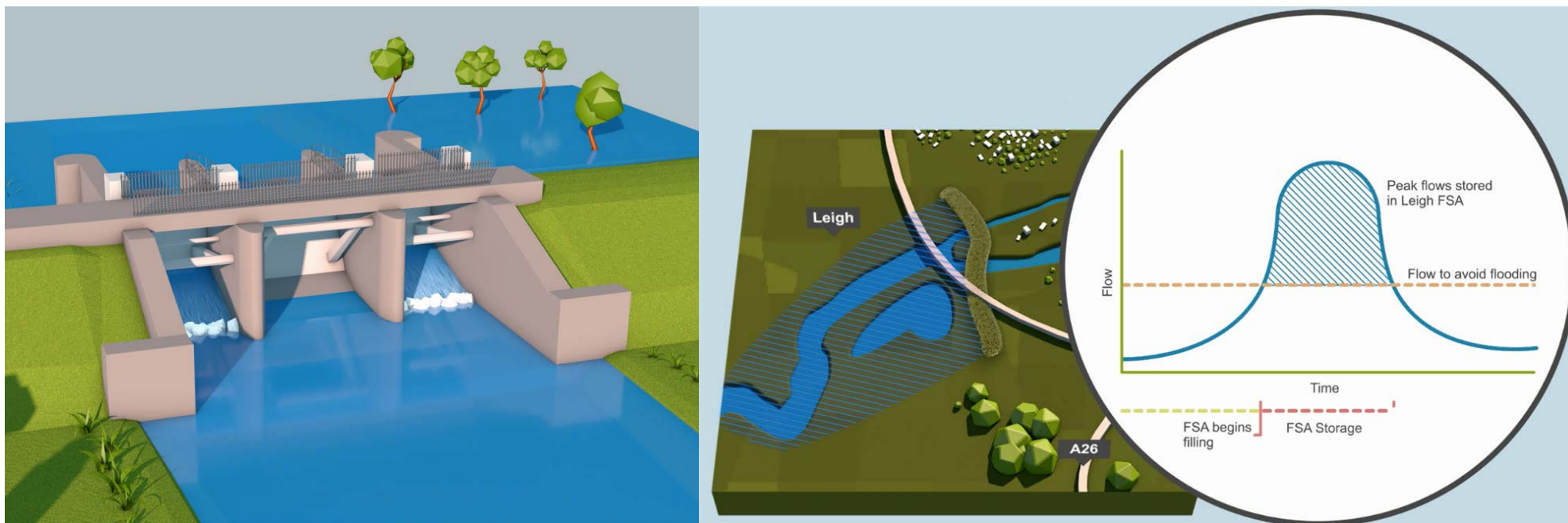
Working with communities and partners, build community understanding about how flood risk management assets are operated to reduce flood risk to homes and businesses without increasing risk to others.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Environment Agency   |
| When  | Ongoing        | Supporting organisations | Kent County Council, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council, Kent Association of Local Councils, Joint Parish Flood Group, Kent Resilience Team, Maidstone Borough Council |

#### Year 2 progress update: action ongoing

Over Year 2, the Environment Agency has hosted a number of visits to the Leigh Flood Storage Area, including members of the Leigh Historical Society and pupils from Hilden Grange school. They have also produced a new animation describing how the Leigh Flood Storage Area works to reduce flood risk to homes and businesses in Tonbridge and Hildenborough.

This animation can be viewed on YouTube here: <https://www.youtube.com/watch?v=9FVsi0WNa50> or by searching Leigh Flood Storage Area.





### Action 38. Promoting flood awareness

Continue to promote flood awareness and preparedness and encourage Parish Councils and community groups to complete and test their own flood plans.

|       |                |                          |   |
|-------|----------------|--------------------------|---|
| Where | Catchment wide | Owner                    | Kent Resilience Team and Environment Agency |
| When  | Ongoing        | Supporting organisations | Kent Association of Local Councils          |

#### Year 2 progress update: action ongoing

The Kent Resilience Team and Environment Agency continue to work with the Kent Association of Local Councils (KALC) and other partners to promote flood preparedness and encourage communities to complete and test their own flood plans.

In July 2019 a questionnaire was sent around by KALC to assess which parish councils have a community resilience plan and what risks the plan covers. The survey results helped identify those communities who may need further support in developing their community resilience plans, specifically around flooding, in addition to mapping those who have an increased awareness of the risks present to their parishes and communities. The Kent Resilience Team and the Environment Agency continue to support parish councils and community groups by working with them to provide guidance, expertise, training and exercising on community resilience plans suitable for a range of incidents, and specifically flood plans. We have also promoted the multi-agency approach we've taken with Aylesford village to other communities in the partnership area and offered to support them in developing and testing their flood plans.

### Action 39. Local flood forums

Support communities to establish local flood forums in Headcorn, Ightham and Hildenborough and develop local resilience plans

|       |  |                          |  |
|-------|--|--------------------------|--|
| Where | Headcorn, Ightham, Hildenborough. Further communities may be added as the project progresses | Owner                    | Kent County Council                      |
| When  | 2017-2019  | Supporting organisations | National Flood Forum, Environment Agency |

#### Year 2 progress update: action ongoing

Through the National Flood Forum, Kent County Council is continuing to support Flood Action Groups in Ightham, Headcorn, Hildenborough, East Peckham and Tunbridge Wells. A new group is also being established in Collier Street. In June the Environment Agency worked with Ightham Flood Group to create their flood plan, providing templates to use and face to face guidance on how to complete them.

These groups help to raise questions and concerns in the communities to the appropriate risk management authorities and improve communication between these authorities and flood vulnerable communities.

#### Action 40. Operational plan for Yalding and Collier Street

Work with partners to develop a jointly owned flood incident plan, to include road closures, to support communities during flood events in Yalding and Collier Street.

If this pilot is successful, develop similar plans for other key communities in the catchment

|       |                            |                          |   |
|-------|----------------------------|--------------------------|---|
| Where | Yalding and Collier Street | Owner                    | Environment Agency  |
| When  | 2017 onwards               | Supporting organisations | Kent County Council, Kent Resilience Team, Maidstone Borough Council, Yalding and Collier Street Parish Council |

#### Year 2 progress update: action ongoing

Over 2018 the partnership developed an operational framework to provide a consistent, effective and coordinated response to flooding in Yalding, Collier Street and Hunton villages. The framework sets out: the locations for sandbag delivery before the onset of flooding, plans for parish councils to close roads to limit the impacts from road wash, and how partners will work together to support the community before, during and after a flood.

Through 2019, the partnership worked to finalise the plan for sign-off by all partners, with plans to carry out a table-top and live exercise in March 2020. The flooding in December 2019 overtook these plans and the framework was successfully used in the multi-agency response to the December 2019 flooding. A multi-agency debrief of the response was carried out in January and the learning is being used to refine the plan for future use.

#### Action 41. Flood training

Run training for Parish Councillors and Clerks in at risk communities to build understanding of all aspects of flooding.

|       |             |                          |  |
|-------|-------------|--------------------------|--|
| Where | County wide | Owner                    | Kent Association of Local Councils       |
| When  | Ongoing     | Supporting organisations | Environment Agency, Kent Resilience Team |

#### Year 2 progress update: action ongoing

The Environment Agency organised Flood Warden training sessions on 28 September 2019 in Tonbridge and 5 October 2019 in Canterbury, which KALC helped promote, but they had to be postponed until 2020 due to low attendee numbers. A subsequent Flood Warden event was held by the Kent Resilience Team and the Environment Agency on 30 November, which KALC also helped promote.

## Action 42. Flood Wardens

Recruit, train and maintain engagement with new and existing volunteer flood wardens.

|       |   |                          |   |
|-------|---|--------------------------|---|
| Where | Ongoing - Tonbridge, Hildenborough, Edenbridge, Yalding, Little Venice Country Park and Marina, Paddock Wood, East Peckham, East Farleigh, Collier Street.<br>New communities on demand | Owner                    | Environment Agency  |
| When  | Ongoing, as required  | Supporting organisations | Kent Resilience Team, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council, Kent Association of Local Councils, Joint Parish Flood Group, Maidstone Borough Council |

### Year 2 progress update: action ongoing

Flood Wardens act as the vital link between communities and the emergency responders, helping to relay information in a flood incident and execute the community flood plans. They also have a role before a flood as they help to raise awareness of flood risk and increase sign up to our Flood Warning System and after a flood as they help with recovery.

Flood Warden uptake in communities continues to be challenging as the 'flood memory' fades. Over this year, the Environment Agency has completed a gap analysis of the number of wardens needed in communities across the partnership area to enable us to target specific communities where more wardens are needed. Following low public take up of flood warden training planned for September, the partnership developed a cross-organisation communications plan to promote the training which has enabled sessions to be rearranged and delivered in November and a further 20 wardens trained.

The partnership has also considered other ways to meet the need for local support during a flood. In July the Environment Agency and Kent Resilience Forum presented a paper to the Local Authority Emergency Planners Group proposing to train staff in borough and district councils as Flood Wardens. As a result, 25 Sevenoaks District Council staff have now been trained as well as 5 Maidstone Borough Council Emergency Planners. 54 members of the voluntary organisation South East 4x4 will also be trained as Flood Wardens and available to be deployed anywhere in Kent.

Two flood warden newsletters have been distributed this year highlighting the upcoming training and resources available to wardens to help promote flood awareness and how to prepare within their communities.

As we head into 2020, partners across the county will be working to review and refresh the Local Multi-Agency Flood Plans following new national guidance from Defra which will then be used to update both the Community Flood Plan and the Community Resilience Plan templates accordingly, to help build the resilience of all those at risk of flooding and other emergencies.

#### Action 43. Emergency flood plans for rural businesses

Develop an emergency flood plan template for rural businesses to ensure they know what action to take in the event of a flood.

Use existing mechanisms to work with businesses and landowners to promote flood awareness and preparedness and encourage them to complete their own the plans.

|       |                |                          |   |
|-------|----------------|--------------------------|---|
| Where | Catchment wide | Owner                    | National Farmers Union  |
| When  | Ongoing        | Supporting organisations | Environment Agency, Kent Resilience Team, Country Land and Business Association |

**Year 2 progress update: action ongoing**

#### Action 44. Kent Prepared

Use Kent Prepared website to raise awareness of flood risk to the business community

|       |                |                          |   |
|-------|----------------|--------------------------|---|
| Where | Catchment wide | Owner                    | Kent Resilience Team  |
| When  | Ongoing        | Supporting organisations | Environment Agency, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council, Maidstone Borough Council |

**Year 2 progress update: action ongoing**

The Kent Prepared website continues to house flood awareness advice, resources and information for businesses, to aid with preparedness and business continuity in the event of flooding: <https://www.kentprepared.org.uk/>.

Website redevelopment is ongoing to provide a more user-friendly interface in early 2020, with refreshed and reformatted content, which will further enhance the promotion of flood awareness information.

#### Actions 45 and 46: Traffic management measures to reduce flood risk

45: Investigate and install traffic management measures as part of the Middle Medway Flood Resilience Scheme to reduce the risk of flooding to homes from road wash.

46: Use learning from Middle Medway Flood Resilience Scheme to consider other areas in the catchment where traffic management may help to increase resilience to flooding. Work with local businesses to raise their awareness of how they can help to reduce flood risk.

|       |                                    |                          |  |
|-------|------------------------------------|--------------------------|--|
| Where | Yalding, Collier Street and Hunton | Owner                    | Kent County Council  |
| When  | 2017-2022                          | Supporting organisations | Yalding, Collier Street and Hunton Parish Councils, Maidstone Borough Council, Kent Resilience Team, other councils as necessary |

#### Year 2 progress update: action ongoing

Kent County Council Highways have worked closely with the Parish Councils of Yalding, Collier Street and Hunton to plan temporary traffic management measures which can be deployed when needed to reduce the risk of flooding from road wash. The kit was delivered in Year 1 and the protocol for use has now been finalised.

Work to integrate the road closure plan with community flood plans is ongoing. The roll out of the property resilience measures in the Middle Medway will require a new community flood plan. Once this is drafted and tested the road closure integration can be completed. Further devolvement of road closures will be rolled out once the pilot project has been fully tested and exercised.

#### Action 47. Asset resilience

Understand which Southern Water assets are key to community resilience during flood events. Work with partners to consider how to make these sites more resilient so that they can continue to support communities during flooding.

|       |                |                          |   |
|-------|----------------|--------------------------|---|
| Where | Catchment wide | Owner                    | Southern Water                          |
| When  | Ongoing        | Supporting organisations | Kent County Council, Environment Agency |

#### Year 2 progress update: action ongoing

As part of the DWMP process the criticality of assets performing drainage functions will be reviewed and agreed between stakeholders. This process will take account of the resilience afforded by assets, systems and process and determine interventions to increase resilience as required



#### Action 48. Testing community flood plans in the Middle Medway

Develop and deliver a rolling exercise programme to test community flood plans within the Middle Medway Flood Resilience Scheme area, including any action needed for homes with property level resilience measures.

|       |  |                          |  |
|-------|--|--------------------------|--|
| Where | Yalding, Collier Street, Hunton, Marden, West Farleigh, East Farleigh, Watlingbury and Nettlestead | Owner                    | Environment Agency   |
| When  | Rolling programme from 2018  | Supporting organisations | Maidstone Borough Council, Kent County Council, Kent Resilience Team, Joint Parish Flood Group |

#### Year 2 progress update: action ongoing

Residents who had property flood resilience measures fitted in 2017 as part of the Middle Medway Flood Resilience Scheme (Phase 1a) took part in an exercise in February 2018 to ensure they were able to fit them.

Over 2019/20, more than 200 further properties are being fitted with measures as part of Phase 1b. The Environment Agency is working with communities and partners to plan a series of exercises which will take place in early 2020 to ensure these residents know how and are able to fit their measures.

As noted in Action 49, take up of our offers to help test community flood plans has been low this year but we will continue to make this offer and will hold another event next year as and when needed.

#### Action 49. Testing community flood plans

Develop and deliver a rolling exercise programme to test community flood plans.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Environment Agency   |
| When  | Ongoing        | Supporting organisations | Kent Resilience Team, relevant Borough and District Councils |

#### Year 2 progress update: action ongoing

We planned to hold a workshop to help multiple communities in the partnership develop and test their flood plans but the communities that were invited did not support this initiative at this time. We will continue to make this offer and hold another event next year as and when needed.

**Action 50. Flood asset register**

Compile a register of flood risk assets in Kent, including high risk culverts, watercourses and other drainage assets, structures and locations.

Share this flood risk management asset information so that local communities understand where local assets are and who is responsible for them.

|       |                |                          |                                 |
|-------|----------------|--------------------------|---------------------------------|
| Where | County of Kent | Owner                    | Kent County Council             |
| When  | 2017           | Supporting organisations | All Risk Management Authorities |

**Year 2 progress update: action ongoing**

At the end of year 1, Kent County Council had prepared a beta version of a website which collates flood risk assets, watercourses etc, which was being tested. The website has been revised after beta-testing and will be launched in 2020.

**Action 51. *Flood Risk to Communities* documents**

Develop and publish *Flood Risk to Communities* documents for all Kent districts and boroughs to explain all sources of flood risk in an area, who is responsible for managing different flood risks, who will do what in an emergency and what is currently planned to manage flood risk in the area

|       |   |                          |                                 |
|-------|---|--------------------------|---------------------------------|
| Where | In each borough and district of Kent, including: Maidstone, Tonbridge and Malling, Tunbridge Wells, Sevenoaks | Owner                    | Kent County Council             |
| When  | 2017  | Supporting organisations | All Risk Management Authorities |

**Year 2 progress update: action ongoing**

Kent County Council has prepared draft Flood Risk to Communities documents for all Kent districts and boroughs. These can be found on the KCC website here:

<https://www.kent.gov.uk/about-the-council/strategies-and-policies/environment-waste-and-planning-policies/flooding-and-drainage-policies/flood-risk-to-communities>

Kent County Council expect to finalise these documents in Summer 2020.

### Action 52. Using national planning policy to manage flood risk

Continue to apply national planning policy and local approaches to the practical design of development and sustainable drainage systems to ensure that planning for new development reduces the risk of flooding

|       |                |                          |   |
|-------|----------------|--------------------------|---|
| Where | Catchment wide | Owner                    | Maidstone Borough Council, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council |
| When  | Ongoing        | Supporting organisations | Kent County Council, Environment Agency   |

#### Year 2 progress update: action ongoing

Having consulted on a draft Local Plan between 1 October and 19 November 2018, Tonbridge and Malling Borough Council (TMBC) submitted its emerging Local Plan to the Secretary of State on 23 January 2019. Following the submission of further documentation, the Planning Inspector requested that an additional 6-week consultation should be undertaken before the Hearing Sessions commence. This consultation concluded on 23 December 2019, and the initial Examination in Public sessions are expected in the late Spring of 2020.

The emerging Local Plan contains policies on Flood Risk (LP17) and Sustainable Urban Drainage Systems (LP18). Planning for Climate Change is embedded throughout the plan and specifically addressed in section 4.10 of the Local Plan; achieving high quality sustainable design (Policy LP14); and the sustainable transport policy (LP23). Ensuring that development mitigates its impact on the environment and is resilient to the effects of climate change is also one of the Local Plan Objectives (Objective 9). These policies build on the existing adopted policies in the Tonbridge and Malling Local Development Framework (2007-10) including Policies CC1-4 on Climate Change in the Managing Development and the Environment DPD and policies CP10 (Flood Protection), CP2 (Sustainable Transport) in the Core Strategy. The adopted LDF and emerging Local Plan can be viewed on the Council's website here: [www.tmbc.gov.uk/localplan](http://www.tmbc.gov.uk/localplan)

Tunbridge Wells Borough Council's Draft Local Plan was consulted on between September and November 2019. The Draft Local Plan sets out the development strategy, strategic objectives and policies, as well as place shaping policies and development management policies. Within the Development Management Policies section, a suite of policies are proposed under the heading – 'Air, Water, Noise and Land'. These policies include detailed direction for development in relation to flood risk, water quality etc and specifically of relevance are: Policy EN26- Water Quality, Supply and Treatment; Policy EN27 – Conservation of water resources; Policy EN28 – Flood Risk and; Policy EN29 – Sustainable Drainage. A detailed Level 1 and Level 2 Strategic Flood Risk Assessment has been prepared to support the policies within the plan including the development management policies and the place shaping policies, particularly in relation to development proposed at Paddock Wood and Capel parish. The adopted Local Development Scheme and Draft Local Plan and supporting documents can be viewed on the Council's website at: <https://beta.tunbridgewells.gov.uk/local-plan>

In Year 2, Sevenoaks District Council has publicly consulted on its Regulation 19 Proposed Submission Version of the Local Plan (December 2018 to February 2019). The Plan contained a draft policy CC1 Climate Change, Flooding and Water Management. In March 2019, the Council approved the Plan to be submitted for public examination. On 30 April 2019, the Local Plan was submitted to the Planning Inspectorate for Examination. The Examination process is currently ongoing and a further update will be provided in Year 3.

### Action 53. Managing flood risk in new developments

Continue to encourage developers to have pre-application discussions to ensure new development incorporates flood risk management best practice.

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Kent County Council and Environment Agency |
| When  | Ongoing        | Supporting organisations |  |

#### Year 2 progress update: action ongoing

The Environment Agency continues to provide a pre-planning application advice service where developers can discuss their proposals and gain flood risk mitigation advice before submitting a planning application to the planning authority.

The Environment Agency is currently talking to developers about 6 sites within the Medway Flood Action Plan area and encouraging them to include best practice measures in their developments.

Of the 3 pre-planning applications we advised on last year, 2 have submitted amended plans implementing our advice in regards to flood risk mitigation, 1 of which has now been approved by the Local Planning Authority with these measures included as conditions.

Kent County Council also offer pre-planning application advice where developers can discuss their drainage proposals prior to submitting an application. KCC held a seminar on 25 September with over 80 developers in Kent where KCC's proposed new Drainage and Planning Policy was presented.

### Action 54. Neighbourhood plans

Encourage Town and Parish Councils who are preparing Neighbourhood Plans to consider sustainable drainage and flooding mitigation measures in their Plans where appropriate

|       |                |                          |  |
|-------|----------------|--------------------------|--|
| Where | Catchment wide | Owner                    | Kent Association of Local Councils   |
| When  | Ongoing        | Supporting organisations | Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council, Sevenoaks District Council, Maidstone Borough Council, Kent County Council, Environment Agency |

#### Year 2 progress update: action ongoing

Consideration of sustainable drainage and flooding mitigation measures has been built into KALC's planning training – *Introduction to Planning, Neighbourhood Planning and Advanced Planning*. KALC ran a couple of pilot training workshops on Neighbourhood Planning and Advanced Planning and are aiming to roll them out in 2020. Sustainable Drainage was also one of the topics covered at the 15 March 2019 KALC Annual Planning Conference.