



Environment  
Agency

Working with the Medway Flood Partnership

# Plan Together - Deliver in Partnership

## Medway Flood Action Plan



Summary Document  
November 2017



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# Introduction

The Medway Flood Partnership was established in January 2017 and is bringing together local partners, national agencies, non-governmental organisations and community representatives to reduce flood risk within the Medway catchment and create better places for people, properties and businesses. The Partnership involves senior representatives and officers from all the partner organisations.

## The Partnership members are:

- Country Land and Business Association
- Forestry Commission
- Kent Association of Local Councils
- Maidstone Borough Council
- Natural England
- South East Rivers Trust
- Tonbridge and Malling Borough Council
- Environment Agency
- Joint Parish Flood Group
- Kent County Council
- National Farmers Union
- Sevenoaks District Council
- Southern Water
- Tunbridge Wells Borough Council
- Upper Medway Internal Drainage Board

# Foreword

by Julie Foley, Environment Agency Area Director for Kent, South London and East Sussex and Cllr Matthew Balfour, Kent County Council Cabinet Member for Planning, Highways, Transport and Waste

The Medway catchment provides a beautiful landscape from the rolling hills of the High Weald through the broad vales of the Low Weald to the wooded peaks of the Greensand Ridge. The River Medway and its tributaries flow through this area, contributing to its beauty and providing habitat for wildlife and a source of water. For hundreds of years we have lived and worked in this wonderful landscape, and our communities have developed around these rivers, drawn by the water, the transport and the energy they provide.

However, along with the benefits of rivers comes the risk of flooding. Most recently communities in the catchment have suffered the damage that this brings during the devastating floods of 2013/14. There have also been other flood events on tributaries of the River Medway or from surface water that have affected smaller communities in the catchment. All of these floods had a significant impact from the damage to property, the disruption to business, the upheaval to people's lives and the continued uncertainty of the threat of another flood.

Since the 2013/14 floods the many organisations that have a role in managing and responding to flooding have worked to help communities to recover and improve our resilience to flooding for the future. However, reducing the risk of flooding in the Medway catchment is a complex problem, which can only be solved by working in partnership. Through the Medway Flood Partnership we have brought together local partners, national agencies, non-governmental organisations and community representatives to develop an action plan for how we can reduce flood risk within the Medway catchment and create better places for people, properties and businesses.

Over 9,000 homes are at risk across the catchment and whilst engineered flood solutions and maintenance have an important role to play, they

cannot always prevent flooding and aren't always suitable. Equally, they are not the only way to manage flood risk. Natural flood management offers opportunities to slow, store or filter floodwaters. Further, community resilience and preparedness can speed up the recovery time for individuals and communities after flooding.

These activities require significant coordination across a variety of organisations. The Medway Flood Partnership was established in 2017 to bring these organisations together to coordinate these activities.

At the start of the Partnership, we said that we wanted to understand the shared challenges and opportunities of managing flood risk across the catchment and make sure that the work of all the organisations was coordinated and complementary.

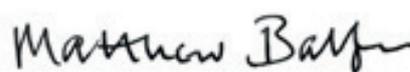
After only one year, we have seen closer working between organisations leading to better coordination of our work. We have a better understanding of each other's ways of working and priorities. We have also found that there are many tools and a great deal of information that we can share. We are taking opportunities to join our work together, to be more efficient and provide better results for our communities.

This action plan is a milestone in addressing flood risk in the Medway catchment, but 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 risk.

Our communities will be central to developing the plan further, and we look forward to working with you to continue to reduce flood risk and create better places for people, wildlife and businesses into the future.



**Julie Foley**



**Matthew Balfour**

# The Medway catchment

The Medway catchment covers all land draining into the Rivers Medway, Beult, Teise, Bourne and Eden, as well as their tributaries. Between them, these rivers drain an area of approximately 1,386km<sup>2</sup>. Whilst the Upper Medway and Teise parts of the catchment are steep-sided and underlain by sandstone, the Eden and Beult areas have wide shallow floodplains and are underlain by clay. The catchment has experienced significant flooding in 1968, 2000/01 and most recently in 2013/14.

Over 9,000 properties across the Medway catchment are at risk of river flooding. There are 2,246 homes and businesses at significant risk, where flooding is likely to happen more frequently with conditions such as deep, hazardous and in some cases fast-flowing water.

Even more properties in the Medway catchment are at risk from other sources of flooding such as surface water.

Under the Flood and Water Management Act 2010, a number of authorities have a role to play in managing the risk of flooding from different sources:



## The Environment Agency

The Environment Agency is responsible for taking a strategic overview of the management of all sources of flooding and coastal erosion. The Environment Agency has a lead role in managing the risk of flooding from main rivers, reservoirs, estuaries and the sea, as well as being a coastal erosion risk management authority. The Environment Agency Area covering Kent, South London and East Sussex is responsible for the Medway catchment.



## Lead Local Flood Authorities

Lead Local Flood Authorities are responsible for developing, maintaining and applying a strategy for local flood risk management in their areas and for maintaining a register of flood risk assets. They also have a lead role for managing the risk of flooding from surface water, groundwater and ordinary watercourses. Kent County Council is the Lead Local Flood Authority for the majority of the Medway catchment.



## District and Borough Councils

District and borough councils are key partners in planning local flood risk management and can carry out flood risk management works on minor watercourses, working with Lead Local Flood Authorities and others. They also take decisions on development in their area which ensure that risks are effectively managed. Councils in the Medway catchment include Maidstone Borough Council, Sevenoaks District Council, Tonbridge and Malling Borough Council and Tunbridge Wells Borough Council.



## Highway Authorities

Highway authorities are responsible for providing and managing highway drainage and roadside ditches, and must ensure that road projects do not increase flood risk. Kent County Council's Highways department is the lead authority for much of the Medway catchment.



## Internal Drainage Boards

Internal Drainage Boards are responsible for managing local drainage from land within their drainage district. Through effective land drainage they can also support the mitigation of local flood risk. The non-tidal Medway catchment is served by the Upper Medway Internal Drainage Board which deals with upland water and fluvial flooding.



## Water and Sewerage Companies

Water and sewerage companies are responsible for managing the risks of flooding from surface water and foul or combined public sewer systems which drain buildings and yards. Southern Water Services Limited are the main water and sewerage undertaker for the Medway catchment.

The Leigh Flood Storage Area was built following the 1968 flood to reduce the risk of flooding to 1,200 homes and businesses in Tonbridge. The communities of Hildenborough and East Peckham are also at risk of flooding from the River Medway.

Yalding and Collier Street sit at the confluence of the Rivers Beult, Teise and Medway. This makes managing flood risk for these communities particularly challenging as they have the potential to flood from any or all of these rivers. Flooding is a frequent occurrence here and an event giving flood depths of over a metre occurs in Yalding roughly every 10 years.

During the December 2013 flood event, approximately 965 homes were flooded across the Medway catchment, devastating people and livelihoods.



# The Medway Flood Partnership

Reducing the risk of flooding in the Medway catchment is a complex problem that can only be solved by working in partnership.

Traditionally, flood risk management has referred to engineered flood defence projects, maintaining flood risk assets and maintenance of river channels. Whilst engineered flood solutions and maintenance have an important role to play, they are not the only solution and unfortunately, cannot always prevent flooding.

Reducing flood risk needs a holistic, integrated approach which considers the topography of the whole catchment. We need to be able to address the following questions:

- Where can we build defences to protect communities without increasing risk to others?
- Where can we hold water on undeveloped land to slow it down and reduce flood levels downstream?
- Where it is not possible to prevent flooding, how can we be prepared and resilient to flooding so that communities recover more quickly?

Working in combination with engineered flood defences, natural flood management offers opportunities to slow, store or filter floodwaters whilst

community resilience and preparedness can speed up the recovery time for individuals and communities after flooding.

These activities require significant coordination across a variety of organisations who are responsible for managing different sources of flooding, so that we can deliver the most we can for local communities and for the benefit of the local economy.

As a result, the Medway Flood Partnership was established in January 2017 to bring these organisations together into a strategic, multi-agency partnership, to take a whole-catchment approach to managing flood risk.

Following government endorsement, it is using learning from around the country and brings together local partners, national agencies, non-governmental organisations and community representatives to develop and deliver a Medway Flood Action Plan.

## The Partnership has the following objectives:



Develop a shared understanding of the strategic challenges and opportunities within the catchment and the need for collaboration to address them



Develop a shared action plan for the next 5 years, and a 25 year vision for the future



Improve communications and engagement by adopting a joined up approach to engagement with communities, government and MPs



Broker strategic solutions to problems identified through the partnership



Identify the inter-relationships between partner projects and ensure coordination between them

# What we have already done

After the December 2013 flood, the Environment Agency and its partners worked hard to repair damaged defences and support communities as they recovered from the devastating effects of the flooding.

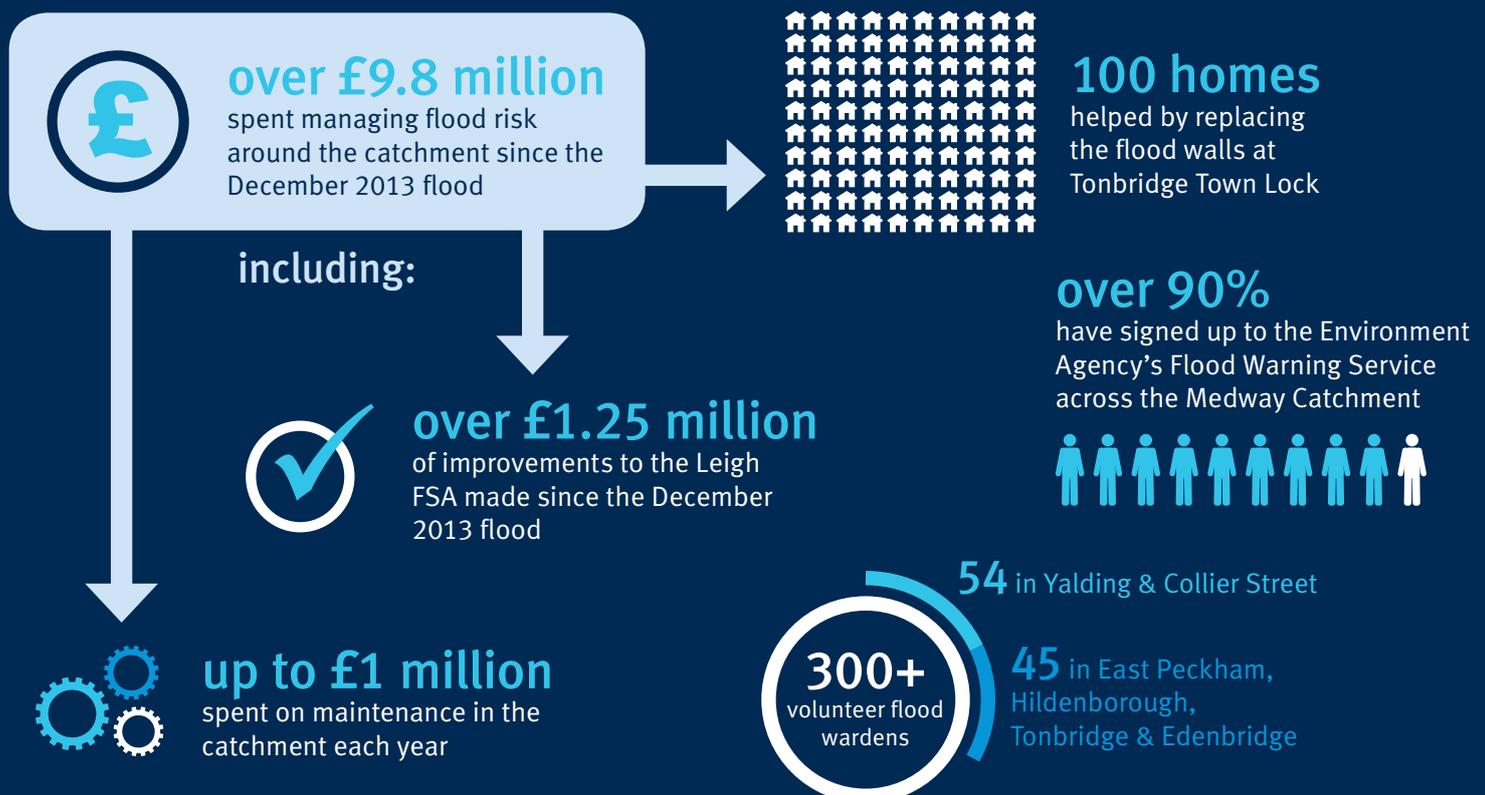
Since the December 2013 flood, the Environment Agency has spent over £9.8million managing flood risk around the catchment including:

- Repair and refurbishment works to the Leigh Flood Storage Area to ensure that this important flood defence asset continues to operate effectively – with over £1.25million of improvements made since the 2013 flood
- Replacing the flood walls at Tonbridge Town Lock in 2016 in partnership with Tonbridge and Malling Borough Council providing a better standard of protection to the town centre – costing £1.95million and benefiting 100 homes
- Carrying out works including operating structures, maintaining reservoirs, structures and defences, clearing culverts, removing trees and silt from the rivers to maintain flow – with up to £1 million spent on maintenance in the catchment each year
- Installing property level resilience measures to 52 homes in Aylesford that help to reduce the impacts of flooding by restricting flood water from entering a property.

We have also done extensive work to build awareness and preparedness in communities across the catchment. The Environment Agency has improved its flood warning service to communities along the Medway and has targeted flood warnings to specific communities at risk so that they can be aware or take action if there is a serious risk of flooding.

Over 90% (8,497) of people at risk of flooding across the catchment have signed up to the Environment Agency's Flood Warning Service across the Medway Catchment. They offer specific community focussed flood warnings for a number of communities within the Medway catchment including Little Venice Country Park and Marina, Yalding and Collier Street.

Through the Kent Resilience Forum over 300 volunteer flood wardens have been trained and recruited, 54 of whom are in Yalding and Collier Street and 45 in East Peckham, Hildenborough, Tonbridge and Edenbridge. All these communities have flood plans which contain practical advice for residents and local businesses about keeping safe during a flood event.



# Incident preparedness

Incident preparedness and response is a key aspect of the flood action plan and partners across the Kent Resilience Forum are working closely to ensure we are ready should there be any significant rainfall events.

Our priority is to keep people safe. By developing plans, taking part in flooding exercises and identifying lessons from exercises and incidents, partners across the Kent Resilience Forum are able to work with communities to help them prepare for, respond to and recover from flood incidents effectively.

Partners across the Kent Resilience Forum have a number of plans in place to fulfil their responsibilities detailed within the Civil Contingencies Act (2004). These plans ensure that partners are able to respond effectively to emergencies, ensuring that:

- People are kept safe through welfare and rest centre provisions
- Critical infrastructure is protected with contingency plans in place should the worst happen
- Equipment and resources are shared across organisations.

We have worked with communities across the Medway catchment since the devastating flooding in 2013/14. Communities such as Yalding, Collier Street, East Peckham, Edenbridge, Tonbridge and Hildenborough have flood wardens ready to support their communities, sharing vital information from the Environment Agency, and helping them to prepare for flooding. These communities also have Community Flood Plans which identify actions for the communities to carry out before, during and after a flood, ensuring that people are kept safe during flooding. Through the community focussed Flood Warning Service across the Medway catchment, the Environment Agency is able to directly communicate with specific communities, explaining the developing situation and prompting individuals to take action.

The Environment Agency also has a national principle depot in Rye, East Sussex that stores equipment, including pumps and sandbags, for aiding incident response to a flood event anywhere across the South East. This equipment is ready to be deployed to support communities across the Medway if needed.

Over autumn/winter 2017, the Environment Agency will be running its 'winter readiness' campaign which will involve working with local partners and communities to:

- Run a winter readiness exercise with Parish Councils, Kent County Council Highways, Maidstone Borough Council and the Kent Resilience Team to test our incident operational plan and road closure plans for Yalding and Collier Street
- Develop a pilot plan to support our partners in providing sandbags and equipment to residents in Yalding and Collier Street to help them reduce the risk of flooding to their homes in the event of a flood
- Start installing property level resilience measures to homes at very significant flood risk in the Middle Medway villages. This work will continue in 2018/19 and will include measures such as flood doors, airbrick covers and installing non-return valves to drains and pipes
- Hold a number of community winter readiness events with our partners to share our plans with communities, raise awareness of flood risk and support them to be prepared for flooding
- Hold a Flood Warden Demonstration Day to support flood wardens in developing community flood plans and community exercises, provide information on insurance and property level resilience and live demonstrations on how to use sandbags effectively.

# Medway Flood Action Plan

The Environment Agency has produced the Medway Flood Action Plan on behalf of the Medway Flood Partnership. The plan sets out a shared action plan for the next 5 to 10 years, and a 25 year vision for the future.

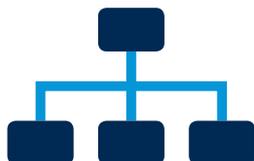
The Medway Partnership have agreed that actions should only go into the plan if they:



Manage or reduce the risk of flooding, increase resilience to flooding or assist with recovery after a flood



Benefit the Medway catchment, upstream of Allington Lock



Have an identified lead organisation that is primarily accountable for a specific action



Are funded and/or planned to start in next 5 years starting in 2017/18 and looking out to 2021/22

The Medway Flood Partnership have agreed that the Action Plan will be a rolling plan updated every 5 years and kept under continuous review.

We have also agreed that longer term, unfunded activities should be incorporated into a 25 year vision and that developing the plan should not preclude any flood risk activity being carried out in the meantime.

# Summary of themes

The Medway Flood Action Plan has three key work streams led by partner organisations:



## Capital Investment and Maintenance – led by the Environment Agency

This theme of work includes 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. The Environment Agency is leading this theme, working in close collaboration with other risk management authorities.



## Natural Flood Management – led by Natural England and South East Rivers Trust

This theme of work looks at how natural flood management techniques could work in combination with engineered solutions to help to reduce the impacts of flooding. Natural flood management is not always appropriate and so needs to be considered on a catchment scale.

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.

Natural England with the South East Rivers Trust will take the lead for this theme working in close collaboration with the Medway Catchment Partnership, landowners and other local partners.



## Community Resilience – led by Kent County Council

This theme considers 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.

Kent County Council will take the lead for this theme, building on the existing work of the Kent Resilience Forum and working closely with communities across the catchment.

# Capital Investment and Maintenance: key actions



There is a significant programme of works in place to improve existing flood defences in the Medway, as well as provide new defences and protection.

Through the Environment Agency's flood risk capital programme, schemes are being planned for Tonbridge, Hildenborough, East Peckham and the Middle Medway villages.

The Environment Agency's funding for flood risk management needs to follow Government funding rules. This means:

- Taxpayers money is invested in those schemes that will deliver the greatest benefits for society as a whole
- Options for a scheme need to be tested against a number of factors including economic viability (costs versus benefits), engineering difficulty (can it be built and will it make a difference), environmental impacts and public acceptability.

Instead of meeting the full cost of a limited number of schemes, the Government's partnership funding approach means that Environment Agency funding can support more potential schemes. The amount of funding a scheme can attract will depend on the flood risk benefits it delivers to people and property. Where a scheme qualifies for only a portion of Environment Agency funding, the scheme will need to be 'topped up' through partnership funding from local partners or the local community in order to go ahead.

Securing partnership funding contributions will be key to unlocking Environment Agency funding for new and enhanced flood schemes that are technically viable in the Medway catchment. More information about the Government's Partnership Funding approach can be found on the gov.uk website by searching for 'FCRM partnership funding calculator'.

## Environment Agency-led flood schemes

### Leigh Expansion and Hildenborough Embankments Scheme

The objective of the Leigh Expansion and Hildenborough Embankments Scheme is to enlarge the Leigh Flood Storage Area and construct embankments in Hildenborough. The Environment Agency is working in partnership with Kent County Council and Tonbridge and Malling Borough Council to deliver this scheme. Enlarging the Leigh Flood Storage Area and constructing defences around Hildenborough will cost approximately £17million and will reduce the risk of flooding to an additional 275 properties over and above those already benefitting from the existing Leigh Flood Storage Area. Overall, this scheme will ensure a better standard of protection to 1,475 properties.

The Environment Agency have secured £11.2million of Government funding to contribute to the works with the remaining £5.8million coming from Kent County Council, Tonbridge and Malling Borough Council and the South East Local Enterprise Partnership through partnership funding. In addition to safeguarding existing homes and businesses and creating 70 direct jobs, the scheme will deliver significant benefits to support sustainable economic growth in the Tonbridge and Malling area. It is also anticipated that there will be a reduction in insurance premiums for businesses and

home owners within flood risk areas, helping to unlock greater disposable income which will flow into the local economy. The scheme design and appraisal is already underway and the Environment Agency will be seeking planning approvals in 2018. The construction target date is 2020 with completion in 2023.

As part of the completion of the Leigh expansion, the Environment Agency will also construct flood embankments around Hildenborough to ensure a better standard of protection to people and property in the village. Whilst the development of the Leigh expansion project is underway, the Environment Agency will invest in a programme of engineering works aimed at keeping the existing flood storage area fully operational and compliant with the statutory Reservoirs Act. This will include up to £1.3million of improvements including replacement of the controls to the radial gates, refurbishments to the Leigh control structure, crest improvements and culvert maintenance works.

More information about the Leigh Expansion and Hildenborough Embankments Scheme can be found on the gov.uk website by searching for 'Leigh Expansion and Hildenborough Embankments Scheme'.

## East Peckham Flood Alleviation Scheme

East Peckham has over 500 homes and over 80 businesses at risk of flooding from the River Medway, the River Bourne and the Coult Stream. A flood alleviation scheme that reduces the risk of flooding from the Coult Stream is already in place, however the dominant risk in East Peckham is from the River Medway. Upstream of East Peckham, the village of Little Mill is also at risk from the River Bourne. The last major flooding in 2013 affected over 100 properties across East Peckham and Little Mill.

Over 2017/18, the Environment Agency will appraise options to determine the most effective means of reducing flooding whilst not worsening flood risk

elsewhere in the catchment. The option most likely to be progressed would involve a combination of walls and embankments that benefit both East Peckham and Little Mill.

Once the preferred scheme option has been finalised, the Environment Agency will be able to determine a Government funding contribution based on the scheme's benefits to people and property. The scheme has already secured funding from the South East Local Enterprise Partnership. The preferred option will require further partnership funding contributions to enable the scheme to move ahead.

## Middle Medway Flood Resilience Scheme

The Middle Medway Flood Resilience Scheme covers 8 parish council areas around the confluence of the Rivers Medway, Beult and Teise, including Yalding and Collier Street.

The scheme has two interlinked phases that are planned to be run together. The first phase is looking at individual property level resistance measures, such as air brick valves and flood doors, which restrict floodwaters from getting into a property. The second phase will consider community level measures that minimise the damage flood water can cause to properties, such as local walls and embankments.

The Environment Agency has completed surveys to 454 homes at very significant risk of flooding to determine their suitability for individual property level resistance measures. The Environment Agency has a maximum of £7,500 of Government funding per property available to install property level resilience measures in suitable homes at very significant risk. This is likely to provide sufficient funding for many of the affected homes.

The Environment Agency is working collaboratively with the parish councils to install these measures and will be fast tracking approximately 28 homes with property level resilience measures before winter 2017/18 to help provide an early demonstration of the measures. The Environment Agency will continue to roll out property level resilience to homes that are suitable and willing to take up these measures through 2018.

Some homes in this area will not be suitable for property level resistance measures due to the nature and age of the properties or whether they are listed buildings. Kent County Council, Maidstone Borough Council and the Environment Agency, are therefore developing a second phase to the scheme where we will consider community resilience measures.

The Southern Regional Flood and Coastal Committee have allocated £100,000 to support this scoping and feasibility work and Kent County Council and Maidstone Borough Council will also contribute funding. In early 2018, the Environment Agency will be working with local partners to manage this second phase in parallel with the further roll out of property level resilience measures. This will ensure that the community engagement around the options for either property level or community level resilience is joined up.

Any community resilience measures that are identified as beneficial from the scoping and feasibility work will need partnership funding contributions to be secured before the second phase of this scheme can progress into design and construction.

More information about the Middle Medway Flood Resilience Scheme can be found on the gov.uk website by searching for 'Middle Medway flood resilience'.

## Maintenance of flood risk assets in the Medway

In addition to providing new or enhanced flood protection, it is equally important to invest in the maintenance of river channels, to ensure conveyance of flood waters following heavy rainfall events, as well as ensuring that existing flood risk assets, such as sluice gates, pumping stations and weirs, are kept in good condition.

What flood risk assets do we have in the Medway?	
Asset Type	Number of Assets
Length of main river in the Medway catchment including the Rivers Eden, Medway, Teise, Beult and all their main river tributaries (Environment Agency lead responsibility)	250km
Control gates – structures on the rivers that control water levels, including automatic sluices, penstocks and navigations locks on the River Medway	38
Embankments – flood defence earth embankments	63
Flood gates - including for example flood gates along the tidal walls at Aylesford	22
Stop log structures - on the Rivers Beult and Eden, retaining water levels in the summer	8
Outfalls - including 22 tidal outfalls between Aylesford and Wouldham on the tidal Medway	67
Screens (weed screens, trash screens and safety grilles)	45
Culverts	110
Walls – Concrete and masonry flood walls including Tonbridge Town walls and the new flood walls at Avebury Avenue	67
Weirs	57
Reservoirs – Leigh Flood Storage Area and Coult Stream Dam at East Peckham	2
Pumping stations – Leigh Pumping Station and Aylesford Pumping Station	2

## Environment Agency maintenance works

The Environment Agency has powers to carry out a variety of works to maintain main river channels, assets and structures to manage or reduce flood risk to people and property and to ensure the health and safety of our staff and other river users.

Maintenance works include: weed cutting, channel maintenance, obstruction removal, grass cutting by hand/machine, vermin control, tree or bush work, defence repair, reservoir maintenance work, structure maintenance and some works to improve habitat and biodiversity. Maintenance work will also include desilting or dredging where this is proven to be the most cost effective way of managing flood risk to people and property.

The Environment Agency will also carry out operational and condition inspections of watercourses and flood defences to identify maintenance needs and health and safety works. The Environment Agency's maintenance work focusses on where it delivers the greatest flood risk benefit. The Environment Agency plans its maintenance works using a risk-based approach so that it invests government funding in the activities that contribute the most to reducing flood risk to people and property, with every pound of funding.

The Environment Agency is committed to developing a 5 year maintenance plan for the Medway catchment and will have a rolling programme of maintenance work valued at about £1million per year.

## Planning together for future maintenance needs

Other organisations also have a role to carry out river maintenance work on locally managed ditches and watercourses and individual land owners will also have riparian responsibilities. Through the Medway Flood Partnership we have established a Medway Maintenance Group made up of the Environment Agency, Medway Internal Drainage Board, Southern Water, Kent County Council Highway's Department and the borough and district councils.

A key commitment of the Medway Flood Action Plan is to continue to invest in maintenance works and

coordinate the work carried out by organisations across the catchment to identify pinch points, efficiencies and better ways of working.

We will share these plans with communities so that they know what we are planning to do and can carry out their own maintenance work on locally managed ditches and watercourses with the relevant environmental permissions. We will also work with local communities to understand where it might be possible to remove existing structures, such as weirs and sluices, to reduce flood levels.



# Capital Investment and Maintenance catchment map

Here is a summary of the capital investment and maintenance actions across the catchment. The complete action text can be found in the full action plan.

## Location-specific actions

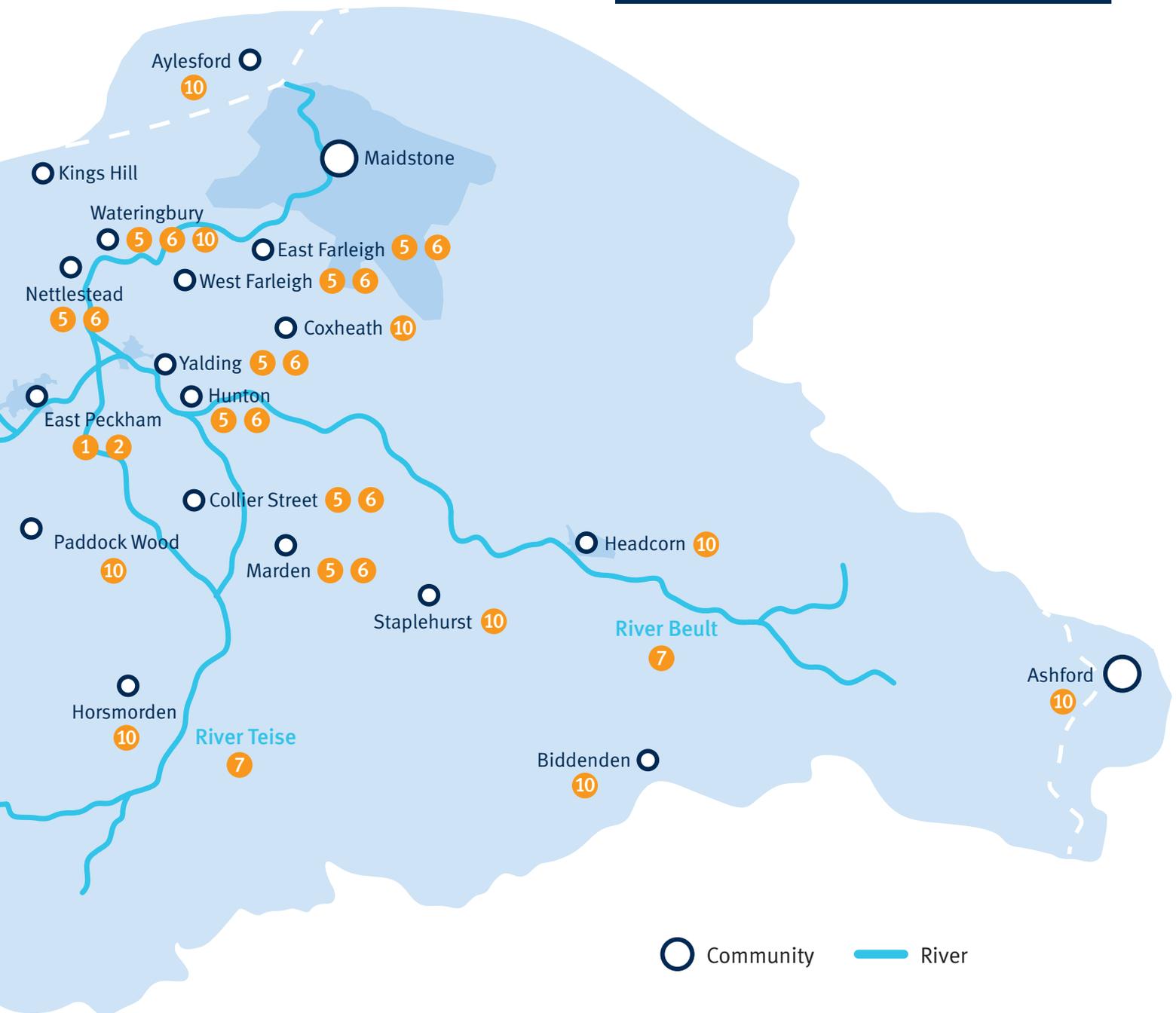
- 1 Carry out works so that the Coult Stream Flood Storage Area can be used more frequently to reduce the risk of flooding to homes in smaller events.
- 2 Continue investigating the feasibility of a scheme to reduce risk to homes and businesses in East Peckham.
- 3 Enlarge the capacity of the Leigh Flood Storage Area and build embankments in Hildenborough to reduce flood risk to 1,475 homes.
- 4 Carry out works to keep the Leigh Flood Storage Area in good operational condition.
- 5 Continue work on the Middle Medway Flood Resilience Scheme, installing property level resilience measures to homes at greatest risk of flooding.
- 6 Continue work to identify where community level resilience measures could help to reduce the impact of flooding in the Middle Medway Flood Resilience Scheme area. Install these where possible.
- 7 Consider where removal of old structures, such as retention weirs and automatic sluices, may help to lower water levels and reduce flood risk.



- 8 Improve the trash screen on the River Grom culvert entrance to prevent flooding due to blockage.
- 9 Investigate ways to reduce risk of flooding at Neville Gardens and in the Warwick Park area of Tunbridge Wells.
- 10 Update Drainage Area Plans and 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.
- 11 Support infrastructure projects which will reduce flood risk by considering valid bids for Community Infrastructure Levy (CIL) funding.

### Catchment-wide actions

- Risk management authorities will continue to carry out proactive maintenance works to maintain the flow of water and ensure flood risk assets are in good condition.
- Collate the flood maintenance activities of the Environment Agency, Upper Medway Internal Drainage and councils across the catchment. Make this information available to communities to encourage riparian landowners to carry out their own maintenance.
- Hold an annual meeting with the Maintenance Group and community representatives to discuss and review the planned maintenance works of the Environment Agency, Upper Medway Internal Drainage Board, local councils, Kent County Council Highways and Southern Water.



# Natural Flood Management: key actions



Traditionally we have built structures to hold water away from homes during floods. But there is not always an engineering solution to prevent flooding.

Natural flood management is the alteration, restoration or use of landscape features to reduce flood risk to properties. It can use a wide variety of techniques such as small 'leaky dams', run-off attenuation features, new hedgerows and woodland planting to 'slow the flow', reduce and delay flood peaks and store more water away from homes.

Natural flood management in the Medway offers an opportunity to achieve more for both ecology and flood risk management by looking at water management in an integrated way across the catchment. But working more closely with nature also offers wider benefits for people and society as a whole - improving water quality, habitats and landscape features in the Medway, and creating and improving spaces for people to enjoy.

Natural flood management is a fairly new technique and a key aim in the Medway Flood Action Plan is to gather data and evidence so that we can identify where natural flood management interventions can help to reduce flood risk in the catchment.

Natural flood management will be dependent on landowners supporting it so we need to build awareness and understanding of the techniques and how they can be incorporated into existing land-use. We will be working with others from across the country to develop case studies of where the techniques have worked and use these to encourage landowners to consider incorporating them.

The South East Rivers Trust has secured €200,000 from the European FRAMES project to investigate, design and deliver natural flood management schemes. The Environment Agency is contributing £300,000 of Government funding to this project to focus on exploring opportunities in the Medway. This funding was made available as part of the Department for Environment, Food and Rural Affairs Natural Flood Management programme announced in the 2016 Budget.

The Medway is a large and geographically dispersed catchment encompassing a wide range of settlements, farm houses, agricultural buildings and infrastructure. We need to prioritise areas of the Medway where positive land management could make the most difference for natural flood management, improving water quality and enhancing biodiversity. The initial phase of the work will be to work with communities and landowners in areas where we believe most benefits can be achieved, to co-design natural flood management projects in partnership. This scoping and feasibility work will be starting this autumn and will inform where we can then best target our efforts and contribute to the Medway Flood Action Plan.

The South East Rivers Trust will be leading the project with help from partners including the Environment Agency, Kent County Council, Natural England, Forestry Commission, Upper Medway Internal Drainage Board, National Farmers Union, and Country Land and Business Association. We will also be working closely with the Medway catchment partnership.

The Medway Flood Partnership will also look for opportunities to optimise links to important features of the Medway, including Areas of Outstanding Natural Beauty, Sites of Special Scientific Interest, ancient woodland and the Ashdown Forest Special Area of Conservation, where positive management could support natural flood management. The Forestry Commission will also explore how landowners can be encouraged to plant multifunctional woodland which helps reduce runoff and slow the flow of floodwaters.

The Medway Flood Partnership will plan how to monitor and evaluate the natural flood management techniques so that we can demonstrate the benefits from the project widely to partners.

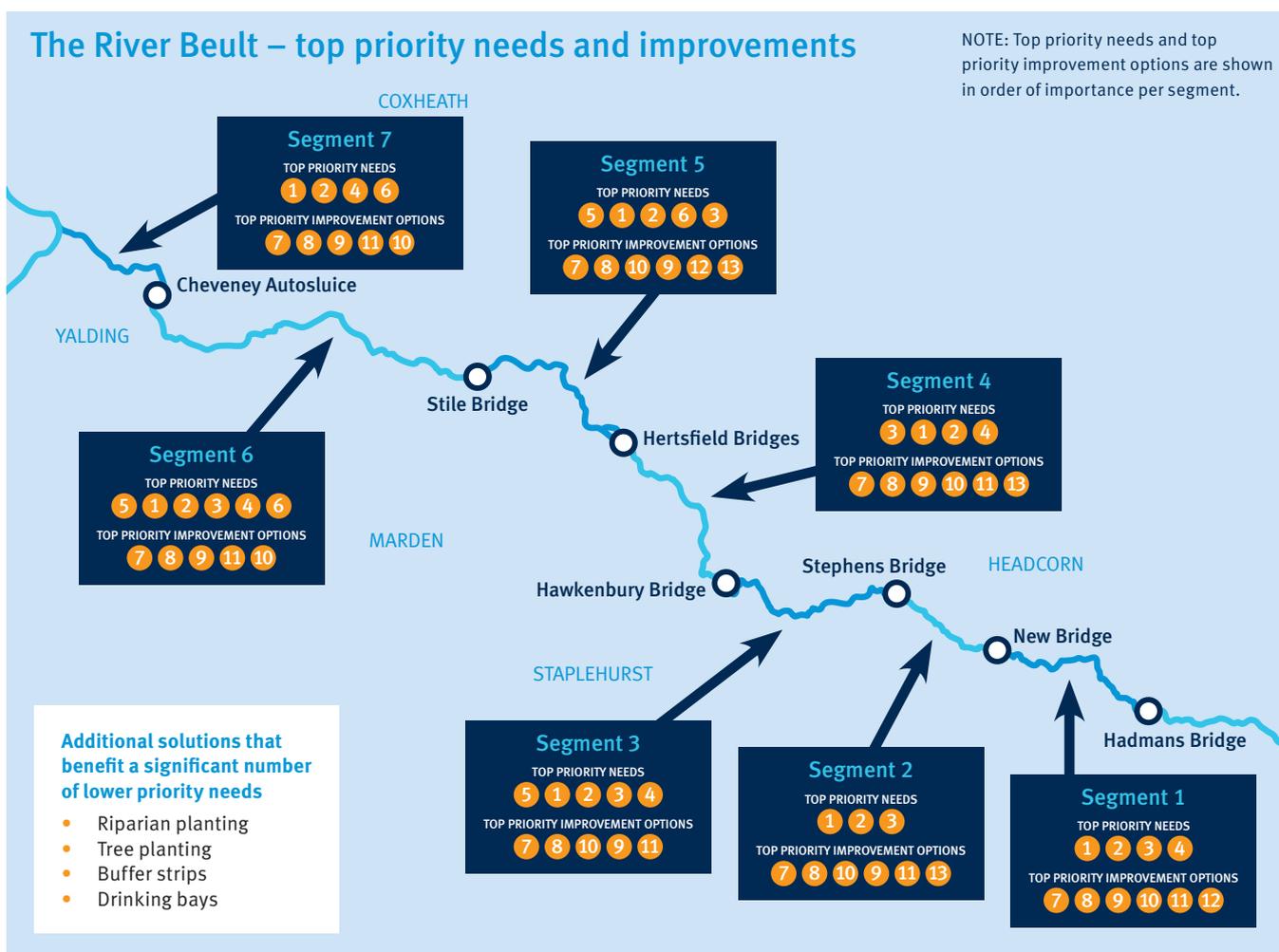
# Improving the River Beult for people and wildlife

The River Beult is one of the tributaries of the River Medway flowing through Headcorn, Hunton and Yalding presenting a flood risk to those communities in time of high flow.

It is designated as a Site of Special Scientific Interest (SSSI) from Hadmans Bridge near Smarden to the point where it joins the River Medway. The Beult is designated as a SSSI as it is one of the best examples of a clay river in England. It supports nearly one hundred species of plant and some nationally scarce insects like the hairy dragonfly, *Brachytron pratense*. It is also an important natural resource for land managers, anglers and other users.

Management of the river has changed very little in many years but there are continued concerns about the poor ecological condition of the river.

As part of the Medway Flood Action Plan, Natural England and the Environment Agency will be working with landowners to understand how we can better manage water on the River Beult to benefit people and wildlife. The diagram below summarises the priorities that people have identified and the measures which could improve these aspects. The next step is to work with local communities and partners to tailor the measures to local needs and secure funding and agreement for delivery by the Environment Agency, Natural England, local organisations, communities or landowners.



## LEGEND

### Top priority needs

- |                         |                    |
|-------------------------|--------------------|
| 1 Flood risk management | 4 Water quality    |
| 2 Water supply          | 5 Crop pollination |
| 3 Habitat               | 6 Soil health      |

### Top priority improvement options

- |                         |                       |
|-------------------------|-----------------------|
| 7 Re-grade banks        | 11 Barrier removal    |
| 8 Insert gravel riffles | 12 Farming engagement |
| 9 Shallow berms         | 13 Meander channel    |
| 10 Backwater creation   |                       |



# Natural Flood Management catchment map

Here is a summary of the natural flood management actions across the catchment. The complete action text can be found in the full action plan.

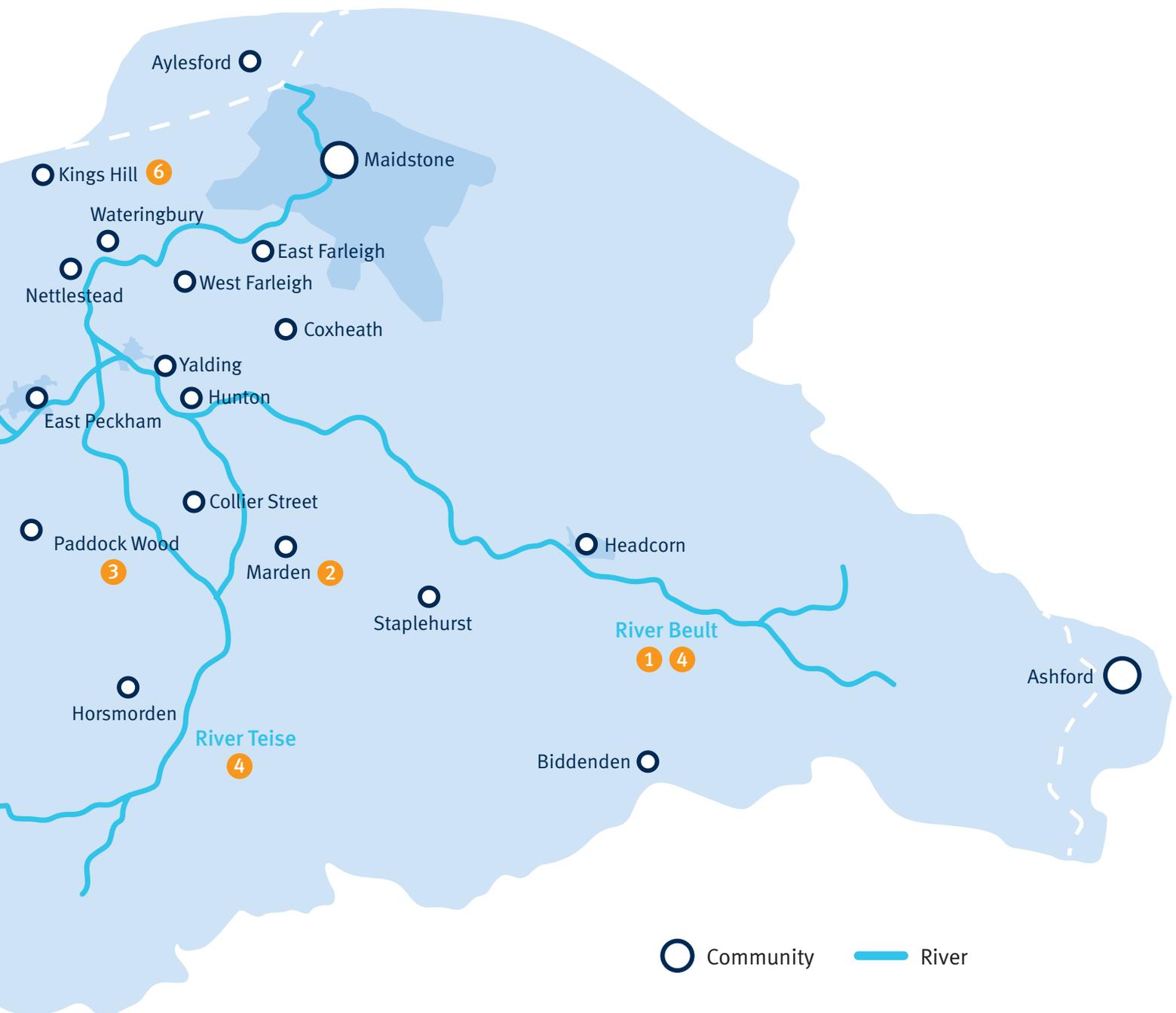
## Location-specific actions

- 1 Work with landowners, local partners and groups to agree options to improve the River Beult SSSI for people and wildlife, including ways to slow flood flows.
- 2 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.
- 3 Investigate opportunities to use natural flood risk management techniques to reduce flood risk in Paddock Wood and Ightham.
- 4 Explore how we can use the Catchment Sensitive Farming approach to provide advice to farmers about managing water on-farm.
- 5 Investigate restoring areas of wet heathland in Ashdown Forest to hold floodwater in the upper catchment.
- 6 Explore using natural flood management techniques to slow the flow in the West Kent Woods.



### Catchment-wide actions

- Work with partners to consider how our annual maintenance work can support natural flood management measures where they help to reduce flood risk.
- Invest in Countryside Stewardship agreements in the catchment to improve water quality and reduce run-off and erosion.
- Identify priority sub-catchments where natural flood management techniques will achieve greatest benefit in reducing flood risk in the catchment.
- Work with local communities and landowners in priority sub catchments to design and deliver natural flood management schemes which will test land-management techniques.
- Develop a funding strategy to identify and secure additional resources for natural flood management measures across the catchment.
- Work with landowners and tenants to build understanding of the wider benefits of natural flood management techniques.
- Identify and develop natural flood management case studies from across the country. Use local projects to demonstrate the techniques to slow the flow of flood water and build landowner support.



# Community Resilience: key actions



It is not always possible to prevent flooding. However, we need to do all we can to reduce the risk of flooding and to help people after a flood.

It is essential that residents and businesses are aware of their flood risk and know what they can do to reduce the impact flooding could have on them. Working with the Kent Resilience Forum, we are working to raise awareness of flood risk and build individual preparedness. We are developing emergency plans to ensure local communities are ready to respond, stay safe and identify community measures to reduce the impact of flooding. We are also offering advice and information to support communities following a flood so that they can clean up and recover sooner.

More information can be found on the gov.uk website by searching ‘What to do before, during and after a flood’.

As Category 1 Responders\*, many organisations in the partnership work to help individuals and communities to plan for and respond to emergencies. A key aspect of this theme is to bring the flood risk work of all organisations together so that individuals understand what organisations will do in a flood, and what they can do to help themselves and their community.

We will use the Kent Prepared website to provide a central source of information to supply information about flood risk, provide templates and resources to help people, businesses and communities prepare, and signpost individuals to more information, including signing up to the Environment Agency’s free Flood Warning Service.

Flooding affects areas differently and each community needs an action plan tailored to their specific needs. We will continue to work with Parish Councils and community groups to:

- Build their understanding of the types and sources of flooding in their area and share this information with their communities
- Help them complete their own community flood plans and run exercises to test them
- Recruit, train and maintain engagement with new and existing volunteer flood wardens

We know that many people have questions about how the existing flood defences and assets across the catchment are operated to reduce flood risk to homes and businesses without increasing risk to others. The Partnership is compiling a register of flood risk assets in Kent and will work with communities to build understanding about which organisation owns which assets and how they are operated during flood events.

Many assets and drainage structures are owned by individuals and we also want to build understanding of the rights and responsibilities of these asset-owners and empower them to carry out their own maintenance works to help manage flood risk.

*\* Category 1 Responders in the Partnership are: Environment Agency, Kent County Council, Maidstone Borough Council, Sevenoaks District Council, Tonbridge and Malling Borough Council, Tunbridge Wells Borough Council*

## Middle Medway traffic management measures

Homes are not always flooded from the obvious sources. In 2013/14 unfortunately a number of homes were flooded as a result of traffic driving through floodwaters and creating a wave which then flooded their homes.

As part of the Middle Medway Flood Resilience Scheme, Kent County Council are investigating and installing traffic management measures such as road closures to reduce the risk of flooding to homes from road wash. They will use learning from this work to consider other areas in the catchment where traffic management may help to increase resilience to flooding.

# Planning and flood risk management

The purpose of planning is to help achieve sustainable development. Government's National Planning Policy Framework sets out strict tests to protect people and property from flooding and partners use these guidelines when considering planning applications. The National Planning Policy Framework states: "Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere." Many members of the Medway Flood Partnership have a role in planning and flood risk management.

## Role of planning authorities and statutory consultees in managing flood risk



### Local planning authorities

Local planning authorities are ultimately responsible for approving (or refusing) proposals for new development. They are also responsible for carrying out Strategic Flood Risk Assessments. These assess the risk to an area from flooding from all sources, now and in the future, taking account of the impacts of climate change and the impact that land use changes and development in the area will have on flood risk.

These assessments are used to develop Local Plans which set out proposed development and land use for the future. During this process, planning authorities work with the lead local flood authorities and the Environment Agency to consider how flood risk can be reduced or managed at a strategic scale, as well as seeking other environmental protection.



### Lead Local Flood Authorities

Lead Local Flood Authorities, such as Kent County Council, are consulted on planning applications to consider flood risk from surface water. They are also responsible for preparing local flood risk management strategies.

Local planning authorities work with Lead Local Flood Authorities to ensure Local Plan policies are compatible with the local flood risk management strategy.



### The Environment Agency

The Environment Agency leads on managing flood risk from rivers and the sea and are a statutory consultee for any planning applications which lie in high risk flood zones. They review each application to ensure that the applicant has appropriately considered the risk of flooding, and included mitigation measures where necessary.

The Environment Agency is a statutory consultee for Local Plans, Strategic Environmental Assessments and Environmental Impact Assessments as well as applications for development consent orders relating to nationally significant infrastructure projects.

We will continue to encourage developers to have pre-application discussions with planners and the Environment Agency to ensure new development incorporates best practice in managing flood risk. We will also support Town and Parish Councils who are preparing Neighbourhood Plans to consider where sustainable drainage and flooding mitigation measures can be included in their Plans. More information on planning policy can be found on the gov.uk website by searching 'National Planning Policy Framework'.



# Community Resilience catchment map

Here is a summary of the natural flood management actions across the catchment. The complete action text can be found in the full action plan.

## Location-specific actions

- 1 Support communities to establish local flood forums in Headcorn, Ightham and Hildenborough and develop local resilience plans.
- 2 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.
- 3 Recruit, train and maintain engagement with new and existing volunteer flood wardens.
- 4 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. Use learning from this work to consider other places where traffic management may help to increase resilience to flooding.

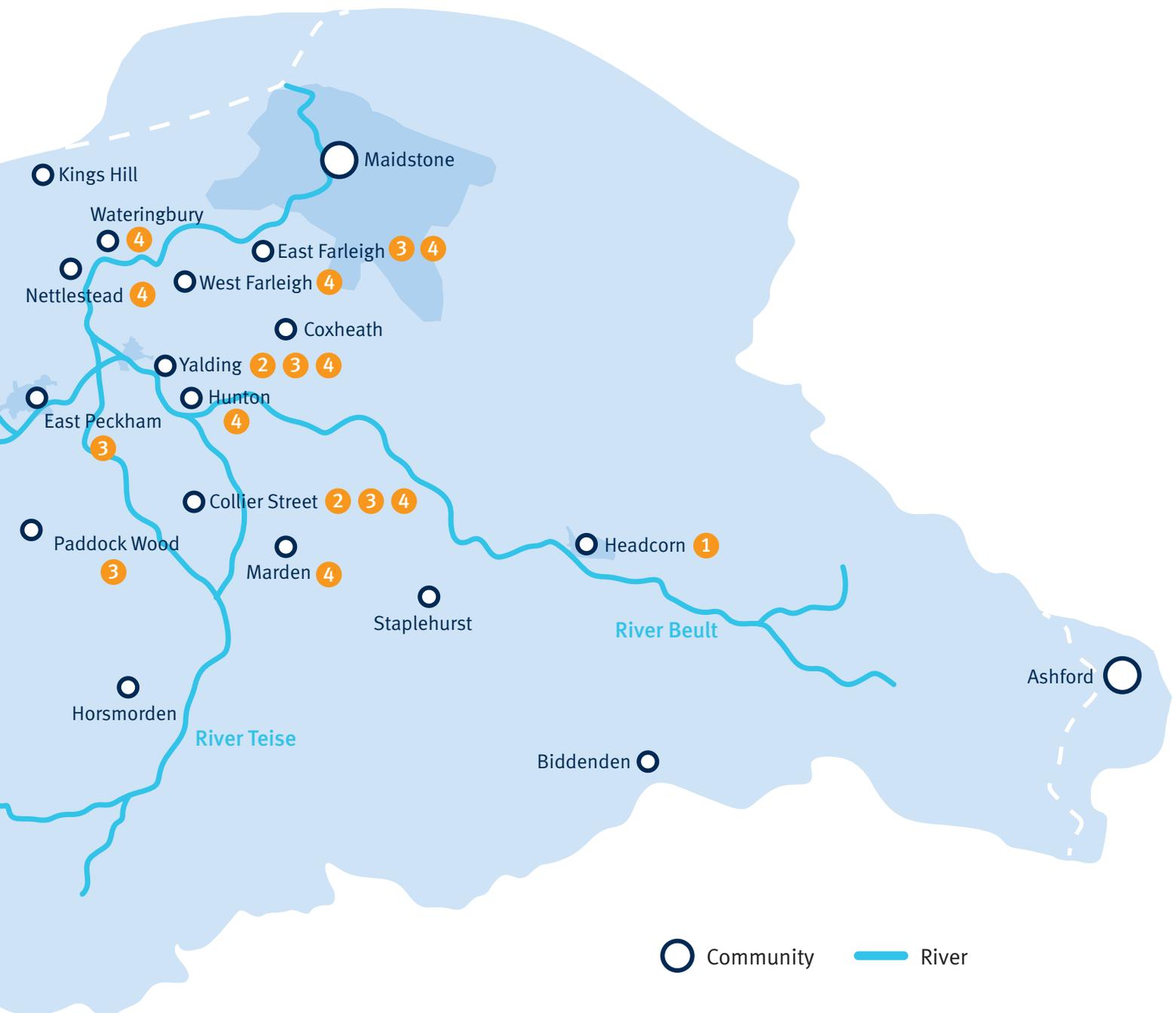
## Kent-wide actions

- Compile a register of flood risk assets in Kent, including high risk culverts, watercourses and other drainage assets, structures and locations. Share this information with local communities so they understand where local assets are and who is responsible for them.
- Develop and publish Flood Risk to Communities documents for all Kent districts and boroughs.
- Recruit, train and maintain engagement with new and existing volunteer flood wardens across Kent.



### Catchment-wide actions

- Run community drop in sessions and workshops to raise awareness of the Medway Flood Action Plan and develop it further.
- Help local communities to build residents' awareness of their individual flood risk and what they can do to prepare and respond.
- Raise awareness of the Extended Floodline Service and work with local councils to encourage them to register for this free service
- Build community understanding about how schemes and structures are operated to reduce flood risk to homes and businesses without increasing risk to others.
- Run training for Parish Councillors and Clerks at risk communities to build understanding of all aspects of flooding. Continue to encourage Parish Councils and community groups to complete and test their own flood plans.
- 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.
- Develop an emergency flood plan template for rural businesses to ensure they know what action to take in a flood. Work with businesses and landowners to promote flood awareness and preparedness and encourage them to complete their own plans.
- Use Kent Prepared website to raise awareness of flood risk to the business community.
- Develop and deliver a rolling exercise programme to test community flood plans.
- 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.
- Continue to encourage developers to have pre-application discussions to ensure new development incorporates flood risk management best practice.
- Encourage Town and Parish Councils who are preparing Neighbourhood Plans to consider sustainable drainage and flooding mitigation measures in their Plans where appropriate.



# Long term aspirations and next steps

The Medway Flood Partnership has already forged a number of benefits. Through closer partnership working we have:

- Developed a better understanding of each other's organisational priorities and where these overlap
- Identified where we have information and tools we can share that help us all
- Identified opportunities for joining up our activities so we can deliver more for local communities

This action plan sets out how organisations will work together to reduce flood risk in the short term. But there is more to do.

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.

Everyone has a role in preparing for and responding to flooding. 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. It is a living document and the partnership will regularly check and review it to make sure that actions are delivered and new information and ideas are incorporated.

We will continue to work together to:

- Embed the work of the partnership into our organisations so that the positive ethos of collaborative working continues into the future
- Improve communications and engagement by adopting a joined up approach to engagement with communities, government and politicians
- Broker strategic solutions to problems identified through the partnership
- Monitor the actions committed to in the Medway Flood Action Plan to share lessons learnt with other communities at risk and to inform the 25 year vision for the Medway

The Medway Flood Partnership have agreed that the Action Plan will be updated every 5 years and kept under continuous review. We will provide information on the progress of the activities within the plan on the gov.uk website. You can find this by searching for 'Medway Flood Partnership'.

Our long term vision for the Medway Flood Partnership is  
“to continue to reduce flood risk and create better places  
for people, properties and businesses.”

Specifically, we want to:

Continue to reduce the number of homes and businesses affected by internal property flooding across the catchment

Ensure our activities support sustainable economic growth across the catchment whilst improving the environment for people and wildlife

Improve peoples' understanding of different types of flooding and the role of different organisations in mitigating flood risk

Work across the catchment to explore and apply a wide range of flood management techniques which support sustainable land use and community resilience

Improve our understanding and evidence base of natural flood management techniques so that they are embedded in sustainable development practices

Improve peoples' awareness of the importance of taking individual and collective responsibility for reducing flood risk and sustaining this awareness years after flood events occur

Use the work of the Medway Flood Partnership to inform policy decisions makers at both local and national levels

Build our collective response to flooding to speed up recovery for communities after a flood event has occurred



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