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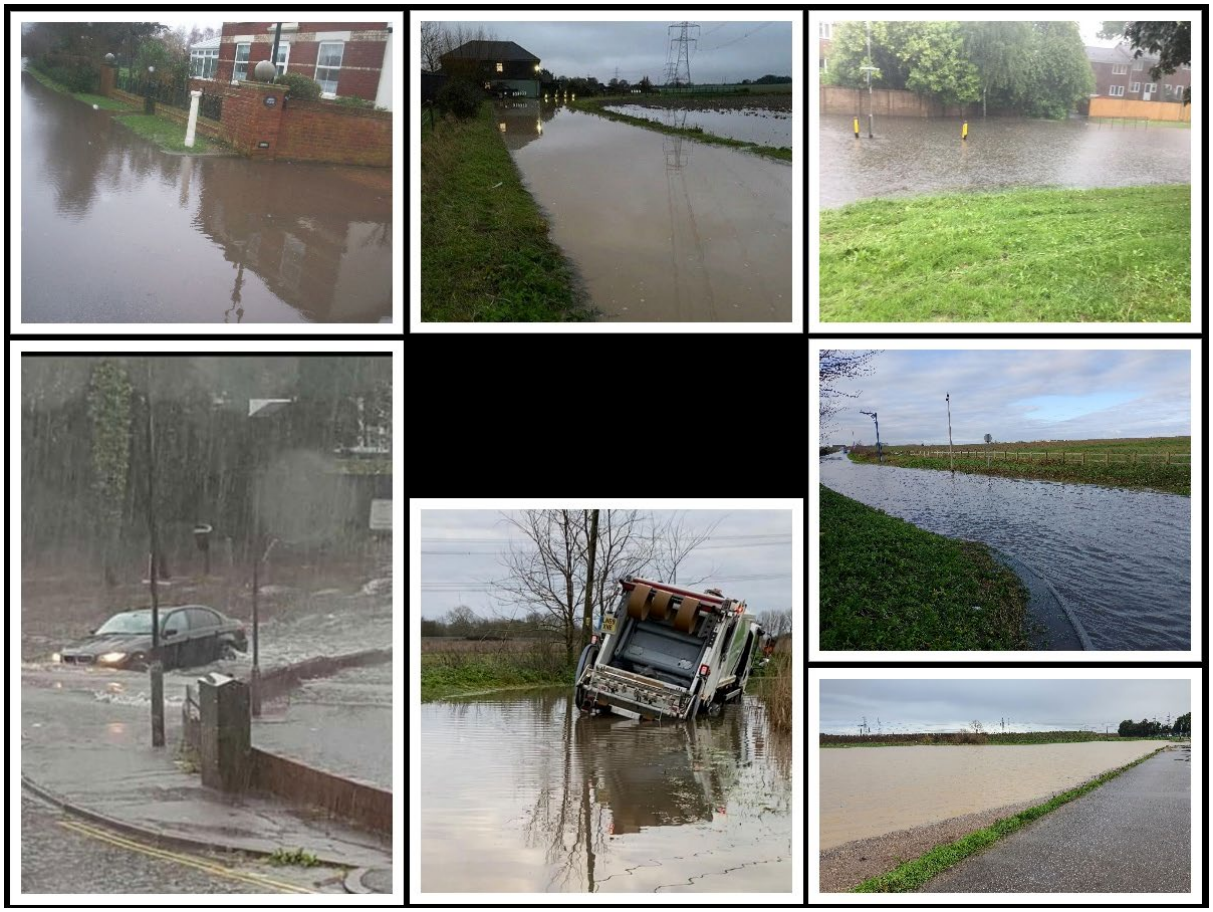

Medway Council

Local Flood Risk Management Strategy

2023 – 2028

Date of Last Review: September 2023

Executive summary

Medway Council recognise that its communities have experienced flooding within recent years, most recently in January 2021 (surface water flooding in connection with a high tide event), and historically. Every flood event teaches us different ways to manage and help communities, maintain, and manage our drainage systems and prepare for future floods with flood-resilient measures. Since its first publication of this document, there have been many changes within our local environment which have meant that there has had to be a change in flood risk management.

Medway Council as a Lead Local Flood Authority is responsible for flood risk management (flooding associated with surface water, groundwater, streams, and ditches).

Following the flooding in January 2021, the Lead Local Flood Authority are committed to updating our previous strategy to include measures that have recently been implemented and recognise areas which are high risk. Medway is a coastal town which seeks to develop its connection to the Dockyard and its coastal paths within the Marshes.

The purpose of this strategy is to outline how Medway Council will approach Flood Risk Management over the next 5 years. This strategy sets out the aims, objectives, actions, and outcomes, which are supported by National Policy and the Environment Agency (EA). Over the next 5 years, we will be focusing on how Medway can become more resilient to flooding and create protocols and maintenance schemes to be able to prepare for future flood events, which are likely to increase with Climate Change.

Medway Council produced a local strategy in July 2014 that set out the local Flood Risk Management for the region. The main purpose of this strategy was to improve understanding of local flood risk within the Medway region and help provide an evidence base for improvements. From this strategy and the measure that have been implemented since the LLFA now have a greater understanding of flood risk within Medway and areas which require further attention.

Additionally updates to policies within National Planning have also driven this update requirement.

This Local Flood Risk Management Strategy is a statutory document required but County and Unitary authorities under the Flood and Water Management Act 2010 (FWMA 2010). This Strategy sets out to achieve the following.

- Produce a summary of Local Flood Risk
- Identify the roles and responsibilities of the Risk Management Authority (RMA)
- Highlight the position of Medway Council as the Lead Local Flood Authority.
- Set out the National and Local measures and objectives for managing flood risk.

- Identify potential funding sources.

Using the objectives and measures identified within the Local Strategy, flood protection, prevention and efficient responses to flooding can be implemented to reduce the local flood risk and the potential impacts of flooding within Medway.

If you would like more information about Flood Risk Management in Medway, or if you would like to request a copy of this document in an accessible format, please contact us using the following information.

Telephone: 01634 333 333

Email: Floodrisk@medway.gov.uk

Address: Flood Risk Team, Planning and Regeneration, Gun Wharf, Dock Road, Chatham, ME4 4TR

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1. Introduction

1.1 What is a Local Flood Risk Management Strategy?

1.1.1 As highlighted within the Executive Summary the Flood and Water Management Act 2010 (hereafter referred to as the FWMA) places a responsibility upon Local Authorities, as Lead Local Flood Authorities (LLFAs), to develop, maintain, apply, and monitor a strategy for Local Flood Risk Management (referred as a 'Local Strategy' from this point).

1.1.2 It should be highlighted that not all flooding can be prevented, but the LLFA have used historic events, strategies, modelling, and reports to increase the level of understanding surrounding Flood Risk. It is important to ensure that all members of the community are aware of the risk of flooding that they face and recognise the measure that are in place to limit the damage of future flooding.

1.1.3 Medway is a region that is at a high risk of flooding with a large area at risk from both fluvial (river) and pluvial (surface water) and coastal flooding. The region has experienced several major, and minor, flood incidents since the last Flood Risk Management Strategy was produced in 2011.

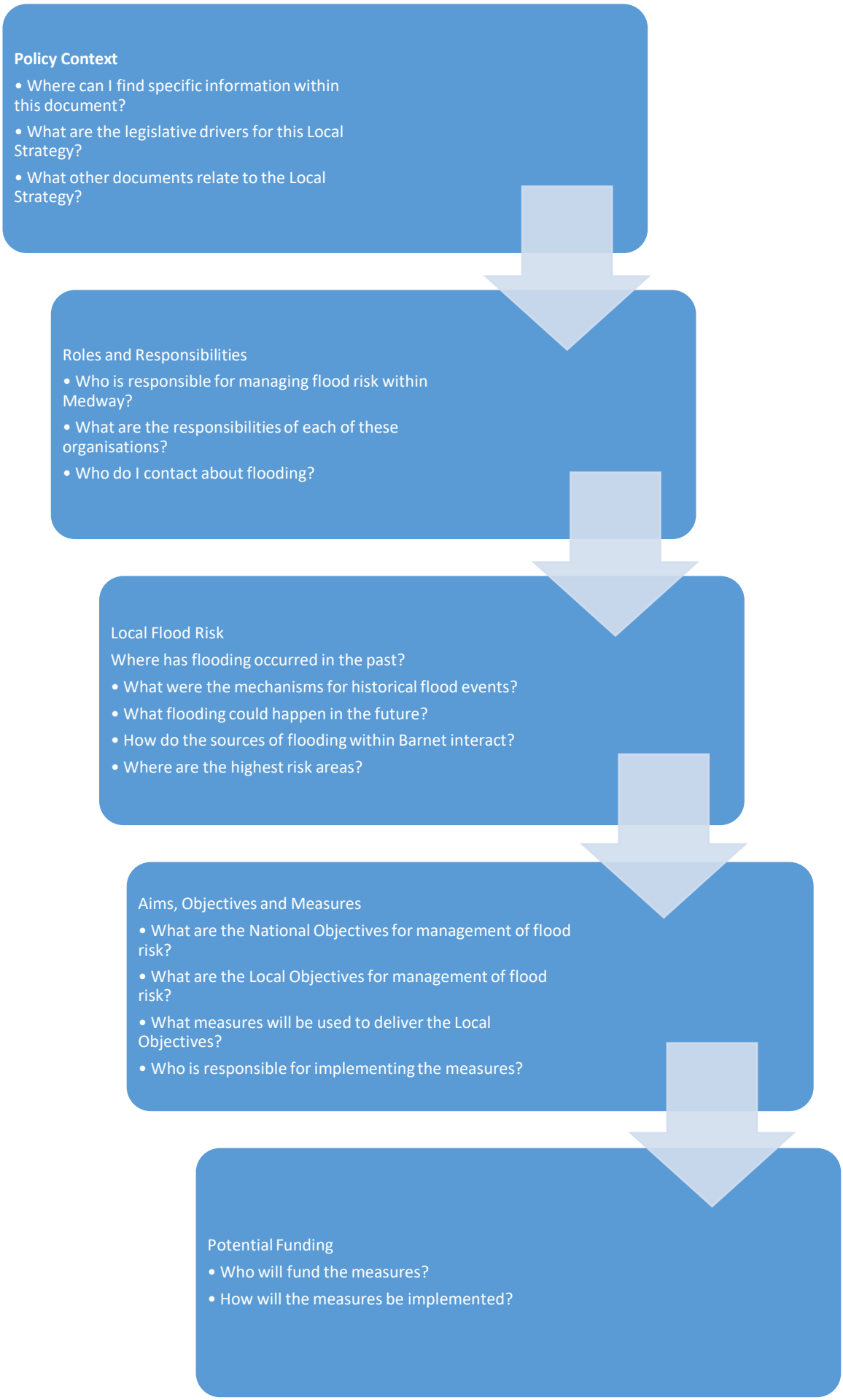
1.2 Strategy Purpose

1.2.1 The Local Strategy is incredibly important in identifying the flood risk of an area and helping manage flooding.

1.2.2 As the LLFA, Medway Council are only responsible for the management of Local Flood Risk from flooding from Surface Water, Ordinary Water Courses and Groundwater. Therefore, this report only addresses these sources of flooding. It should be noted that during other events which do not arise from the above sources the LLFA will assist the relevant agencies to ensure that the issues are addressed as soon as possible.

1.3 Structure of the Local Strategy

1.3.1 To ensure that all elements of flood risk have been assessed within this Local Strategy the following structure has been followed,


Policy Context
• Where can I find specific information within this document?
• What are the legislative drivers for this Local Strategy?
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• What are the Local Objectives for management of flood risk?
• What measures will be used to deliver the Local Objectives?
• Who is responsible for implementing the measures?
Potential Funding
• Who will fund the measures?
• How will the measures be implemented?

1.4 Community Engagement

1.4.1 This document is a draft version of the Local Strategy and will be subject to change following a period of public consultation.

1.4.2 The consultation will offer opportunities for businesses, residents, and stakeholders to provide their views, opinions, and feedback on the Local Strategy. Following this period of public consultation amendments will be made to the Local Strategy in line with any feedback received.

1.4.3 This initial consultation is running from 6th November 2023 to 18th December 2024 and details can be found on the Medway Council Webpage. For further information please contact Floodrisk@medway.gov.uk who will be able to help with any questions.

2. Types of flooding and Flood Risk

2.1 What causes flooding?

2.1.1 Flooding occurs when water inundates land which is land not normally covered by water, typically where there is too much water or because the water is in the wrong place. Some floods develop over days because of water taking its time to reach watercourses and overwhelming them, whilst flash floods generate quickly following intense rainfall or other natural processes.

2.1.2 Flooding is a natural process which can result in several impacts which can be environmental, social, or economic and can negatively impact the human environment. Due to the potential impacts, water and flood risk must be managed to ensure that any impact, especially the negative ones are minimised.

2.2 What is Flood Risk

2.2.1 It is important to understand that flood risk is defined as the chance of flooding happening and the consequences of the event. Within Medway, it is important to note that flooding can happen regularly within high-risk areas but can also happen within areas that have a lower risk. Therefore, it is vital for Risk Management Authorities can fully understand the risk within areas as this can change very quickly.

2.2.2 Although within Medway a primary focus of flooding is related to coastal processes and surface water flooding there are several different types of flooding. It should also be recognised that there are occasions in which multiple forms of flooding can interact which may mean that events are more significant.

2.2.3 Flooding is complex and there is a priority for a joint approach with local Risk Management Authorities to ensure that flood risk is managed, and consequences are addressed as quickly as possible.

2.2.4 The following section highlights the roles and responsibilities of these risk management authorities.

3. Roles and Responsibilities

3.1 Medway Council Responsibilities

3.1.1 As highlighted above Medway Council is the Lead Local Flood Authority and has duties and responsibilities to aid in dealing with events and achieving sustainability across the region.

3.1.2 The LLFA are a Statutory Consultee on Major Planning applications and is responsible for requiring Sustainable Drainage Systems on application to reduce flood risk and improve water quality within the region. In connection to this, the Council can consent works to an ordinary watercourse within our control.

3.1.3 The Council are also responsible for investigating flooding (both internally and externally). To aid with this the Council have a register of structures within their ownership and a register of recently approved planning applications which involve SuDs features to ensure that the LLFA have contact details of relevant management companies in case issues arises.

3.1.4 Additionally, the LLFA have Statutory Powers that allow works to be carried out in association with flood risk to reduce the risk and can also request additional information from other parties to ensure that a better picture of Flood Risk is understood.

3.1.5 Finally, the LLFA are considered a Category 1 responder, which means that the Council has a key role in responding to events and helping where possible. This is in connection with other risk management authorities.

3.2 Overview of Wider Roles

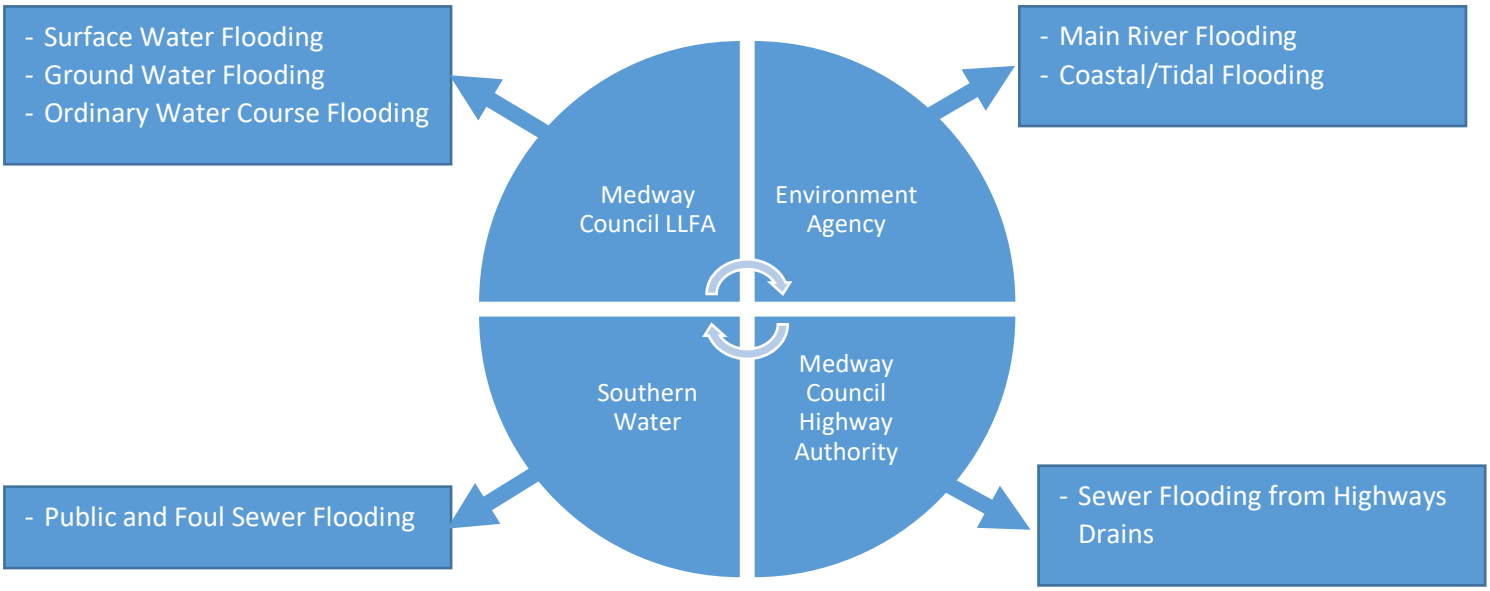
3.2.1 We know that flooding generally occurs during extreme weather events, for example, prolonged rain periods, tidal surges, and storms. Medway is a town that has been built around the river Medway and has a historic background with the Dockyard. However, over recent years it has become more apparent that the effects of climate change, an ageing sewer system which is unable to deal with demand during some extreme events and poor maintenance in some cases, means that the pressure within Medway to deal with flooding has significantly increased.

3.2.2 It is important that dealing with these issues is a joint venture when the issues arise as it cannot solely fall under the responsibility of one authority. Although each flood event is likely to be led by a different authority based on the type of flooding. Each of these is considered a Risk Management Authority.

3.2.3 The Flood and Water Management Act states that an RMA may include the Environment Agency, LLFA, or District Council for an area for which there is no Unitary Authority, an internal drainage board, a water company, and a highway authority. The following RMAs have therefore been identified across Medway Council's administrative area:

- Medway Council (LLFA).
- Environment Agency (EA)
- Medway Council as the Highways Authority.
- Lower Medway Internal Drainage Board (LMIDB).
- Southern Water (SW)

3.2.4 To ensure that each type of flooding can be reported to the correct body the following graphic highlights the relevant parties.



3.2.5 To ensure that Medway Council are communicating with other Local Authorities within the region and gain more expertise and support with flood events the LLFA are members of a variety of partnerships which seek to support and provide solutions for the water industry.

3.2.6 Though not formally designated as RMAs by the FWMA, the following groups or organisations have roles and functions in flood risk management and have therefore been identified within the strategy:

- Regional Flood and Coastal Committee (RFCC)
- SE7 Regional Consortium
- 11 Parish Councils
- Network Rail
- Kent Resilience Forum
- Kent Fire and Rescue Service
- Kent County Council
- Landowners and land managers

- South East Water
- Rochester Bridge Trust
- The public

3.2.7 It is vital that all parties are aware of developing situations that occur to ensure that a joint solution is found where possible.

3.3 Responsibilities of Individuals, Landowners and Communities

3.3.1 it is important to understand that each person has a responsibility to ensure that the risk of flooding to their properties or land is fully understood. Although Flood Risk Management Authorities have an overarching responsibility for the management of different sources of flooding, individual property owner, land owners, business, and communities each has a responsibility to take measures to protect their properties from flooding.

3.3.2 Although the RMAs try to prevent the effects of flooding within an area through preparation, it is the responsibility of each individual to take measures to protect their properties from flooding.

3.3.3 Additionally, there are many cases where riparian owners are responsible for managing flood risk. A Riparian Landowner is someone who owns land or property which is situated next to or located over a river, stream, ditch, culvert, or pipe which forms part of a watercourse.

3.3.4 A Riparian owner is responsible for the section of a watercourse which flows through their land. This responsibility relates to management and maintenance of the watercourse ensuring that there are no obstructions to the water course which may cause flooding. If a watercourse surrounds the boundary of a property the landowner is responsible up to the centre of the watercourse, this does not apply if the watercourse is fully owned by another entity.

3.3.5 Under *the Land Drainage Act (1991), riparian landowners have a legal responsibility to maintain a free passage of water through the section of a watercourse that flows through their land*.

3.3.6 Developers also play a key role in ensuring that flooding is not increased and reduced where possible. During the planning application process, the LLFA assess application that is currently located within a Flood Zone or within an area which is located within a high risk of surface water flooding, to ensure that sustainable surface water drainage is included within the design which can reduce the amount of water able to enter the drainage system during a rain event but ensuring the water is stored on-site within attenuation features.

3.3.7 Application submitted to the council which include ten or more dwellings, have a site area of 1 hectare or more or proposed 1000sqm of floor space are considered a major

application and the LLFA are consulted by the Local Planning Authority to provide comments, advice, and suggested conditions.

3.3.8 Developers are responsible for managing flood risk during development and ensuring that the development can deal with flood events, if they occur, with a probability of 100 years plus 40% to account for climate change.

3.3.9 Application submitted to the council, located within flood zone two or three should be accompanied by a drainage strategy to explain the proposal and a site-specific flood risk assessment. The LLFA ensure that these applications provide the most suitable options to reduce risk.

3.3.10 In addition to this The National Planning Policy Framework (NPPF) set out the Government's planning policies for England and how these will be applied. Section 14 of the NPPF sets out the approach for meeting the challenge of climate change, flooding and coastal change and highlights the role that Local Planning Authorities must ensure that inappropriate development in areas at risk of flooding is avoided by directing development away from areas at highest risk.

3.3.11 Planning Policy Guidance (PPG) accompanies NPPF. Flood Risk and Coastal Change PPG advises on how planning can specifically take account of the risks associated with flooding and coastal change in plan-making and the application process.

3.3.12 The NPPF states that Local Planning Authorities should work with LLAs to secure Local Plan Policies compatible with the Local Flood Risk Management Strategy in consultation with the Environment Agency, Lead Local Flood Authority, emergency responders and internal drainage boards where appropriate.

4. Policy Context

4.1 Policy and Legislation

4.1.1 Medway has experienced several flood events which have ranged in severity. Nationally there have also been several events that have shaped the legislation on how flood risk is approached.

4.1.2 Flood and Water Management within Medway is directed by National and Local Policies and legislation along with technical studies, modelling and knowledge of the area which has been gained during historic flood events.

4.1.3 The following policies and legislation have been used to ensure that every region within the United Kingdom has an UpToDate Local Strategy to combat flooding.

4.2 National Policies and Legislation

Relevant Legislation	
The Pitt Review 2008	In 2008, Sir Michael Pitt published a report entitled 'Learning Lessons from the 2007 Floods'. This report outlined the need for changes in the way the UK is adapting to the increased risk of flooding. This report highlighted 92 recommendations on the existing flood management situation and included details on how Risk Management Authorities should be more proactive in preparing for future flood events.
Flood and Water Management Act (2010)	The Flood & Water Management Act (FWMA) makes provision for better, more sustainable management of flood risk and establishes strategic responsibility in managing flood risk. The FWMA establishes the role of the Council as a Lead Local Flood Authority (LLFA) and sets out a range of powers and responsibilities for the LLFA (and others), such as the duty of all flood risk management authorities to cooperate and provide Lead Local Flood Authorities (LLFA) and the Environment Agency with a power to request information required in connection with their flood risk management functions. Section 9 of the FWMA requires LLFAs to develop, maintain, apply, and monitor a strategy for local flood risk management in its area. This is the basis for the Local Strategy
Flood Risk Regulations (2009) and EU Floods Directive (2007)	The Flood Risk Regulations (FRR) adjusted the European Union (EU) Floods Directive into English and Welsh Law. This established a framework for assessing and managing flood risk, aimed at reducing the negative impact of flooding on human health, the environment,

	cultural heritage, and economic activity across the European Community. This was developed in response to a range of extreme flood events. This required the creation of a preliminary assessment to be completed by 2011 to highlight high-risk areas.
The Land Drainage Act (1991 and amended in 1994)	The Land Drainage Act 1991 requires that a watercourse be maintained by its owner in such a condition that the free flow of water is not impeded. If a riparian owner fails to carry out his responsibilities under the Land Drainage Act, or if anyone else causes a watercourse to become blocked or obstructed, the Council have powers of enforcement by serving a notice under the Act. If this is ignored, the Council concerned may carry out the necessary work itself and then recharge the person responsible for the full cost incurred.
Water Resources Act (1991)	This Act aims to prevent and minimise the pollution of water. The policing of this act is the responsibility of the Environment Agency.
EU Water Framework Directive (2000)	This Directive established a community framework for the protection of surface waters and groundwater across the EU. It aims to provide a common approach with common objectives, principles and basic measures designed to prevent any further deterioration of surface and ground waters and to protect and enhance the quality and quantity of aquatic ecosystems and, regarding their water needs, terrestrial systems.
Strategic Environmental Assessment Directive (2001)	The Strategic Environmental Assessment (SEA) Directive applies to a wide range of public plans and programmes that can produce environmental effects.
Civil Contingencies Act (2004)	The Civil Contingencies Act established a new legislative framework for civil protection in the United Kingdom. It imposes a clear set of roles and responsibilities on those organisations with a role to play in preparing for and responding to emergencies. Local authorities are Category 1 responders under the Act.
Climate Change Act (2008)	The Climate Change Act sets up a framework for the UK to achieve its long-term goals of reducing greenhouse gas emissions and to ensure steps are taken towards adapting to the impact of climate change.
Conservation of Habitats and Species Regulations (2010)	The objective of the Habitats Directive is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora. The Directive highlights the details for the protection, management and exploitation of such habitats and species.
The Localism Act (2011)	The Localism Act contains a wide range of measures to devolve more powers to councils and neighbourhoods and give local communities greater control over local decisions like housing and planning.
National Planning Policy Framework (2012) (Updated in 2021)	The NPPF was created by the Department for Communities and Local Government (DCLG) and outlines the government policies on the most suitable type of development. This document considers many issues and includes details on sustainability, climate change and flood risk. NPPF states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at the highest risk (whether existing or future). It is recognised that this is not always possible especially as large areas of Medway are located within Flood Zones 2 and 3. To address this the NPPF sets out how to approach decisions about development in high flood-risk areas and reduce the risk of flooding as much as is reasonably

	possible. Strategic policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources.
The 25-Year Environment Plan, 2019	The Plan was published in 2019 and laid out the vision for a greener future to improve the environment. Both flood risk and resilience are vital in ensuring long-term sustainability and resilience.
The Environment Act 2021	The Environment Act seeks to protect and enhance the future environment. The Environment Bill puts in place measures to tackle storm overflows and the adverts impact on the environment. This seeks to ensure collaboration between partners and water companies to ensure that infrastructure is suitable for decades to come. This allows for monitoring, compensation, creation of new facilities and amendments to existing facilities where required.

4.3 Local Policies and Legislation

4.3.1 To ensure that Medway Council can monitor and improve flooding within the region the following Local Policies and Legislation have been created. The documents in the below table should be read in connection with this Strategy.

Relevant Legislation	
North Kent Rivers Catchment Flood Management Plan (CFMP) (December 2009)	The North Kent Rivers CFMP was published by the Environment Agency in 2009 and sets out policies for the sustainable management of flood risk over the long term (50 to 100 years) taking climate change into account. More detailed flood risk management strategies for individual rivers or sections of rivers sit under specific sub-areas and policy units. The CFMP emphasises the role of the floodplain as an important asset for the management of flood risk, the opportunities provided by new development and regeneration to manage risk, and the need to re-create river corridors so that rivers can flow and flood more naturally. The CFMP will be periodically reviewed, approximately five years from when it was published, to ensure that it continues to reflect any changes in the catchment
Medway Council Preliminary Flood Risk Assessment (PFRA) (September 2017)	The preliminary flood risk assessment (PFRA) and flood risk areas (FRAs) for Medway Council were reviewed in 2017, using all relevant current flood risk data and information. Changes to the assessment of risk, since the preliminary assessment reports were published in 2011, provided the Council with additional information to be able to focus on flood risk areas within the Medway Region.
Medway Council Strategic Flood Risk Assessment (SFRA) (Updated 2021)	The Strategic Flood Risk Assessment was updated in 2021 to bring the planning context and flood risk information up to date and reflect the changes in policy and legislation. It is also expected that the SFRA will guide development within the Local Plan, once adopted. The main objective of the strategy is to. - Identify the risk from each source of flooding at key locations within Medway. - Outline the requirements of the Sequential and Exception Test

	- To State the requirements of the Flood Risk Assessment (FRA) and to guide developers on how to prepare a compliant FRA. - To state the requirements concerning surface water drainage and guide developers on how to complete the Sustainable Drainage (SuDS) proforma, and - Recommend Local Plan Policies concerning the management of flood risk.
Medway Flood Defence Strategy: High-Level Appraisal of Potential Solutions (February 2011)	This study was commissioned to determine the standard of protection and condition of the existing flood defence infrastructure in Medway to inform development and investment decisions. This included an economic analysis to estimate the likely damage costs attributed to flood events on a flood cell basis. Potential flood defence options were appraised to raise the standard of defence throughout Medway. Officers at the Council regularly appraise the levels of protection in line with the report and attend training to ensure that each defence reacts efficiently during a flood event. The most recent training and review is to take place in July 2022.
Medway Estuary and Swale Shoreline Management Plan (SMP) (2022 Update)	The SMP was published in 2010 by the Environment Agency. It provides a large-scale assessment of the risks associated with coastal evolution and presents a policy framework to address the risks sustainably for people and the developed historic, and natural environment. This is regularly updated in line with guidance and support from the Environment Agency. The LLFA is currently working with Partners to ensure that the SMP is up to date and considers changes within the coastline and defence methods to either improve or uphold the defence structure.
Surface Water Management Plans	A SWMP is a plan, which outlines the preferred surface water management strategy in each location. Medway Council have developed a range of SWMP and is developing subsequent SWMPS. in conjunction with other Risk Management Authorities who are responsible for surface water management and drainage in their area. Currently, a SWMP has been created for Hoo and Rainham and will be published with the Local Plan. This document highlights areas that flood and methods that can be taken to reduce flooding and impact on residents within these areas. A second SWMP is currently being undertaken for the Stoke area following several significant flooding events that have taken place in recent years. Once finished this will provide the LLFA, Council and relevant partners with the most efficient and effective methods, with evidence, to suitably deal with the flooding problems.
Localised Area Flood Risk Strategies	To ensure that areas which are considered high risk are fully addressed Localised Flood Risk Strategies have been created. Currently, these focus on areas within Hoo, Rainham, Chatham and Strood, areas which are known to be at greater risk of flooding from surface water and pluvial flooding. These reports provide a detailed analysis of each issue within the key areas and potential solutions. The LLFA use these within any planning applications that come forward within the area.

Local Plan 2003	The Medway Local Plan 2003 was adopted and launched on 14 May 2003, replacing the Medway Towns Local Plan 1992 and the Medway Local Plan Deposit Version 1999. Although there are no relevant Local Plan Policies relating directly to flood risk the plan has guided development until now.
Emerging Local Plan	Medway Council are currently in the process of developing their Local Plan. The Local Plan sets out a vision for future development in Medway to ensure that the needs of the area are met through several policies and proposals. It has been ensured that there are several Local Plan policies which relate directly to flood risk and flooding within the region and if adopted these will guide development within the region to ensure that flood risk is reduced for new development and areas which experience flooding already can deal with flooding effectively.

5. Aims, Objectives, Principles and Funding

5.1.1 It is important to recognise that there are several Aims and Objectives that the LLFA use as a basis for strategies and development within Medway. There are two strands of these policies, National and Local Policies, which are responsible for guiding flood risk management.

5.1.2 National objectives are outlined within the National Flood and Coastal Erosion Risk Management Strategy for England. The Environment Agency developed this strategy and is therefore responsible for the correct application of this document. This document aims to ensure that the risk of coastal erosion and flooding is suitably managed by ensuring that a full range of options and solutions are in coordination with other stakeholders and authorities. The implementation of this document by Local Authorities must meet the requirements of the Flood and Water Management Act 2010.

5.1.3 Local objectives are developed in connection with the Council's overarching corporate policies and strategies and therefore applying these to Flood Risk management.

5.2 National and Regional Objectives

5.2.1 The following National Objectives have been used to form this strategy.

1. Working together – This objective seeks to increase the understanding of the risk of flooding and coastal erosion, working together to put in place a long-term plan which will manage the flooding and make sure that additional plans produced within the council and relevant stakeholders take account of the procedures and measures set out by the Council.

2. Development Control – Assessing development applications within Medway when above one hectare, ten dwellings or located within a flood zone or surface water risk area. The Lead Local Flood Authority comment on applications that are submitted to the council to ensure that suitable Sustainable Urban Drainage is used on site. This careful management ensures that flood risk is managed and reduced where possible.

3. Risk reduction – The Lead Local Flood Authority, the Council and relevant parties are responsible for maintaining and improving flooding within the area, reduction in harm to people through flooding and reducing harm to the economy. This will ensure that there is a reduction in risk to existing properties as well as new properties within the region.

4. Public Awareness improvement – The Council and the LLFA need to ensure that there is an awareness of the risk of flooding, even if reduced, to ensure that the public can take action to ensure that their risks are reduced.

5. Emergency Planning Improvement – Ensuring that there is an improvement in any forecasting, detection or issuing of warnings relating to flooding. Medway has a

proactive Emergency Planning team which responds to warnings and events as they arise.

5.2.2 It is important to recognise although Medway Council are a Unitary Authority it is vital to ensure that there is a connected decision between surrounding authorities and Risk Management Authorities.

5.2.3 It is vital that Risk Management Authorities.

- Have a robust and consistent understanding to flood risk.
- Establish an understanding of each Risk Management Authorities role and responsibility.
- Collaborate in the development of Local Flood Risk Management Strategies
- Ensure that there is a collaboration regarding resources, skills, and capabilities available to manage flood risk, alongside understanding if there are any gaps in knowledge within the local authority.
- Discuss issues and seek advice and guidance from other risk management authorities to be able to resolve flood risk issues.
- Ensure the elected members are fully briefed as to the current progress of the Partnership and ensure that any project which is likely to be put forward for funding to the Southern Regional Flood and Coastal Committees (RFCCs)

5.3 Local Objectives

5.3.1 Medway Council have several Core Values which have been used to develop our local objectives relating to applying Flood Risk Management. These Core Values are shown in the below image.

5.3.2 The core values have been transformed into the following objectives.

1. Healthy and Active Communities

- Reduce the risk of flooding across the region and manage the risk and disruption caused by flooding.
- Ensure that residents of Medway have a better understanding of Local Flooding and Flood Risk to ensure public responsibility for their selves and properties.

2. A Clean and Green Environment

- Medway Council announced a Climate Emergency in 2019. The LLFA will see to work with the LPA and developers to ensure that flood risk is reduced to meet climate change needs.

3. Delivering new homes to meet the needs of Medway Residents

- Assess development to ensure that flood risk is not increased with development and ensure that any opportunities are taken by the LLFA, LPA and developers to reduce flood risk.

5.3.3 The LLFA seeks to achieve these objectives through this local strategy. Increased flood risk can significantly affect this any of the above and fully understanding the risks of flooding and how they can be reduced is vital.

5.4 Potential Funding

5.4.1 The effective practical implementation of flood risk management measures requires adequate resources both for the management and response activities of the LLFA as well as for capital projects. The LLFA recognises that to fully implement this plan and ensure that flood risk in Medway is maintained, reduces, and improved where possible significant funding will be needed from third parties for sufficient development.

5.4.2 The LLFA are aware of several different funding methods and sources which can be applied to improve flooding risk within the area. It should be noted that funding is not guaranteed and is often allocated when there is a strategic nature to development in reducing risk to communities. The most common forms of funding that the LLFA can apply for are.

- Flood and Coastal Erosion Risk Management Grant in Aid (GIA) is funding for flood risk management schemes which will potentially reduce flooding.
- Local Levy – Regional Flood and Coastal Committee funding is allocated for schemes which meet strategic requirements to improve flood risk.
- S106 – Section 106 requests can be placed on development that is approved to ensure that suitable defence measures can be installed, or existing defences improved to reduce the flood risk within the development area and the surrounding area.
- DEFRA Grants - These are either allocated directly to support the introduction of new legislation and practices or made available for local authorities to submit grant applications for funding for specific Government schemes.

- LLFA Funding – Each year the LLFA is allocated funding which they can allocate to specific schemes which have a strategic nature. Additionally, the LLFA can receive additional funding from third parties that are interested in helping.

5.4.3 It is recognised that a single funding stream is not likely to cover the entire cost of a scheme and therefore multiple funding schemes may be relied upon to ensure that flood risk is reduced to a suitable level.

6. Local Flood Risk

6.1 Overview

6.1.1 This section provides an overview of local flood risk across Medway. The information included within this section is based upon previously completed studies and new flood risk information generated specifically to inform the strategy.

6.1.2 Over the last few years there have been several flood events which have significantly impacted the Medway Area. As Highlighted, Medway Council is a Risk Management Authority and as an RMA there is a responsibility to monitor and record flood events as well as find the most suitable flood risk reduction schemes.

6.2 Historical Records

6.2.1 Medway Council has maintained records of flooding events for several years. These are typically based on reports of flooding made by members of the public or identified by the responsive maintenance wardens in the Highways department. To date, the type of information captured typically includes the following fields:

- Date
- Address
- Incident type (burst water main, highway flooding, sewer flooding)
- Damage caused/clean up time.
- Other relevant information from the informant

6.2.2 The Flood and Water Management Act places a duty on LLFAs to investigate and record significant flood events. Medway Council have a formal method of flood incident recording to ensure that records are captured and reviewed to enable the identification of significant flood events.

6.2.3 In addition to records held by Medway Council, Southern Water also hold records of sewer flooding. These can be obtained from Southern Water.

6.3 Climate Change and Increasing Flood Risk

6.3.1 It is important to recognise that Climate Change is happening at an unprecedented rate. In 2018 the UK Climate Projections (UKCP 2018) presented a range of scenarios about the changing climate up to 2100.

6.3.2 Primarily, in terms of flood risk, it is expected that average summer rainfall could decrease by up to 47% by 2070 and there could be up to 35% more rainfall within the winter. Any rainfall will likely take place over a shorter period and be more intense, which could in turn increase the risk of surface water flooding.

6.3.3 Additionally, with the likely increase in Surface water flooding, the projected sea level rise means that the increase of many sources of flooding is expected to significantly affect everyone. We are expecting to see an increase in both frequency and magnitude of extreme water levels affecting the coastline.

6.3.4 Medway Council announced a Climate Emergency in 2019 which ensures that Medway Council are committed to taking action to raise awareness of issues, reduce emissions and ensure that changes are implemented from the highest point down. This is regularly updated, and further information can be found on Medway Councils Website.

6.3.5 To ensure that any proposed development can suitably deal with the potential flooding related to climate change the LLFA requires modelling to be undertaken in line with the Flood Estimation Handbook (FEH) showing analysis of a storm measuring 100 years plus 40 % for climate change events.

6.4 Surface water flooding

6.4.1 As shown within the initial LFRMS detailed surface water modelling was undertaken to inform this strategy to provide a greater understanding of the risk of surface water flooding in Medway. With the implementation of development within Medway and other strategies, such as the surface water management places there is a better understanding of the mechanisms of flooding within the region.

6.4.2 As highlighted in previous sections of this report surface water flooding from short and intense storms can significantly affect urban areas where drainage systems may not be able to deal with the significant rainfall and are overwhelmed or overloaded. Currently, there are a range of properties across Medway that are at High Risk of Surface Water flooding.

6.4.3 Medway Council Lead Local Flood Authority has undertaken several studies and strategies to assess flood risk within specific high-risk regions. The Council currently have Surface water Management plans in place for not only the entirety of Medway but on a specific level for Chatham, Rainham, and Hoo and is currently working on a management plan for Strood and Lower Stoke.

6.4.4 The modelling that is being undertaken has ensured that all results have been produced here. Any modelling undertaken should be completed to the industry standards. The Flood Estimation Handbook (FEH) should be used for the design of storms and runoff, as opposed to FSR because it represents the most up-to-date rainfall data available.

6.4.5 The *Flood Estimation Handbook* (*FEH*) and its related software offer guidance on rainfall and river flood frequency estimation in the UK. Flood frequency estimates are required for the planning and assessment of flood defences, and the design of other structures such as bridges, culverts, and reservoir spillways. https://www.ceh.ac.uk/services/flood-estimation-handbook

6.4.6 MicroDrainage outputs (or other industry-appropriate software) should be provided for the critical duration for a 2-year, 30 years and 1 in 100-year + 40% intensity climate

change scenarios and demonstrate that the system can half drain within 24 hours where relevant for all development proposed and assessments which are undertaken.

6.4.7 Additionally for all new development Urban creep, whereby the permeable surfaces are converted to impermeable over time should be considered as part of the design calculations. In this instance, it is recommended that an additional 10% impermeability is included.

6.4.8 The most up-to-date mapping relating to flooding can be accessed through the Environment Agency at the following link https://check-long-term-flood-risk.service.gov.uk/map. This provides an overview of flooding relating to tidal risk as well as surface water risk.

6.4.9 The Preliminary Flood Risk Assessment undertaken in 2011 estimated that 41,000 properties (of which approximately 35,700 are residential properties) would be at risk of surface water flooding. The surface water modelling undertaken estimated that 24,300 properties are at risk (of which 14,200 are residential), representing a significant reduction due to the model refinements. Both estimates are based on the 0.5 % AEP worst-case scenario.

6.4.10 Before approving the outputs of the hydraulic modelling, the results were verified against historic records of flooding. These provided a good correlation and a useful comparison from which to measure surface water flood risk in Medway. The historic records indicate that on average there have been three counts of internal flooding affecting separate properties per year in Medway.

6.4.11 It is recognised that there is uncertainty associated with the derivation of the estimates. To improve our understanding of surface water flood risks (and other sources of flooding), as highlighted above specific Surface Water Management Plans (SWMP) have been undertaken to establish more accurate estimates. This is included as one of the objectives to deliver the strategy.

6.4.12 Areas for inclusion within the SWMP will include those identified as high risk by the modelling and areas where there are records of historic flooding. This includes but is not necessarily limited to the urban centers of Chatham, Rochester and Strood, as well as rural areas such as Stoke where there is a known problem associated with surface water flooding.

6.4.13 These documents are reviewed against development proposals which are proposed within these regions and for any development schemes which will reduce the risk of flooding to residents of Medway.

6.5 Surface Water Management Plans

6.5.1 As highlighted above Medway Council has undertaken several Surface Water Management Plans to develop possible solutions to flooding. The following options have been highlighted within the SWMPs, but it should be noted that these may not be

implemented if more suitable schemes involving funding and additional third-party assets become available.

Surface Water Management Plan Options and Actions				
	Description	Option / Action	Responsible	Indicative costs
Strood				
1	Attenuation storage along surface water flow paths within the study catchment, such as along Darnley Road	Action	LLFA / Highway Team	£180-£270k including survey costs.
2	Rainwater harvesting on a local scale where possible, both through retrofit solutions and through potential strategic schemes	Option	Developer / LLFA	
3	Highway drainage collection capacity improvements, including the provision of additional drainage gullies in the lower parts of the study area in Strood	Action	LLFA / Highway Team	£7,200-£10,800 per improvement
4	Increase maintenance regimes for high-risk surface water drainage assets	Option	LLFA / Highway Team	
5	Structural modifications to the highway to prevent surface water flow paths from leaving the carriageway, such as in Rede Court Road and Darnley Close	Option	LLFA / Highway Team	
6	Property level protection in areas of high surface water flood risk where alternative mitigation options may not be possible	Action	Developer / LLFA / Home Owner	
Rochester				
1	Attenuation storage along surface water flow paths within the study catchment, such as from the Maidstone Road sub-catchment to the south-west of the junction of Maidstone Road and Ethelbert Road	Option	LLFA	
2	Rainwater harvesting on a local scale where possible, both through retrofit solutions and through potential strategic schemes	Option	LLFA / Home Owner	
4	Highway drainage collection capacity improvements, including the provision of additional drainage gullies along the main flow path to remove surface water from the surface at Cossack Street, Castle Avenue and Rochester Avenue	Action (Favourable)	LLFA / Highway Team	

5	Increase maintenance regimes for high-risk surface water drainage assets	Option	LLFA / Highway Team	
6	Structural modifications to the highway to prevent surface water flow paths from leaving the carriageway, such as in Rochester Avenue and Church Street	Option	LLFA / Highway Team	
7	Creation of an exceedance route through the Rochester Riverside regeneration area to prevent the accumulation of surface water during extreme events in lower Rochester	Action (Favourable)	LLFA	
8	Runoff management from Rochester Riverside regeneration area	Action	LLFA / Developer	
9	Property level protection in areas of high surface water flood risk where alternative mitigation options may not be possible	Option	LLFA / Home Owner / Developer	
Chatham				
1	Attenuation storage along surface water flow paths within the study catchment, such as to the immediate south-west of Kingfisher Drive, to the south of Mitchell Avenue, Hook Meadow playing fields, Tunbury Wood, Capstone Farm, Star Lane, Pattens Lane	Action	LLFA	
2	Rainwater harvesting on a local scale where possible, both through retrofit solutions and through potential strategic schemes	Option	LLFA / Home Owner	
3	Highway drainage collection capacity improvements, including the provision of additional drainage gullies along the main flow path to remove surface water from the road surface	Option	LLFA / Highway Team	
4	Increase maintenance regimes for high-risk surface water drainage assets	Option	LLFA / Highway Team	
5	Structural modifications to the highway to prevent surface water flow paths leaving the carriageway, such as in Dove Close, Hill View Way, Vale Drive, Woodhurst, Boundary Road, Dale Street, Medway Street	Option	LLFA / Highway Team	

6	Creation of an exceedance route and attenuation in the Chatham regeneration area between Chatham Station and the town centre	Action	LLFA / Developer	
7	Property level protection in areas of high surface water flood risk where alternative mitigation options may not be possible, including the lower Chatham flow path around King's Road and Lester Road.	Action	LLFA / Home Owner	
Gillingham				
1	Attenuation storage along surface water flow paths within the study catchment, such as within the grounds of Saxon Way Primary School or to the south of Groombridge Drive	Option	LLFA	
2	Rainwater harvesting on a local scale where possible, both through retrofit solutions and through potential strategic schemes	Option	LLFA / Home Owner	
3	Highway drainage collection capacity improvements, including the provision of additional drainage gullies along the main flow paths such as in Canadian Avenue, Sturdee Road, Toronto Avenue	Action	LLFA / Highway Team	
4	Increase maintenance regimes for high-risk surface water drainage assets	Option	LLFA / Highway Team	
5	Structural modifications to the highway to prevent surface water flow paths from leaving the carriageway, such as close to the junction of Ingram Road and Railway Street close to the Railway station	Option	LLFA / Highway Team	
6	Roof drainage disconnection within the eastern flow path to promote local infiltration where possible	Action	LLFA / Homeowner	
7	Property level protection in areas of high surface water flood risk where alternative mitigation options may not be possible	Action	LLFA / Homeowner	
Hoo St Werburgh				
1	Increased Capacity of the Hoo Stream	Option	LLFA	

2	Increased capacity of the existing southern water storage area	Option	LLFA / Southern Water	
3	Create a new storage area at Hoo Sports Field	Option	LLFA / SEMS	
4	Increase greenfield runoff rates to the 3.33% AEP rate for potential future development groups	Option	LLFA / Developer	
5	Increase Greenfield Runoff Rates to the 1% AEP rate for potential development Groups	Option	LLFA / Developer	
6	Provision of Flood Warnings and/or Alerts for Hoo Stream	Action	LLFA	
7	Continued maintenance of Hoo Stream culverts	Action	LLFA / Highway Team	
8	A rain gauge on the Hoo Stream	Action	LLFA/Highway Team	In Place
Rainham				
1	Change connection location for development site 0847	Action	LLFA / Developer	
2	All potential future development connected to a soakaway	Option	LLFA / Developer	
3	Increase greenfield runoff rates to the 3.33% AEP rate for potential future development groups	Option	LLFA / Developer	
4	Increase Greenfield Runoff Rates to the 1% AEP rate for potential development Groups	Option	LLFA / Developer	
Wider Area				
1	Improved maintenance of existing drainage system	Action	LLFA / Highways Team	
2	Undertake a detailed feasibility study	Action	LLFA / Highways Team	
3	Completion of Public Consultations	Action	LLFA / Highways Team	

6.5.2 Currently options are being progressed for Lower Stoke and this will be added shortly.

6.5.3 As highlighted above, these options are indicative and if taken forward will be fully assessed to ensure that the most viable solution to reduce flooding is used.

6.6 Ageing Infrastructure and insufficient capacity

6.6.1 Medway Councils' drainage system comprises several different elements which are all interconnected. This system comprises sewers, drains and culverts which all have a range of ages. Many of these assets within the region are monitored and maintained by third parties.

6.6.2 It is noted that during weather events there are significant pressures on the infrastructure. The ageing infrastructure is under increasing pressure from increasing impermeable areas. Additionally, with the significant requirement for housing

development within the region in line with Government statistics the total volume of water entering the system is increasing.

6.6.3 As a result of the increasing volume of water entering the system the capacity of the system is reached a lot quicker and therefore some areas have experienced significant flooding from sewers due to the system being overwhelmed

7. Future Reviews

7.1.1 This report is considered a live document which will be reviewed every 5 years on a minimum basis. This will align the review cycle with the requirements of the Flood Risk Regulations (2009)

7.1.2 If required by circumstances an interim update can be undertaken of this report. For example, if there is a significant flood event or any further information is obtained relating to flooding.

7.1.3 Any changes made to this report with being advertised through the correct procedures.