

# LOCAL FLOOD RISK MANAGEMENT STRATEGY

## PREPARED FOR THE LONDON BOROUGH OF WANDSWORTH



Authored by Lauren Barraclough  
Reviewed by: Tom Whitworth  
Approved by Darragh Creegan  
Date May 2022  
Version 2.0



## REVISION HISTORY

Version	Date	Description	Prepared	Approved
1.0	Feb 2022	First draft	LB	DC
2.0	May 2022	Final version for public consultation	LB	MM

## LIMITATIONS

Metis Consultants Limited (Metis) have prepared this Report for the sole use of the Client. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by Metis. This Report is confidential and may not be disclosed by the Client nor relied upon by any other party without the prior and express written agreement of Metis.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by Metis has not been independently verified by Metis, unless otherwise stated in the Report.

The work described in this Report is based on the conditions encountered and the information available during the period of production. The scope of this Report and the services are accordingly factually limited by these circumstances.

Metis disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to Metis' attention after the date of the Report.

Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. Metis specifically does not guarantee or warrant any estimate or projections contained in this Report.

The Client should take appropriate professional legal advice prior to implementing any recommendations made within this Report that may impact on the legal exposure of the Client.

## COPYRIGHT

© This Report is the copyright of Metis Consultants Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

## CONTACT DETAILS

Metis Consultants Ltd.  
2 Sheen Road, Richmond  
London, TW9 1AE  
t. 020 8948 0249  
e. [info@metisconsultants.co.uk](mailto:info@metisconsultants.co.uk)  
w. [metisconsultants.co.uk](http://metisconsultants.co.uk)

## EXECUTIVE SUMMARY

The purpose of the London Borough of Wandsworth (Wandsworth)'s Local Flood Risk Management Strategy (LFRMS) is to set out a plan of action for managing local flood risk within the Wandsworth borough. The LFRMS will establish how the Lead Local Flood Authority (LLFA) and Risk Management Authorities (RMA)s will deliver a collaborative approach to flood risk management.

The Wandsworth borough is vulnerable to many types of flood risk including fluvial, tidal, surface water, groundwater, sewer and artificial sources. When managing these risks there are different responsibilities for different RMAs. The LLFA is responsible for the management of flood risk from ordinary watercourses, groundwater and surface water. The LLFA may also assist with the management of surface water flood risk on public highways, alongside Wandsworth Council's Highways department. Other areas of flood risk management are managed by the Environment Agency (EA), Thames Water (TWUL), Transport for London (TfL) and National Highways, as well as landowners. The shared responsibility of flood risk is why effective communication is important for local flood risk management.

Local information and current international, national, regional and local policies have been collated to provide a strong background to the LFRMS strategic objectives. These objectives observe recent changes in climate change predictions and other strategic aims by Wandsworth Council that can be incorporated into flood risk management. The shared staffing arrangement between the London Borough of Richmond upon Thames (Richmond) Council and Wandsworth Council means that both the Wandsworth LLFA and Richmond LLFA functions are managed as one. To allow for consistent flood risk management between the two boroughs joint LFRMS strategic objectives have been produced, these are:

- A. To improve our knowledge and understanding of the risk of flooding and the interactions between different sources of flooding across the London Borough of Wandsworth.
- B. To encourage appropriately mitigated development across the London Borough of Wandsworth by promoting sustainable multi-beneficial solutions to contribute to wider social, economic, and environmental outcomes.
- C. To seek and identify funding and resources available for a targeted approach to flood risk management.
- D. To proactively manage sources of local flooding to homes, critical infrastructure, and transport networks by establishing and maintaining partnerships with key organisations, including the Environment Agency and Thames Water.
- E. To work with Risk Management Authorities to raise awareness of flood risk with communities, residents, and businesses, and how they can take action to protect themselves and their property by contributing to the management and reduction of flood risk.
- F. To use knowledge of flood risk and climate change projections to inform and adapt the emergency response to flooding within the London Borough of Wandsworth.

The LFRMS strategic objectives are targets for the LLFA to better manage changes in local flood risk. These are supported by a list of appropriate actions detailed within the LFRMS Action Plan. This Action Plan and the LFRMS have been developed for use over the next six years. Any adaptations made during this time will be to reflect policy, guidance or legislative changes. The LFRMS proposes these actions in order to appropriately adapt its management to flood risk to support improved resilience and sustainability within the Wandsworth borough. Wandsworth Council acknowledges the need for action against climate change to continue to acknowledge and understand the latest findings on climate change predictions in order to best manage flood risk in the local area. The LFRMS proposes to use sustainable flood risk management practices such as Sustainable Drainage Systems (SuDS), Natural Flood Management (NFM) and Property Flood Resilience (PFR), and to look for opportunities to implement such practices. This is currently underway through several Critical Drainage Area (CDA) feasibility studies within the Wandsworth borough.

Stakeholders involved in the delivery of the LFRMS have been invited to participate in a public consultation process for the LFRMS and its associated documents. This is to ensure that the LFRMS, Action Plan, Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA) have considered a range of interests within the local community.

# CONTENTS

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1	WHAT IS FLOODING	1
1.2	BACKGROUND	1
1.3	PURPOSE	2
1.4	LFRMS STRUCTURE	2
1.5	LEGISLATIVE CONTEXT	3
1.6	STRATEGIC OBJECTIVES OF THE LFRMS	7
1.7	OTHER STRATEGIC DOCUMENTS	9
1.7.1	STRATEGIC ENVIRONMENTAL ASSESSMENT	9
1.7.2	HABITATS REGULATIONS ASSESSMENT	10
<b>2</b>	<b>ROLES AND RESPONSIBILITIES</b>	<b>11</b>
2.1	RMAS AND OTHER STAKEHOLDERS	11
2.1.1	WANDSWORTH COUNCIL	12
2.1.2	THE ENVIRONMENT AGENCY	13
2.1.3	THAMES WATER	13
2.1.4	TRANSPORT FOR LONDON	13
2.1.5	CATEGORY ONE RESPONDERS	14
2.1.6	LANDOWNERS	14
2.2	INTERNAL FLOOD RISK GOVERNANCE	14
2.3	LOCAL AND REGIONAL PARTNERSHIP GROUPS	16
2.3.1	SOUTH WEST LONDON STRATEGIC PARTNERSHIP FLOOD GROUP	16
2.3.2	SOUTH LONDON AND SURREY TECHNICAL GROUP	16
2.3.3	THAMES REGIONAL FLOOD AND COASTAL COMMITTEE	16
2.3.4	INTERNAL FLOOD GROUP	16
<b>3</b>	<b>LOCAL FLOOD RISK</b>	<b>17</b>
3.1	LOCAL FLOODING CHARACTERISTICS	17
3.2	TYPES OF FLOOD RISK	17
3.2.1	FLUVIAL FLOOD RISK	17
3.2.2	TIDAL FLOOD RISK	18
3.2.3	SURFACE WATER FLOOD RISK	18
3.2.4	GROUNDWATER FLOOD RISK	19
3.2.5	SEWER FLOOD RISK	19
3.2.6	FLOOD RISK FROM OTHER SOURCES	20
3.3	FLOODING HISTORY WITHIN THE WANDSWORTH BOROUGH	20
3.4	FUTURE FLOOD RISK CONSIDERATIONS	20
<b>4</b>	<b>ADAPTATION AND RESILIENCE TO FLOODING</b>	<b>22</b>
4.1	WHAT IS CLIMATE CHANGE	22
4.2	WHAT IS RESILIENCE AND ADAPTATION	22

<b>4.3</b>	<b>HOW THE LLFA WILL SUPPORT RESILIENT LOCAL COMMUNITIES</b>	<b>23</b>
<b>4.4</b>	<b>GUIDANCE FOR LOCAL COMMUNITIES</b>	<b>24</b>
4.4.1	HOW TO REDUCE THE RISK	24
4.4.2	BEFORE, DURING AND AFTER A FLOOD	24
<b>5</b>	<b>SUSTAINABLE MANAGEMENT</b>	<b>27</b>
<b>5.1</b>	<b>SUSTAINABILITY AND FLOOD RISK MANAGEMENT</b>	<b>27</b>
<b>5.2</b>	<b>STRATEGIES FOR SUSTAINABLE DEVELOPMENT</b>	<b>27</b>
5.2.1	SUSTAINABLE DRAINAGE SYSTEMS	27
5.2.2	NATURAL FLOOD MANAGEMENT	28
5.2.3	PROPERTY FLOOD RESILIENCE	29
<b>5.3</b>	<b>FUTURE PLANS FOR DELIVERING SUSTAINABLE SOLUTIONS</b>	<b>29</b>
<b>6</b>	<b>COMMUNITY AND STAKEHOLDER ENGAGEMENT PLANS</b>	<b>31</b>
<b>6.1</b>	<b>PAST LLFA ENGAGEMENT SINCE PREVIOUS LFRMS</b>	<b>31</b>
<b>6.2</b>	<b>PLANS FOR FUTURE ENGAGEMENT</b>	<b>31</b>
<b>6.3</b>	<b>KEY STAKEHOLDERS</b>	<b>32</b>
6.3.1	PRIMARY STAKEHOLDERS	32
6.3.2	SECONDARY STAKEHOLDERS	33
<b>7</b>	<b>ACTION PLAN FOR DELIVERING FLOOD RISK MANAGEMENT BETWEEN 2021-2027</b>	<b>34</b>
<b>7.1</b>	<b>ACTIONS SINCE THE PREVIOUS LFRMS</b>	<b>34</b>
<b>7.2</b>	<b>BENEFITS AND RESULTS</b>	<b>36</b>
<b>7.3</b>	<b>NEW ACTION PLAN</b>	<b>36</b>
<b>7.4</b>	<b>FUNDING OPTIONS</b>	<b>37</b>
<b>8</b>	<b>CONCLUSION AND NEXT STEPS</b>	<b>38</b>
<b>8.1</b>	<b>CONCLUSIONS</b>	<b>38</b>
<b>8.2</b>	<b>NEXT STEPS</b>	<b>38</b>
8.2.1	PUBLIC CONSULTATION	38
8.2.2	PLANNED ACTION SUMMARY	39
8.2.3	RECOMMENDED NEXT STEPS	39
<b>8.3</b>	<b>MONITORING AND REVIEWING</b>	<b>39</b>
	<b>REFERENCES</b>	<b>40</b>
	<b>USEFUL LINKS</b>	<b>41</b>
	<b>APPENDIX 1 – ACTION PLAN</b>	<b>42</b>
	<b>APPENDIX 2 – SEA SCREENING REPORT</b>	<b>43</b>
	<b>APPENDIX 3 – HRA SCREENING REPORT</b>	<b>44</b>

## FIGURES AND TABLES

<i>Figure 2-1 The threshold criteria for when the LLFA will conduct a flood investigation.....</i>	<i>13</i>
<i>Figure 2-2 Contact information for internal and external RMAs .....</i>	<i>15</i>
<i>Figure 4-1 Information on actions to take before, during and after a flood, summarised from full EA guidance which can be found here .....</i>	<i>25</i>
<i>Figure 4-2 Details on how to report types of flooding in the Wandsworth borough.....</i>	<i>26</i>
<i>Figure 7-1 Timeline of action milestones since previous LFRMS.....</i>	<i>35</i>
 <i>Table 1-1 Summary table of relevant FRM legislation and policies.....</i>	 <i>4</i>
<i>Table 2-1 RMAs responsibilities in managing types of flooding occurrences .....</i>	<i>11</i>
<i>Table 3-1 Number of properties at RoFSW within the Wandsworth borough.....</i>	<i>19</i>
<i>Table 6-1 Stakeholder categories and examples of individual stakeholders .....</i>	<i>32</i>

## ACRONYMS AND ABBREVIATIONS

Abbreviation	Definition
CDA	Critical Drainage Area
CFMP	Catchment Flood Management Plan
DEFRA	Department for Environment, Food and Rural Affairs
DLUHC	Department for Levelling Up, Housing and Communities
DWMP	Drainage and Wastewater Management Plan
EA	Environment Agency
EU	European Union
FCERM	Flood and Coastal Erosion Risk Management
FRMP	Flood Risk Management Plan
FRR	Flood Risk Regulations (2009)
FWMA	Flood and Water Management Act (2010)
GLA	Greater London Authority
HRA	Habitats Regulations Assessment
IPCC	Intergovernmental Panel on Climate Change
LFRMS	Local Flood Risk Management Strategy
LLFA	Lead Local Flood Authority
NFCERMS	National Flood and Coastal Erosion Risk Management Strategy
NFM	Natural Flood Management
NPPF	National Planning Policy Framework
PFR	Property Flood Resilience
PFRA	Preliminary Flood Risk Assessment
RFRA	Regional Flood Risk Appraisal
Richmond	London Borough of Richmond upon Thames
RMA	Risk Management Authority



Abbreviation	Definition
RoFSW	Risk of Flooding from Surface Water
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
SuDS	Sustainable Drainage Systems
SWLSFG	South West London Strategic Flood Group
SWMP	Surface Water Management Plan
TE 2100	Thames Estuary 2100 Plan
TfL	Transport for London
TWUL	Thames Water Utilities Limited
UKCP18	United Kingdom Climate Change Predictions (2018)
Wandsworth borough	The administrative area of the borough
Wandsworth Council	The administrative body of people formally constituted for the London Borough of Wandsworth
Wandsworth town centre	The specific geographical area of Wandsworth town, not referring to the Wandsworth borough
WFD	Water Framework Directive (2000)



# 1 INTRODUCTION

## 1.1 What is flooding

Flooding in its brief definition is the submerging of an ordinarily dry area by an excess amount of water, as defined by the [Flood and Water Management Act 2010 \(FWMA\)](#). In 2020 there were more than 5.2 million properties in England at risk from flooding and coastal erosion as stated in the [National Flood and Coastal Erosion Risk Management Strategy \(NFCERMS\)](#) for England. Flooding can be caused by a multitude of factors including high levels of rainfall, rivers overflowing, rising groundwater and reservoir breaches. However, the definition of flooding does not include the overflow or breaches from sewage treatment works or burst water mains as these are instead covered under the [Water Industry Act \(1991\)](#).

Under the FWMA there are six main types of flood risk. These are fluvial, tidal, surface water, groundwater, sewer and reservoir/ artificial sources, but not all areas are affected by all types of flood risk. According to [UK Government guidance](#), published in October 2021, surface water flooding is the most common flood risk in England, accounting for 62% of all those at risk of flooding. The specific types of flood risk which affect the Wandsworth borough are identified in *Section 3.2*.

The issue of flood risk is one which cannot be fully prevented and with pressures from climate change and sea level rise, flood risk is an issue that is likely to increase in the future without further action. However, there are many methods which can be implemented to aid in effective flood risk management. This Local Flood Risk Management Strategy (LFRMS) is one such document which helps play an important role in managing flood risk for local people, businesses, and the environment. Flood risk can be managed effectively for local communities by identifying the areas at greater risk of flooding and by developing plans to facilitate mitigation measures in reducing the risk of flooding. This creates resilient local communities.

## 1.2 Background

Wandsworth Council's Flood Risk Management Team is appointed the Lead Local Flood Authority (LLFA) for the Wandsworth borough in line with the FWMA. LLFAs are responsible for the management of surface water, groundwater, and ordinary watercourses (defined 'local flood risks'). Under the FWMA, the LLFA are required to produce and maintain a LFRMS. This document is an updated replacement for the existing LFRMS, published in March 2016. The LFRMS and its Action Plan should align with documents such as the NFCERMS for England and all other existing local flood risk planning documents.

This LFRMS is aimed at the LLFA as the main authority responsible for managing local flood risk. Other departments within Wandsworth Council should also be familiar with this LFRMS, namely Development Management, Environmental Services, Parks and Open Spaces, Highways, and Traffic & Transport. Each of these departments will be involved, to an extent, in achieving the statutory LLFA duties and in the management of local flood risk. Other Risk Management Authorities (RMAs) also take on responsibilities for flood risk such as the Environment Agency (EA) which has a strategic overview role on all types of flooding as well as being responsible for flooding from main rivers and the sea. The LFRMS is also targeted towards residents and local businesses as they are directly affected by flooding and are those who will benefit from improved flood risk management. It is also encouraged that

residents, businesses and local landowners act and contribute to the management and reduction of flood risk in their local area.

### 1.3 Purpose

The overall purpose of a LFRMS is to outline how the LLFA and other stakeholders will manage flood risk within their borough. It covers flood risk from local sources such as surface water, groundwater, and ordinary watercourses (small rivers, brooks, and drainage ditches). The LFRMS sets out the LLFA's objectives for managing these flood risks and outlines the actions which will be taken to achieve these, including the creation of a detailed action plan.

The LFRMS aims to manage flood risk in a way that will provide the greatest benefit to the residents, businesses, and environment of the Wandsworth borough. The LFRMS will act as a guide to local flood risk management for the LLFA (and other Council departments), RMAs, and local residents and businesses to ensure all groups are aware of the local flood risk and their responsibilities in managing them.

With the uncertainty regarding flooding affects from future climate change predictions, it is important to develop a flexible and resilient LFRMS. This should consider these uncertainties in order to help reduce the probability and effects of flooding. In addition to recognising that flooding is a naturally occurring phenomenon that will continue to occur.

### 1.4 LFRMS structure

The LFRMS document will take on the following structure:

- **Section 1: Introduction** - Summarises topics covered in the LFRMS and explains the context behind the LFRMS, noting its background and purpose additionally stating the new LFRMS strategic objectives.
- **Section 2: Roles and responsibilities** - Draws attention to the roles and responsibilities of the LLFA and other RMAs. Local and regional partnership groups relevant to local flood risk management.
- **Section 3: Local flood risk** - Provides a background to local flood risk in the Wandsworth borough by exploring historic flooding, present and predicted future flood risks. Here local flooding characteristics are stated together with the specific types of flood risk the Wandsworth borough is vulnerable to.
- **Section 4: Adaptation and resilience to flooding** - States flood risk management links with climate change and summarises differences between resilient and adaptive response strategies. This section provides guidance and the actions the LLFA will be undertaking to support resilient local communities.
- **Section 5: Sustainable management** - Introduces sustainable flood risk management by looking at different strategies. This includes sustainable drainage systems (SuDS), natural flood management (NFM), and property flood resilience (PFR), leading on to future plans for sustainable development.
- **Section 6: Community and stakeholder engagement plans** - Includes actions and engagements since the previous LFRMS and details plans for taking community and stakeholder engagement further in this new LFRMS.

- **Section 7: Action plan for delivering flood risk management between 2021-2027** - States the results and benefits of actions taken since the last LFRMS, informing the steps to move forward through the new action plan.
- **Section 8: Conclusion and next steps** - Summarises the LFRMS document and action plan, provides recommendations whilst also establishing the monitoring and reviewing approach for these documents.

## 1.5 Legislative context

Legislation around flood risk management in the UK can be linked back to the European Union (EU) directives, namely the [EU Water Framework Directive \(2000\)](#). This requires all Member States to improve the state of all water in order to achieve “good” ecological status, and the [EU Flood Directive \(2007\)](#) which defines a framework for approaching flood risk management. Both directives were originally adopted into UK law in 2003 and 2009 (as the Water Environment (Water Framework Directive) Regulations and Flood Risk Regulations) respectively.

Following the severe flooding that took place over the summer of 2007, the Government commissioned Sir Michael Pitt to carry out a comprehensive review of the state of flood risk management in England. The recommendations formulated in the [Pitt Review](#) were used to develop the FWMA which defines the roles and responsibilities of the RMAs involved in flood risk management. Local Councils, such as Wandsworth Council, were appointed the role of LLFA and the responsibility to lead on local flood risk management which is usually designated to an internal Flood Risk Management Team.

**Table 1-1 Summary table of relevant FRM legislation and policies**

<b>International</b>	
<a href="#"><u>EU Water Framework Directive (2000)</u></a>	The EU Water Framework Directive (WFD), published in 2000, makes it a requirement for Member States of the EU to improve and maintain the state of all waters, including surface waters and groundwater. All waters are to achieve a “good” ecological status by 2015 or, at the latest, by 2027. The WFD request that water management plans are developed using a river basin approach. The WFD was adopted into UK law in 2003 and will become part of new UK law following the UK’s departure from the EU.
<a href="#"><u>EU Flood Directive (2007)</u></a>	The EU Flood Directive dictates how Member States should approach the flood risk management of all types of floods. A three stage process is to be followed. By 2011, Member States have to produce Preliminary Flood Risk Assessments (PFRAs) to identify areas where water courses and coast lines are potentially at risk of flooding. By 2015, mapping of flood risk areas showing the extent, assets and number or inhabitants at risk must be carried out. By 2015, Flood Risk Management Plans (FRMPs) for areas at high risk of flooding must be produced, including measures to reduce flood risk. The EU Flood Directive was implemented in UK law through the Flood Risk Regulations (FRR) (2009) and will be a continuing law following the UK’s departure from the EU.
<a href="#"><u>IPCC Climate Change Report (2021)</u></a>	The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report aims to assess the physical science basis of climate change. The headlines from the 2021 report include predictions of +1.5°C temperature change in the next two decades and that climate change is presently affecting every populated region of the globe.
<b>National</b>	
<a href="#"><u>Civil Contingencies Act (2004)</u></a>	The Civil Contingencies Act is a legislative framework for civil protection in the UK that establishes the roles and responsibilities on organisations that play a role in preparing for and responding to emergencies. Under the Act, local authorities are a Category One responder. Some of their duties include putting in place emergency plans, sharing and co-operating with other local responders to enhance efficiency.
<a href="#"><u>The Pitt Review (2007)</u></a>	Following the extreme flooding that took place in the summer of 2007, a comprehensive review lead by Sir Michael Pitt known as the Pitt Review was commissioned by the UK Government. The Pitt Review provides 92 recommendations to improve flood risk management in England, notably that County Councils, large metropolitan boroughs, and Unitary Authorities should take lead on the management of flood risk. The Pitt Review recommendations were accepted by the Government and gave way to the FWMA.
<a href="#"><u>Flood Risk Regulations (2009)</u></a>	The FRR implement the EU Flood Directive in England. Flood risk management, as set out by the framework, requires the production of PFRAs, the identification of flood risk areas, mapping of such areas and FRMPs.
<a href="#"><u>Flood and Water Management Act (2010)</u></a>	FWMA aims to provide better, more sustainable management of flood risk and coastal erosion along with improving the sustainability of water resources. The FWMA defines structures and responsibilities for managing flood risk, notably with the introduction of LLFAs which impart the role of

	managing local flood risk to County Councils, large metropolitan boroughs, and Unitary Authorities. The EA is appointed to hold the strategic overview role of all sources of flooding, in addition to managing the flood risk from main rivers and the sea. The FWMA also places a statutory duty on the EA to develop a NFCERMS for England.
<a href="#">Flood and Coastal Erosion Risk Management Policy (2020)</a>	The Flood and Coastal Erosion Risk Management Policy Statement reflects the government's long-term ambition to increase the resilience to flood and coastal erosion risk nationwide.
<a href="#">National Flood and Coastal Erosion Risk Management Strategy (2020)</a> <a href="#">NFCERMS Action Plan (2021)</a>	The NFCERMS sets out a framework for RMAs involved in managing flood risk in order to increase the nation's flood resilience. The publication of the NFCERMS was followed by an Action Plan aligned with the long-term objectives of the NFCERMS.
<a href="#">National Planning Policy Framework (2021, revised)</a>	The National Planning Policy Framework (NPPF) sets out the planning policies to provide sustainable development and is published by the Ministry of Housing, Communities & Local Government. The NPPF provides guidance on developing Local Plans in line with national planning policies. These policies include avoiding and managing risks from flooding, in line with the role of local planning authorities to prepare local plans and to decide on planning application permissions.
<b>Regional</b>	
<a href="#">Thames Catchment Flood Management Plan (2009)</a>	The Thames Catchment Flood Management Plan (CFMP) is a plan which helps RMAs such as the EA to plan and agree the most effective ways to manage flood risk in the future. A CFMP considers all types of inland flooding from rivers, groundwater, surface water and tidal flooding but not directly from the sea (coastal flooding) which is instead covered in Shoreline Management Plans. CFMPs also consider likely effects of climate change, land use change/ management and the need for future development.
<a href="#">Mayor of London's Climate Change Adaptation Strategy (2011)</a>	This Mayor of London's Climate Change Adaption Strategy sets out the framework for improving the quality of life in London and for protecting the natural environment. It provides an action plan for making London more sustainable by using three 'pillars': retrofitting London, greening London and cleaner air for London. The strategy presents the understanding of main climate change effects on London as well as analysing the effects on cross-sector issues including health, economy, and infrastructure. The strategy also provides a 'roadmap to resilience' outlining actions, with lead and partner organisations.
<a href="#">Thames Estuary 2100 Flood Risk Management Plan (2012)</a>	The Thames Estuary 2100 (TE 2100) Plan was developed by the EA and provides strategic direction for managing flood risk in the Thames Estuary to the end of the century. The TE 2100 plan is an adaptive strategy and is reviewed on an interim basis every 5 years and on a full basis every ten years. The plan considers different long-term options for managing tidal flood risk depending on changes in factors which determine the level of flood risk, including sea level rise.
<a href="#">London Regional Flood Risk Appraisal (2018)</a>	The London Regional Flood Risk Appraisal (RFRA) provides an overview of all sources of flooding in London and addresses both its probability and consequences. The evidence of the London RFRA subsequently informs the

	London Plan and should inform local-level flood risk assessments and local plans.
<a href="#">The London Plan (2021)</a>	The London Plan is a general Strategic Development Strategy for London. Producing an Strategic Development Strategy is a requirement of the London Mayor established under Greater London Authority (GLA) legislation. The London Plan establishes an integrated economic, environmental, transport and social framework for the development of London for the next 20-25 years.
<b>Local</b>	
<a href="#">Local Plan (2016)</a>	The Local Plan is developed by the Local Planning Authority and sets out a vision and framework for the future development of the area. Wandsworth Council's Local Plan sets out policy and guidance to manage growth and guide development within the Wandsworth borough. It addresses needs and opportunities in relation to housing, the economy, community facilities and infrastructure, as well as conserving and enhancing the natural and historic environment, mitigating, and adapting to climate change and achieving well designed places. The plan is made up of the combination of strategic policies, addressing important priorities for the Wandsworth borough, and non-strategic policies.
<a href="#">Biodiversity Action Plan (2021)</a>	The local Biodiversity Action Plan outlines the actions that must be taken at a local level to achieve the objectives of the National Biodiversity Action plan, which was published in 1994. The Wandsworth Biodiversity Action Plan sets out a strategy for the conservation of species and habitats within Wandsworth.
Strategic Flood Risk Assessment <a href="#">Level 1 SFRA (2015)</a> <a href="#">Level 2 SFRA (2016)</a>	A Strategic Flood Risk Assessment (SFRA) is required by the NPPF and provides a strategic overview of all forms of flood risk within a designated area. A SFRA assesses the risk from all sources of flooding, the cumulative effect that development or changing land use could have, and the effect of climate change on the risk of flooding. A SFRA should also identify opportunities to reduce the causes and effects of flooding, including potential areas of land for flood risk management infrastructure. The SFRA provides guidance for the local plan, individual planning applications, future flood management, emergency planning and how to adapt to climate change.
<a href="#">Surface Water Management Plan (2021)</a>	The Surface Water Management Plan (SWMP) is a plan produced by LLFAs that presents the surface water flood risk for an area and forms a strategy on how to manage this with local partners. A SWMP considers flooding from sewers, drains, groundwater, and surface runoff from land, small watercourses and ditches that occur as a result of heavy rainfall. A SWMP should also include a long-term action plan to manage surface water flood risk which will influence land-use planning, emergency planning and future developments. SWMPs also aim to identify SuDS opportunities to manage surface water flood risk which contributes towards the WFD requirements.

## 1.6 Strategic objectives of the LFRMS

A requirement of the LFRMS is to produce a set of strategic objectives which set the targets for the LLFA for the next six-year LFRMS period. The strategic objectives for the Wandsworth borough have been aligned with those for the neighbouring borough, the London Borough of Richmond upon Thames (Richmond). This is due to the working partnership between the two boroughs in delivering local flood risk management. The updated strategic objectives also follow the main objectives laid out in the updated NFCERMS set by the EA. The NFCERMS has three core objectives which this LFRMS aims to encourage and apply, which are:

- Climate resilient places: working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change.
- Today's growth and infrastructure resilient in tomorrow's climate: making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as resilient infrastructure.
- A nation ready to respond and adapt to flooding and coastal change: ensuring local people understand their risk to flooding and coastal change and know their responsibilities and how to take action.

The strategic objectives for the Wandsworth borough are presented below. Clear actions for each of these strategic objectives have subsequently been laid out in an Action Plan presented in *Appendix 1 – Action Plan*. An internal Council version of the Action Plan will include a detailed monitoring and reviewing section which will observe and track the progression of these actions to assess the work implemented towards achieving each of these objectives.



### **Strategic Objective A:**

To improve our knowledge and understanding of the risk of flooding and the interactions between different sources of flooding across the London Borough of Wandsworth.

### **Strategic Objective B:**

To encourage appropriately mitigated development across the London Borough of Wandsworth by promoting sustainable multi-beneficial solutions to contribute to wider social, economic, and environmental outcomes.

### **Strategic Objective C:**

To seek and identify funding and resources available for a targeted approach to flood risk management.

### **Strategic Objective D:**

To proactively manage sources of local flooding to homes, critical infrastructure, and transport networks by establishing and maintaining partnerships with key organisations, including the Environment Agency and Thames Water.

### **Strategic Objective E:**

To work with Risk Management Authorities to raise awareness of flood risk with communities, residents and businesses, and how they can take action to protect themselves and their property by contributing to the management and reduction of flood risk.

### **Strategic Objective F:**

To use knowledge of flood risk and climate change projections to inform and adapt the emergency response to flooding within the London Borough of Wandsworth.

The strategic objectives cover a wide range of bases and conform to the current agenda for managing flood risk. Each of these six objectives have a specific area of focus which are as follows:

- A. Knowledge of flooding
- B. Development and wider contributions
- C. Funding and resources
- D. Partnership working
- E. Raising awareness of flood risk with local communities, residents and businesses
- F. Emergency response plans and climate change

## **1.7 Other strategic documents**

In conjunction with the LFRMS there are three additional appendices which include the LFRMS Action Plan, Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA). The SEA and HRA are important assessments which determine whether the LFRMS will pose any significant impacts to local environments or habitats.

### **1.7.1 Strategic Environmental Assessment**

The SEA is presented in *Appendix 2 – SEA Screening Report*. The purpose of the SEA is to review actions, plans and strategies which are likely to pose significant environmental effects to a specified area. This is required under the [European SEA Directive \(2001\)](#) which establishes five stages of assessment:

- **Stage A:** Setting the context and objectives, establishing the baseline and deciding on the scope.
- **Stage B:** Developing and refining options and assessing affects.
- **Stage C:** Preparing the environmental report.
- **Stage D:** Consulting on the draft strategy and the SEA report.
- **Stage E:** Monitoring the significant effects of implementing the strategy.

The Wandsworth borough SEA responds to the requirements for Stage A as an initial screening report which assesses whether progression onto later stages is necessary. Baseline data including biodiversity, flora and fauna, infrastructure assets, population, public health, air quality, climate factors, soil and water, and historic and cultural environments was assessed. This provided evidence for the establishment of a list of environmental issues facing the Wandsworth borough, which informed the creation of six SEA objectives. Through the assessment of the SEA objectives against the LFRMS strategic objectives it has been concluded that the Wandsworth borough LFRMS and its Action Plan will not have a detrimental effect on local environmental issues.

### 1.7.2 Habitats Regulations Assessment

The HRA is presented in Appendix 3 – HRA Screening Report. The purpose of the HRA is to understand any risks and implications posed by the LFRMS and its Action Plan to habitats and protected areas. This is required under the [Conservation of Habitats and Species Regulations \(2017\)](#) known also as the Habitats Regulations. Three tasks complete the full HRA process which are:

- **Task 1:** Screening. To check if the strategy, plan, or proposal is likely to have a significant effect on a European site's conservation objectives.
- **Task 2:** Appropriate Assessment. To assess the likely significant effects of the proposal in more detail and identify ways to avoid or minimise any effects.
- **Task 3:** Derogation. To consider if proposals that would have an adverse effect on a European site quality for exemption.

The Wandsworth borough HRA undertakes Task 1, completing the requirements for screening to determine if an appropriate assessment or derogation are necessary. The HRA requires the assessment of Natura 2000 sites, sites of European Importance, which include Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. The sites of Wimbledon Common (SAC), South West London Waterbodies (SPA & Ramsar), Windsor Forest & Great Park (SAC) and Thames Estuary & Marshes (SPA & Ramsar) have also been included as relevant sites for investigation. Analysis of each HRA site against each LFRMS strategic objective concludes that none of the proposed LFRMS strategic objectives or associated actions will impose negative effects on the Natura 2000 sites identified in the HRA report.

## 2 ROLES AND RESPONSIBILITIES

### 2.1 RMAs and other stakeholders

A RMA is an agency or organisation which has a role in managing flood risk. RMAs can range from central government organisations to private companies, and each will have different responsibilities to undertake before, during and following a flood event. In order for there to be effective communication during a flood it is important to understand who is responsible for what between RMAs. *Table 2-1* explains which RMA is responsible for different types of flooding and who has jurisdiction within different areas of managing flood risk.

**Table 2-1 RMAs responsibilities in managing types of flooding occurrences**

Responsibility	Risk Management Authority				
	Wandsworth Council	Environment Agency	Thames Water	Transport for London	National Highways
Highway drainage and asset management of major A-roads				✓	
Highway drainage and asset management of motorways					✓
Highway drainage and asset management of other public roads	✓				
Management of flood risk and regulation of main rivers, estuaries and the sea		✓			
Management of the flood risk and regulation of ordinary watercourses	✓				
Management of the public sewer network			✓		
Management of the risk of groundwater flooding	✓				
Management of the risk of statutory reservoir flooding		✓			
Management of the risk of surface water flooding	✓				

### 2.1.1 Wandsworth Council

Wandsworth Council has multiple duties and responsibilities as a principal RMA. These responsibilities are shared across different departments within Wandsworth such as the Highways Department, within which the LLFA is situated, explained in greater detail in Section 2.2.

The overarching duty of the LLFA is to manage local flood risks such as flooding from surface water, groundwater, and ordinary watercourses. Details of these types of flooding and others faced in the Wandsworth borough can be found in Section 3.2. To deliver its duties effectively the LLFA must follow the requirements set out in the FWMA:

- Prepare and maintain a LFRMS, consulting with local bodies and the public
- Perform works to manage local flood risk in their area
- Maintain an asset register, which is a record of physical features and structures that have a significant effect on flooding in the area
- Undertake flood risk investigations of significant flooding incidents as required by the FMWA. Criteria for the Wandsworth LLFA undertaking an investigation (in line with Section 19 of the FWMA) is presented in *Figure 2-1*
- Regulate and maintain the proper flow of ordinary watercourses, including issuing consents and enforcing obligations on physical structures
- Provide technical advice as a statutory consultee on surface water drainage to local planning authorities
- LLFA to assist local authority in its lead role in emergency planning and recovery after a flood event

Further LLFA obligations are detailed in the FFR, namely:

- Determine whether, in its opinion, there is a significant flood risk in its authority area. Identifying the part of the area affected by the risk (flood risk areas) detailing this within PFRAs
- Prepare in relation to each relevant flood risk area (1) a flood hazard map, and (2) a flood risk map
- Prepare a flood risk management plan in relation to each relevant flood risk area
- Co-operate with any other relevant authority which is exercising its function under the FFR

*Figure 2-1* presents the flood investigation threshold criteria, required under Section 19 of the FWMA, for the Wandsworth borough which are conditions that must be met in order for a formal investigation to take place. The LLFA may decide to investigate additional flooding incidents that do not necessarily conform to the listed criteria at their discretion if they consider the flood event to be significant in a different circumstance.

### Flood Investigation Threshold Requirements

A formal investigation will be carried out if one or more of the following occurs:

- If one or more residential or commercial properties flood internally\* as part of a single flood event.
- If five or more residential or commercial properties are flooded externally (within the curtilage of the property) as a result of a single event in the same location.
- If one or more residential or commercial properties has flooded externally more than twice within a single year (12-month period)

\*Definition of internal flooding: Where water crosses the threshold of a commercial or residential building.

Figure 2-1 The threshold criteria for when the LLFA will conduct a flood investigation

#### 2.1.2 The Environment Agency

The Environment Agency (EA) is the national flood risk authority for the UK. The EA has responsibilities and powers with regards to flood warnings (in partnership with the Met Office), flood risk mapping and the construction of flood defences and the consenting and enforcement of works near to or within main rivers. Large watercourses, known as 'main rivers', are within the regulatory control of the EA however the EA has strategic overview of all sources of flooding and coastal erosion as defined in the FWMA. The main rivers within the Wandsworth borough which the EA is responsible for managing and maintaining are:

- River Thames
- River Wandle
- River Graveney
- Beverley Brook

The FWMA also requires the EA as an RMA to produce the NFCERMS for England, as well as cooperate with other RMAs and exchange information. The EA also has a duty to produce guidance for LLFAs on FRMPs, provide tools and data and allocate national Government funding for projects managing flood and coastal erosion risk from all sources.

#### 2.1.3 Thames Water

Thames Water Utilities Limited (TWUL) is the regional water and sewerage company responsible for the Wandsworth borough. TWUL has the responsibility to manage the risk of flooding in relation to water supplies and sewerage facilities and manage the flood risks posed from their infrastructure if it were to fail. Under [Section 94](#) of the Water Industry Act (1991) TWUL have a duty to ensure that the area they serve is "effectually drained", meaning to provide, improve and extend public sewers as well as maintaining them.

#### 2.1.4 Transport for London

Transport for London (TfL) is responsible for managing the public transport network for London. TfL also has the responsibility to manage certain highway drainage and roadside ditches under the

[Highways Act \(1980\)](#). This is undertaken in conjunction with National Highways, and the relevant local authority (Richmond Council in this instance) (as specified in *Table 2-1*). The full list of red routes managed by TfL within the Wandsworth borough can be found on the Council's website [here](#).

### 2.1.5 Category One responders

The [Civil Contingencies Act \(2004\)](#) details the following authority divisions as Category One responders to emergencies:

- Local authorities (County Council, District Council, London Borough Council)
- Emergency Services (Police, Fire and Rescue, Ambulance Services)
- Others (EA, Secretary of State)

A serious flooding incident is a type of emergency that these Category One responders will respond to. As per the above list Wandsworth Council is a Category One responder, and as such has the responsibility to have plans in place to respond to emergencies and control or reduce the effect of an emergency. The LLFA team will investigate causes of flooding and manage flood risks but are not expected to respond during a flood event except to assist other RMAs and Category One responders (where possible). The [Wandsworth borough's Emergency Response Plan](#) can be viewed online.

### 2.1.6 Landowners

Private landowners are responsible for taking measures to safeguard their own land and property from flooding. Measures put in place must not inflict greater harm on surrounding buildings or land by increasing neighbouring flood risk. Riparian landowners have a duty to ensure that any structures on their land linked to neighbouring watercourses are clear of debris so that watercourses can flow naturally. Natural right of drainage is allowed however landowners must not artificially channel water in a way that will affect neighbouring property, and if a landowner has flood defences these must also be maintained correctly. Additional guidance on how to manage a watercourse on your property can be found [here](#).

## 2.2 Internal flood risk governance

The LLFA is led by the Flood Risk Management Team but operates across departments to deliver its flood risk management as each Council department has its own duties and responsibilities in terms of flood risk. The Highways Department is responsible for maintaining any highway assets on adopted roads that are not owned or managed by TfL. Highway drainage, such as drains, road gullies, ditches and pipes should be routinely inspected to ensure that highway surface run-off can be well managed. Wandsworth Council's LLFA team sits within the Highways Department.

The Emergency Planning team is responsible for preparing and updating the Emergency Flood Plan for the Wandsworth borough. The Development Management Department is accountable for evaluating planning applications and reviewing whether development proposals adhere to required standards, such as greenfield run-off rates and use of SuDS.

The functions of each team help the LLFA in meeting its roles and responsibilities established under the FWMA. Contact information for each department in Wandsworth Council can be found in *Figure 2-2*, in addition to general directories for external RMAs.



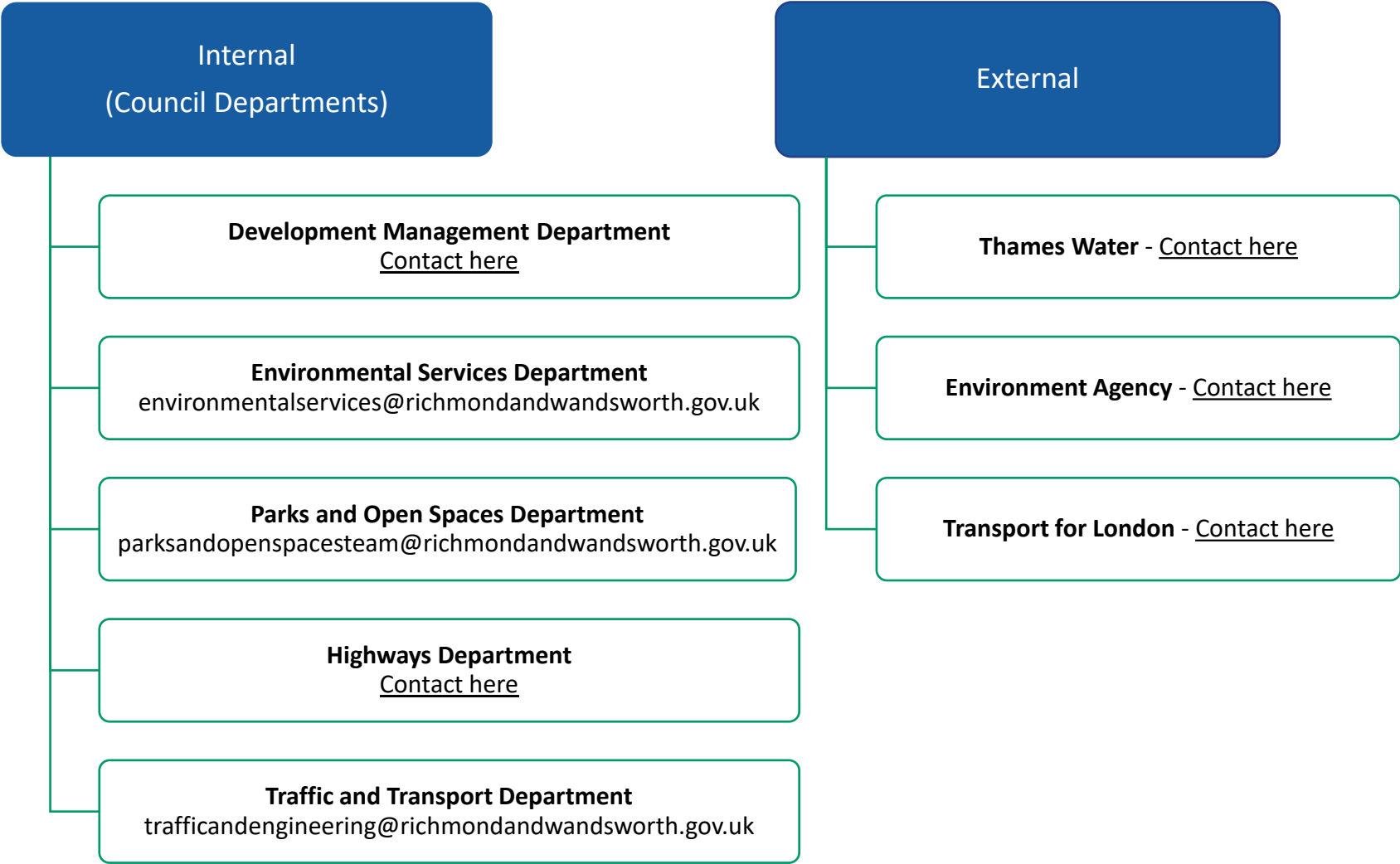


Figure 2-2 Contact information for internal and external RMAs

## 2.3 Local and regional partnership groups

The LLFA actively work with systems planners at TWUL, TfL for highways matters, London Fire Brigade for emergencies and neighbouring LLFAs to coordinate on strategic matters and joint flood management schemes. When engaging in local flood risk management and associated flood risk projects local groups are frequently engaged with.

### 2.3.1 South West London Strategic Partnership Flood Group

The South West London Strategic Flood Group (SWLSFG) was established in 2011 and reports to the Thames Regional Flood and Coastal Committee (TRFCC). The multi-agency SWLSFG includes representatives from the EA, TWUL, Thames Flood Advisors and six LLFAs in the region including: the Royal Borough of Kingston upon Thames, and the London Boroughs of Croydon, Merton, Richmond upon Thames, Sutton, and Wandsworth. Neighbouring borough LLFAs, including Surrey County Council and the London Borough of Lambeth, also attend SWLSFG meetings regarding cross-boundary matters.

### 2.3.2 South London and Surrey Technical Group

The South London and Surrey Technical Group is a regular group meeting of the LLFAs from South London including the Royal Borough of Kingston upon Thames, and the London Boroughs of Croydon, Merton, Southwark, Lambeth, Richmond upon Thames, Wandsworth and Surrey County Council. Any relevant flood risk management topics are discussed and the meeting is conducted as an open forum for any appropriate discussions between these authorities.

### 2.3.3 Thames Regional Flood and Coastal Committee

The TRFCC is a committee established by the EA under the FWMA and brings together members appointed by LLFAs and independent members for 3 main purposes:

- To ensure there are coherent plans for identifying, communicating, and managing flood and coastal erosion risks across catchments and shorelines.
- To encourage efficient, targeted and risk-based investment in flood and coastal erosion risk management that represents value for money and benefits local communities.
- To provide a link between the EA, LLFAs, other RMAs, and other relevant bodies to build an understanding of flood and coastal erosion risks in its area.

### 2.3.4 Internal flood group

An internal flood group has the purpose of utilising meetings to deliver the LFRMS and its Action Plan, further ensuring collaboration internally. The development of schemes and opportunities in partnership with other internal departments will be a part of the LFRMS delivery. The LLFA is looking to re-establish its internal flood group following the publication of this updated LFRMS. A shared staffing arrangement since 2016 has meant that both the Wandsworth LLFA and Richmond LLFA functions have been managed as one, and departments engaged with accordingly.

## 3 LOCAL FLOOD RISK

### 3.1 Local flooding characteristics

The Wandsworth borough is situated in south London, with the River Thames running along the northern boundary of the borough. The Wandsworth borough has the neighbouring London Boroughs of Lambeth (east), Merton (south) and Richmond upon Thames (west).

The topography of the Wandsworth borough is mostly low lying with its highest point being located in Putney Heath, which is reduced towards the River Thames in the north and the River Wandle in the east. Further details on the characteristics and terrain of the Wandsworth borough can be found in the [Wandsworth SWMP](#) along with additional visual maps.

There are a variety of major infrastructure and amenity areas within the Wandsworth borough that should be accounted for when reviewing flood risk, these are:

- Rail assets (Southwestern Railway line, London Underground (District Line, Northern Line), London Overground railway line and associated railway stations and maintenance assets)
- Town centres (Wandsworth town centre, Balham, Clapham Junction, Putney and Tooting) and District centres (Earlsfield, Roehampton, Southfields)
- Major roads (eight A-roads)
- Open spaces (Putney Heath, Battersea Park, Tooting Bec Common, Wandsworth Common and Clapham Common)

### 3.2 Types of flood risk

#### 3.2.1 Fluvial flood risk

Fluvial flood risk is flooding from main rivers and is experienced when the amount of water within a channel is greater than the capacity of that channel. The Wandsworth borough has four main rivers which are the River Wandle, River Graveney, Beverley Brook and the River Thames. The River Wandle flows into the Wandsworth borough from the South, near Summerstown, flowing northwards through the centre of the Wandsworth borough before joining the River Thames. There are raised flood defences in place along the banks of the River Wandle which is part of the Thames Tidal Defence system. The River Graveney is a tributary of the River Wandle which runs along the south-eastern boundary of the Wandsworth borough before the two join in the London Borough of Merton. The Beverley Brook is a main river which flows through the Wandsworth borough connecting with another tributary flowing from the Richmond borough before discharging into the River Thames. Finally, the River Thames flows west along the northern boundary of the Wandsworth borough.

The EA produces fluvial flood risk zones which categorises the risk of flooding from this source. Flood Zone 2 are areas which are predicted to have between a 1 in 100 and 1 in 1000 years annual probability of fluvial flooding, and Flood Zone 3 are areas which are predicted to have above a 1 in 100 annual probability of fluvial flooding. Both these zones also take into consideration flood risk from the sea which is associated with fluvial flood risk due to tidal influence in the River Thames. Additional information including maps of the Flood Zones in the Wandsworth borough can be viewed in the [Wandsworth SWMP \(2021\)](#) and the [Wandsworth Level 1 SFRA \(2015\)](#).

### 3.2.2 Tidal flood risk

Tidal flooding also poses a flood risk threat to the Wandsworth borough but is only likely under the conditions of extreme high tides and/or storm surges. The Wandsworth borough has in place fluvial defences including flood walls which form part of the EA's Thames Tidal Defence system. These defences help to mitigate the risk posed by tidal flood risk from the River Thames. Areas protected by these defences are included in the watercourses and fluvial flood risk map within the Wandsworth SWMP.

### 3.2.3 Surface water flood risk

Surface water flood risk, also known under the term pluvial flooding, is a risk of flooding from substantial surface run-offs which occur when there is high intensity rainfall which causes the ground to be saturated, reducing infiltration. In the Wandsworth borough there is a significant Risk of Flooding from Surface Water (RoFSW) which is due to large areas of urban land which has impermeable surfacing which doesn't allow sufficient infiltration during intense rainfall events. The increasing risk of flooding from surface water is due to substantial land use change which has prevented more natural infiltration processes from taking place and is the case for many urban areas. A lack of maintenance of drains or gullies can also contribute to drainage systems becoming overwhelmed and further exacerbate surface water flood risk.

The summer of 2021 showed how high magnitude rainfall over short durations in drier months can cause intense flash flooding across the city of London, demonstrating how vulnerable the city is to surface water flooding. Wandsworth borough's surface water flood records show that there is a larger concentration of flood risk incidents in the east which aligns with RoFSW mapping by the EA, although these incidents are widespread across the Wandsworth borough. More information is provided in the Wandsworth SWMP, and details on how to effectively manage the RoFSW is demonstrated in *Section 5.2*.

#### Ordinary watercourses

Ordinary watercourses include streams, ditches, drains, dykes, non-public sewers, passages through which water flows and rivers that do not qualify as main rivers. These watercourses are as defined under the [Land Drainage Act \(1991\)](#) and are included in the mapping of the RoFSW which is presented in the Wandsworth SWMP. Similar to fluvial flood risk, flood risk from ordinary watercourses is caused by an increase in capacity which exceeds a channels capacity. However, flooding from ordinary watercourses is considered to be a combination of different flood risks, fluvial, surface and sewer. The most prominent ordinary watercourses noted across the Wandsworth borough are located in the west of the borough and are located in Putney Heath and Putney Vale which join the Beverley Brook.

#### Properties at risk of flooding from surface water

Within the Wandsworth SWMP the number of properties at RoFSW in the borough were calculated. These have been calculated by assuming a property threshold of 100mm and 30mm minimum depth of flooding, applying data from the EA's properties at risk of flooding in a 1 in 100-year rainfall event. The property values for the Wandsworth borough at a 1 in 100-year surface water extent are displayed in *Table 3-1*, and the full list of property values for other extents can be viewed within the Wandsworth SWMP document.

**Table 3-1 Number of properties at RoFSW within the Wandsworth borough**

	Residential	Other	Unclassified
1 in 100-year surface water extent	5,836	2,103	550

### 3.2.4 Groundwater flood risk

Groundwater flood risk is a risk of flooding from water which rises from underlying aquifers or sub-surface permeable strata. Groundwater flooding tends to occur after periods of heavy and sustained rainfall. This type of flooding is also variable over location and time due to varying topography and geology. Groundwater flooding can take a longer time to dissipate compared to other forms of flooding because of these factors. High groundwater levels can also contribute to other types of flooding such as pluvial and fluvial flooding by reducing infiltration capacity, and it can be difficult to tell the source of flooding in these instances.

Wandsworth borough's bedrock geology is mostly composed of the London Clay Formation which consists of clay and silt. London Clay is known to have low infiltration rates and can therefore cause ponding where the water cannot flow to more permeable strata. The Wandsworth borough also has areas with slightly differing geology including an area of Claygate Member found in Putney Heath, and of the Lambeth group in Tooting. There are further superficial deposits within the Wandsworth borough which include Alluvium, Black Park Gravel, Kempton Park Gravel, Hackney Gravel Member and Langley Silt. Groundwater flooding is more likely to occur in areas with chalk, sandstone or river terrace deposits where the strata is permeable and allows for water to rise. This is also the case for areas with superficial deposits where groundwater can flow laterally through the ground because it cannot infiltrate into underlying clays. The areas around the centre of the Wandsworth borough in the vicinity of Summerstown, Tooting and Graveney have a high susceptibility to groundwater flood risk. Further details on Wandsworth borough's geology can be found in the SWMP and Level 1 SFRA.

### 3.2.5 Sewer flood risk

Sewer flood risk is a risk of flooding from sewers which can include from different types of sewerage channels such as foul or surface water sewers. Sewer flooding is likely to occur when the volume of rainfall entering a sewer network exceeds the channels capacity. This could be due to a number of factors including increased flow; failure of important infrastructure such as valves or pumps; blockages; groundwater infiltration into the pipe networks; a watercourse having been culverted or incorporated into the drainage network; and limited outflow from the sewer network due to high water levels in receiving watercourses.

Sewer flooding is usually localised and short-term but can happen quickly without warning, and the flood waters from sewers are often contaminated with sewerage causing concerns to public health. TWUL is responsible for managing the sewer flood risk within the Wandsworth borough. The majority of the Wandsworth borough is served by a combined sewer network which drains both rainwater and foul water. The sewer system and its associated infrastructure is dated and not built to withstand high intensity rainfall such as a 1 in 100-year event. This will therefore contribute to increased sewer flooding as assets cannot cope with the volume of water. There have been a substantial amount of sewer flooding events recorded by the LLFA in the past which is presented in the SWMP mapping, and further information can also be found in the Wandsworth Level 1 SFRA.

### 3.2.6 Flood risk from other sources

Additional sources of flood risk in the Wandsworth borough can include artificial sources such as from reservoirs, lakes, or canals. These types of flooding are usually a result of infrastructure failure or human interference. A map of flood risk from artificial sources can be found in Wandsworth's SWMP.

## 3.3 Flooding history within the Wandsworth borough

The LLFA is responsible for managing reports of flooding that are sent to Wandsworth as part of its duties and responsibilities. This will include the location and type of flooding that has occurred for each incident. Flood reports have been very inconsistent until recently and lacked in accurate information which subsequently impacted on flood risk planning. Wandsworth's previous LFRMS reported that only minimal flood reports had historically been recorded prior to the release of its publication. This included multiple severe surface water flooding incidents in July 2007, 52 incidents of historic groundwater flooding, no instances of flooding from ordinary watercourses, and historic incidents of flooding from main rivers in the year 1928, 1937 and 1968. A lack in public understanding of the sources of flooding can also contribute to a low level of flood incident reports with insufficient information. Many homeowners are also concerned that by reporting incidents of flooding they may reduce the value of their property, so do not report when flooding occurs. This is not necessarily the case and instead reduces the evidence base for informing appropriate flood risk management schemes.

There have been actions to target this issue of a lack of accurate flood reports by introducing the [online flood reporting tool](#) in November 2020. Having accurate databases of flood reports is imperative to support the effective delivery of flood risk management for the Wandsworth borough. Maps displaying historic flood maps including previous flood outlines and flooding incidents can be viewed in Wandsworth's SWMP.

## 3.4 Future flood risk considerations

Wandsworth Council acknowledges the many existing and potential impacts of climate change and this is reflected in its Local Plan. The [Local Plan policy IS 2 – Sustainable design, low carbon development and renewable energy](#) states that Wandsworth Council will use the National Planning Policy Framework and London Plan policies to ensure the overall sustainability of a planned development site. This includes policies on green infrastructure, flood risk, sustainable drainage, and water quality which are also established within standards set by the London Plan Supplementary Planning Guidance on Sustainable Design and Construction.

Wandsworth Council encourages the use of sustainable drainage systems in both new and retrofit developments. In Wandsworth's capacity as the LLFA, major planning applications are reviewed to ensure planning practice is adhered to for sustainable drainage systems. This is defined in action B1 of the LFRMS Action Plan and is supported by actions B2 and B8. Developers are also encouraged to consider wider benefits of their schemes including but not limited to biodiversity net gain, reducing carbon emissions and other social benefits.

Critical Drainage Area (CDA) feasibility studies and pipeline flood alleviation schemes are currently in progress, subject to securing funding. The information from CDA feasibility studies, further detailed in *Section 4.4.1* and *Section 5.2*, will help to better understand an area's flood risk as well as suggest

drainage solutions and SuDS approaches that may be appropriate. Updates to flood risk data from external sources such as the EA will also be closely monitored for any implications new information can provide for managing local flood risk. Action A3 of the LFRMS Action Plan details the partnership working approach the LLFA looks to achieve with collaboration and support from RMAs.

Although climate change is an important factor upon increasing flood risk concerns there are also other issues which should also be noted, including change in land use, groundwater abstraction and ecological concerns. This LFRMS and its accompanying appendices aim to mitigate and acknowledge these additional factors and implications when planning for flood risk management in the Wandsworth borough. Environmental and habitat concerns have been thoroughly investigated in the accompanying SEA, *Appendix 2 – SEA Screening Report*, and HRA, *Appendix 3 – HRA Screening Report* documents. Actions E2 and E6 in the LFRMS Action Plan demonstrate how the LLFA aims to focus on flood risk education and awareness, and property protection for local residents and businesses.



## 4 ADAPTATION AND RESILIENCE TO FLOODING

### 4.1 What is climate change

The definition of climate change is the long-term variation in the planet's temperature and weather patterns. Climate change can be a natural process, however, the human activity of producing greenhouse gas emissions is contributing to the rapid changes experienced in global climate.

The [Sixth Assessment Report](#) published by the IPCC in 2021 emphasises that climate change is already having a definitive effect on global weather extremes. For instance, heavy rainfall and intense heatwaves have become more frequent since the 1950s. In the UK, the Met Office produces [UK Climate Change Projections \(UKCP18\)](#) which forecast how the UK's climate may change over the 21st century. These predictions include "an increased chance of warmer, wetter winters and hotter, drier summers along with an increase in the frequency and intensity of extremes", in line with international predictions. The [UK Climate Change Committee](#) produced the [Independent Assessment of UK Climate Risk](#) report published in June 2021. This is compiled from the collaboration of hundreds of individuals and organisations, and presents the risks and opportunities faced by the UK in terms of the natural environment, health, homes, infrastructure and the economy.

Climate change is expected to increase the risk of flooding in the future, with areas historically at low risk of flooding becoming areas at high risk. Fast and effective climate change mitigation and adaption actions are therefore needed in order to protect properties and infrastructure from the increased flood risk as a result of climate change. It is because of this that Wandsworth Council declared a Climate Emergency in July 2019. Since this declaration Wandsworth Council has produced the [Wandsworth borough Environment and Sustainability Strategy \(2019-2030\)](#) which helps establish the vision, challenges and opportunities for tackling climate change issues. Wandsworth Council has also committed to becoming a carbon neutral organisation by 2030 and zero carbon by 2050. Below is a summary of key achievements made to date:

- Invested over £200,000 on electric charging points in 2018/19.
- Invested over £250,000 in solar Photovoltaics which collectively produce over 480,000kWh in energy, saving 15,000 tCO<sub>2</sub> in emissions.
- Launched the "For Fish's Sake" campaign, which highlights the damaging impact of waste entering the River Thames, Wandle and Beverly Brook.
- Worked with schools in the development of School Travel Plans which reduce the number of cars used on the school run through initiatives like 'walking buses' and car pools.
- Promoted innovative 'plogging' events, where residents can combine exercise with tidying up their neighbourhoods and parks.

### 4.2 What is resilience and adaptation

Climate change will inevitably increase the risk of flooding, therefore flood avoidance in the majority of areas is not a realistic goal to set in terms of flood risk management. Instead, it is important to put effective plans in place to minimise the damage caused by flooding, and to improve recoverability for residents and businesses by improving flood resilience.

The NCERFMS establishes resilience as *‘the capacity of people and places to plan for, better protect, respond to, and recover from flooding and coastal change. This includes making the best land use and development choices, protecting people and places, responding to, and recovering from flooding and coastal change whilst all the time adapting to climate change’*. The NFCERMS encourages the idea of *‘building back better’* to improve the resilience of properties and infrastructure for future flood occurrences.

Adapting to flooding differs from resilience in that measures must be taken over a longer period of time and people or property will adapt to life with the issue of flooding rather than mitigate the risks through resilient measures. The risk of flooding is constantly evolving and it is considered that an adaptive approach or combination of adaption and resilience measures will be needed in the future. The NFCERMS outlines ‘adaptive pathways’ to enable RMAs in effectively planning for expected changes in climate exacerbating flooding risks. The best means of planning effectively for future flood risk is by optimising a combined approach of both resilience measures and adaptive approaches.

#### **4.3 How the LLFA will support resilient local communities**

The LLFA’s main purpose of supporting resilient local communities is by following its FWMA duties and updating local strategic documents such as the Wandsworth SWMP and this LFRMS. Uniting these strategies with others is an important task for the LLFA as they help to establish targets for development management, public realm schemes and Wandsworth Council’s corporate vision. The strategic documents produced by Wandsworth Council work together to help unite aims and targets for supporting local communities. Covering many overlapping issues such as lowering carbon emissions, increasing green spaces and managing development.

Wandsworth Council has identified areas where it will support resilient local communities within its local plan objectives, such as requiring development to be fully resilient to the future impacts of climate change and minimising the vulnerability of people and property from environmental impacts of developments. Additional local plan objectives can be found in [Wandsworth’s Local Plan](#). Wandsworth Council’s main strategic targets are to create and improve the local environment to become more climate resilient, whilst meeting the needs of local people such as providing suitable housing, job opportunities, and supporting healthy lifestyles. Wandsworth Council is working towards managing social issues alongside the concerns of greater flood risk from climate change. To do this the LLFA is exploring opportunities for SuDS that offer multiple benefit solutions for communities. One instance being the Trewint Street raingarden in Earlsfield which provides water attenuation as well as biodiversity and greening benefits. These SuDS schemes will reduce the risk from surface water flooding as well as increasing awareness of flooding, and producing accessible amenity spaces, a key example being the Pocket Park established in Tooting.

Progress is already underway on increasing the resilience of local communities and the support which they receive, including the potential for SuDS projects throughout the Wandsworth borough to relieve highway flooding. Further details on sustainable flood risk projects are discussed in *Section 5.3*.

Wandsworth Council are also promoting the online flood reporting tool which will allow the LLFA to target the areas most affected by flooding. This action works towards achieving strategic objective A of the LFRMS and will supplement the LLFAs understanding of flood risk and the associated effects of climate change. More information on Wandsworth Council’s plans towards tackling climate change can be found online at [Wandsworth together on climate change](#).

## 4.4 Guidance for local communities

### 4.4.1 How to reduce the risk

Within the Wandsworth borough there are many ways different groups, organisations and individuals can help to reduce the risk of flooding within the local area. Wandsworth Council is responsible for zoning land and enforcing local planning controls to help influence long term development which can affect how land is used to help reduce flood risk in the borough. This can include designating sites for flood alleviation schemes or enforcing conditions on developments in certain vulnerable areas. Larger flood alleviation schemes led by the LLFA with external developers can include introducing SuDS to an area or landscape. This is being explored through the CDA feasibility studies at Summerstown and Earlsfield. Information for developers on using SuDS can be found in *Section 5.2*. In addition to taking a lead role in planning and development schemes, the LLFA also has a duty to educate and communicate on flood risk which helps raise awareness and follow on to reduce risks to people and property alike.

Local flood groups can also have an important role in reducing local flood risk. A Flood Action Group is a voluntary group of local residents who hold regular meetings and work on behalf of the wider community to reduce the effect of future flood risk. Flood Action Groups focus on emergency planning and act as a voice for issues and ideas on local flooding. Further information on Flood Action Groups can be found on the National Flood Forum's website [here](#).

Individuals can aid in the reduction of flood risk by first understanding the risk in the local area. This can be done by reading the [SFRA](#), [PFRA](#) and [SWMP](#) available on Wandsworth Council's website. Following this you can check if you are in an area at risk by using the '[Check for Flooding](#)' tool produced by the EA. If you are within a flood zone you can then [sign up for flood warnings](#) to receive free flood alerts via phone, email or text message for your home or business. If you wish to put in place measures on your property to protect against imminent or future flood risk, there are a variety of different Property Flood Resilience (PFR) measures you can consider. Further information on PFR is discussed in *Section 5.2.3*.

### 4.4.2 Before, during and after a flood

There are tasks which can be done to prepare and plan for a flooding event and these need to be done before, during and after a flood event. *Figure 4-1* shows a list of steps that should be taken for each stage of a flood event.

More information on what to do before, during and after a flood can be found online through the [National Flood Forum](#) and in [EA guidance](#), or by using the following helpline numbers:

- The EA Floodline: 0345 988 1188
- National Flood Forum: 01299 403 055

A directory for how to report different types of flooding is displayed in *Figure 4-2*.

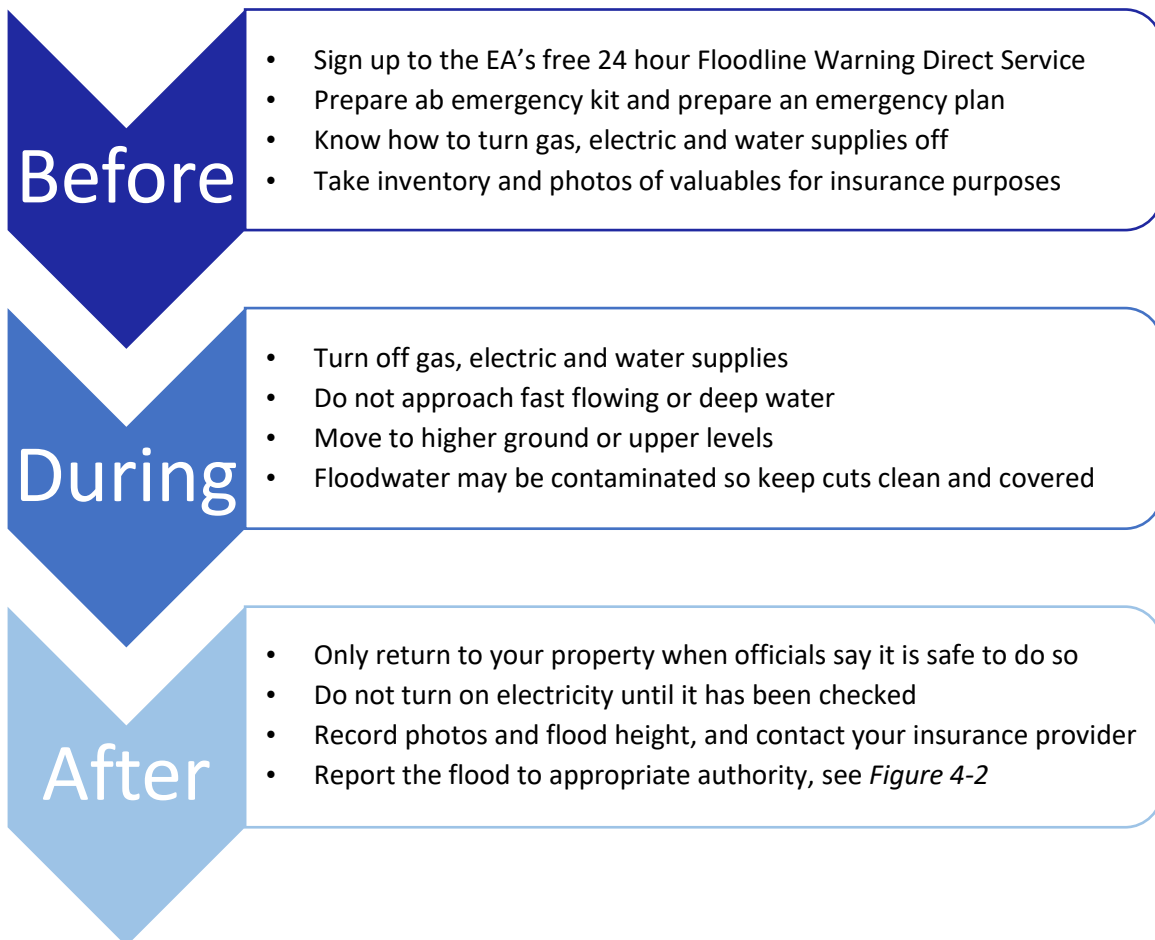


Figure 4-1 Information on actions to take before, during and after a flood, summarised from full EA guidance which can be found [here](#)

## HOW TO REPORT A FLOOD

For blocked sewers, sewer flooding and burst water mains

**Thames Water**  
**0800 316 9800**  
[TWUL online reporting tool](#)

For blocked public drains, flooded roads, flooding from ordinary watercourses, groundwater flooding

**Wandsworth Council**  
**020 8871 7490 (24/7 service)**  
[Online flood reporting tool](#)

For blocked or polluted rivers, flooding from the sea and flooding from main rivers

**Environment Agency**  
**0800 80 70 60 (24/7 service)**

For blocked private drains and flooding caused by private drains

**Property / Landowner**

For blocked highway drains and/or gullies

**Wandsworth Council**  
[Street issues reporting tool](#)

For blocked drains and/or gullies on highways managed by Transport for London

**Transport for London**  
[Streetcare reporting tool](#)

**Figure 4-2 Details on how to report types of flooding in the Wandsworth borough**

## 5 SUSTAINABLE MANAGEMENT

### 5.1 Sustainability and flood risk management

With climate change set to increase the number and severity of storms and rainfall it is necessary to build sustainable flood risk management strategies. This is to ensure that existing defences and areas of potentially high levels of flooding are protected for the future. Managing flooding is about building resilience, not necessarily resistance. Flooding as a whole is not preventable which is why applying sustainable flood risk management strategies is crucial for the future.

When delivering sustainable flood risk management there are six potential outcomes that can be aimed for:

- Investing appropriately to protect the most vulnerable and areas which are at the greatest risk of flooding to reduce the number of people, homes, and property at risk of flooding.
- Utilising rural and urban landscapes to store and [slow the flow](#) of water.
- Sustainable surface water management that reduces stresses on sewer systems to reduce flood risk and improve water and environmental quality.
- Continually keeping the public well-informed on understanding flood risk and appropriate actions they can take to protect themselves, their property, and businesses.
- Creating adaptable flood managing actions that can adapt to a changing climate.

### 5.2 Strategies for sustainable development

Sustainable development around flood risk management is particularly important in the present day race for space. The FWMA states that flood and coastal erosion RMAs should aim to contribute towards the achievement of sustainable development when exercising their flood and coastal erosion risk management functions. The definition of sustainable development centres on the theme of improving life in ways which do not restrict the ability of others, now or for future generations.

Part of sustainable development is using alternative engineering approaches in new or alongside existing flood risk management strategies. Increasing awareness and preparedness are also key factors. This can be achieved by supporting individuals, communities, and businesses to build their resilience to flood events and speed up the recovery process. It is important to incorporate greater flood resilience measures into the design of new buildings and the retro-fitting of properties at risk, including historic buildings. At present, the LLFA is conducting two CDA feasibility studies in Summerstown and Earlsfield to assess opportunities for implementing flood schemes such as SuDS and/or NFM. Both of these are forms of flood risk management which can be implemented and also applied in planning developments.

#### 5.2.1 Sustainable Drainage Systems

SuDS are a natural method to manage drainage in and around properties and other developments. SuDS work by encouraging natural drainage processes to manage water runoff to reduce the quantity of surface water entering the traditional sewer networks, and to improve the quality of runoff water. There are many variations of SuDS which can be categorised based on the processes they each employ, such as: water harvesting (water butts, blue roofs), infiltration (soakaways,

infiltration trenches), detention or attenuation (bioretention, raingardens, retention ponds, geocellular storage) and conveyance (swales, conveyance channels).

SuDS are strongly encouraged in new developments and also in the redevelopment and retrofitting of existing developments as established in the [Wandsworth Council's Local Plan](#) policies DMS3, DMS5 and DMS6. The LLFA requires that SuDS are used in all development proposals and planning applicants are required to complete a [London Sustainable Drainage Proforma](#). Additional technical advice on planning, designing, building and maintaining SuDS is offered in the [CIRIA SuDS Manual](#).

SuDS can also offer a range of multi-benefit solutions targeting flood risk as well as water quality, improving amenity and biodiversity, creation of recreational areas, improving local education on associated environmental matters. Such schemes can attenuate water from impermeable areas through the use of raingardens, whilst making the area greener and more attractive. Offering benefits of improved accessibility and access to green / natural spaces. This aligns well with the [Wandsworth Council's Environment and Sustainability Strategy](#) agenda which sets out targets such as ensuring that the urban greening factor is considered in all developments. The LLFA is also aiming to investigate alternate areas of SuDS such as schools, library grounds and roofs.

### 5.2.2 Natural Flood Management

The process of NFM involves implementing measures that help to protect, restore, and mimic the natural processes within a catchment, floodplain, river, or coast to help reduce the risk of flooding. NFM aims to reduce the maximum water volume of a flood (peak flood flow) and/or delay the arrival of the flood peak downstream. This increases the time for flood preparation.

There are four mechanisms of NFM, sourced from the [Catchment Based Approach website](#), to achieve the above-mentioned aims:

1. Increasing flood storage: the formation of temporary storage to store water during a flood event and then release the water slowly. For example, reconnecting functional floodplains and creating storage ponds.
2. Increasing catchment and channel roughness: this process works by increasing the resistance to surface

## TOOTING'S NEW POCKET PARK

This new community space is situated on the edge of the Gravenel Gardens estate in Mellison Road.

The design incorporates a rain garden to maximise the infiltration of surface water to relieve pressure on the surrounding sewer network. Pollution is also being managed as plants help to filter pollutants from surface rainwater, and also increase biodiversity in the area.

[Find out more here](#)



*Image source –*  
[Wandsworth Council](#)



and in-channel water flow in order to 'slow the flow'. For example, planting trees and hedgerows and restoring river meanders.

3. Increasing losses: by increasing the amount of water that infiltrates into the ground or is lost to the atmosphere through evapotranspiration. For example, methods in reducing soil compaction and infiltration methods of SuDS.
4. De-synchronising peak flows from tributaries: slowing the movement of water in one tributary compared to another to reduce flood peaks in the main body of the river further downstream.

NFM attempts to restore the natural function of the river catchment, or where this is not possible to mimic the processes using particular design techniques. The LLFA attempts to incorporate NFM schemes wherever possible within the Wandsworth borough, by working collaboratively with other RMAs. Further examples of NFM techniques have been collated by the EA to form an [evidence base](#) with several case studies of NFM implementation and benefits to flood risk management.

### 5.2.3 Property Flood Resilience

PFR are measures which can be introduced to households or businesses to help increase a property's resilience to flooding. There are two main targets of PFR: to help reduce the flood risk to a property, and/or reduce the recovery time after a flood for a building to be usable. PFR can be incorporated into new developments and also be added as retrofitted options to buildings. There are many choices of PFR available on the market, such as airbrick covers, flood doors and non-return valves. Individuals living in areas at high risk of flooding or in SWMP hotspot areas are advised to seek PFR advice. A useful handbook for property owners is the [Homeowners Guide to PFR](#), and the [Blue Pages](#) are the UK's leading independent flood directory to help find PFR products or installers.

## 5.3 Future plans for delivering sustainable solutions

There are an established set of targets for delivering sustainable solutions in the Wandsworth borough, which have been outlined in the [Wandsworth Council's Environment and Sustainability Strategy \(2019-2030\)](#) and [Climate Action Plan \(2021\)](#). There is a strong focus on developing the Wandsworth borough in a balanced way which will help to improve daily living, reduce environmental effects, improve accessibility, minimise and mitigate the effects of climate change.

Planning developments for the Wandsworth borough are required to include some form of SuDS to mitigate the impacts of the development on surface water management, including highway drainage, across the borough. This must be in line with the drainage hierarchy set out in the [London Plan Policy SI 13 - Sustainable Drainage](#). The LLFA strongly supports the use of SuDS within planning and as mentioned in *Section 5.2*, there are also LLFA-led feasibility studies underway to implement SuDS within the Wandsworth borough. The LLFA is focusing on reducing the vulnerability of people and property to flood risk through the SFRA by ensuring that development is located away from areas considered to be at high risk of flooding. If there is adequate justification for why this cannot be done other alternatives will be sought to help mitigate the flood risk.

The benefits of introducing effective flood resilience methods can be widespread, incorporating social, environmental, and economic goals. Multiple benefit solutions could include but aren't limited to increasing biodiversity, protecting water supplies, and improving air quality. These benefits can come

to fruition when the appropriate methods of flood risk management are chosen which support the successful integration of sustainable solutions.

## 6 COMMUNITY AND STAKEHOLDER ENGAGEMENT PLANS

### 6.1 Past LLFA engagement since previous LFRMS

Since the 2016 LFRMS, the LLFA has demonstrated effective measures in maintaining positive relationships with local communities and stakeholders. Members of the LLFA Team have continued regular engagement with the SWLSFG by attending meetings and routine communications. The LLFA has also contributed to the Thames River Basin FRMP update, currently being produced by the EA, by supplying feedback at consultations. In addition to this the LLFA has supported good working relationships with TWUL and has engaged with them on a variety of operational issues and have participated in a stakeholder steering group on the Drainage and Wastewater Management Plan (DWMP) currently being produced by TWUL.

Wandsworth Council has recently had its SWMP updated in 2021 which contains updated mapping that developers and planners should use when submitting applications to the local planning authority. The LLFA has a duty to respond to any major planning applications and will assess these using up to date evidence to evaluate the proposed flood alleviation methods. These should follow the drainage hierarchy as mentioned in *Section 5.3*.

### 6.2 Plans for future engagement

In addition to the LFRMS and its appendices there will also be a communications strategy aimed at stakeholder engagement which will indicate how the LLFA will engage with local stakeholders in the delivery of the LFRMS. The communications strategy will explain how different stakeholders can use the strategy and will present the opportunities for collaborative working. How each stakeholder chooses to get involved will vary depending on the interests and influence a stakeholder has in respect to what the LFRMS actions are and the timing of when they will take place. Any stakeholder groups which will be directly affected by actions in the LFRMS or by any potential policy changes will be consulted with at the appropriate times.

A list of stakeholders is presented in *Table 6-1* which have been separated under different categories. These are groups and individuals who are likely to be involved with the LFRMS either through the consultation process or in the delivery of the action plan. Participation from these stakeholders is strongly encouraged in order to enable effective, balanced, and sustainable solutions to flood risk to be implemented in the Wandsworth borough. The LFRMS communications strategy will also align with the Wandsworth SWMP engagement plan and will also consider the Richmond LFRMS communications strategy as both boroughs are likely to delivery joint actions through partnership engagements.

**Table 6-1 Stakeholder categories and examples of individual stakeholders**

Stakeholder Categories	Individual Stakeholder
Local Community Groups / Individuals	<ul style="list-style-type: none"> <li>Residents</li> <li>Businesses</li> <li>Schools</li> <li>Local community / volunteer groups</li> <li>Student/ youth councils</li> <li>Disability groups</li> <li>Flood action groups</li> <li>Environmental action groups</li> </ul>
Public Services	<ul style="list-style-type: none"> <li>Emergency services</li> <li>Hospitals / health care services</li> </ul>
Charities and Funding Bodies	<ul style="list-style-type: none"> <li>Catchment partnerships</li> <li>Wildlife groups</li> <li>Habitats and Heritage (formally the <i>Southwest London Environment Network</i>)</li> <li>Environment Trust</li> <li>Canal and River Trust</li> </ul>
Council Departments	<ul style="list-style-type: none"> <li>Development and Management Department</li> <li>Environmental Services Department</li> <li>Parks and Open Spaces Department</li> <li>Highways Department</li> <li>Traffic and Transport Department</li> </ul>
Government Approving Bodies	<ul style="list-style-type: none"> <li>EA</li> <li>GLA</li> </ul>
External Partnerships	<ul style="list-style-type: none"> <li>SWLSFG</li> <li>South London and Surrey Technical Group</li> <li>TRFCC</li> <li>South East Rivers Trust</li> </ul>
Private organisations	<ul style="list-style-type: none"> <li>TWUL</li> <li>Network Rail</li> <li>TfL</li> </ul>

## 6.3 Key stakeholders

### 6.3.1 Primary stakeholders

Primary stakeholders that are involved in the process of producing this LFRMS and in the delivery of its actions are:

- Council departments
- EA
- TWUL

The contribution from these primary stakeholders in terms of their feedback and support is instrumental in the effective delivery of the LFRMS actions. Council departments are one of the

three primary stakeholders identified, as different departments will work in partnership with the LLFA team in the delivery of certain actions. For example the Highways department will support the maintenance of drains and gullies as per action D2 within *Appendix 1 – Action Plan*. The second strategic objective (B) concentrates on the theme of development actions and a variety of these actions will involve the Development Management department. By working together with other Council departments and teams there is greater potential for flood risk management to be sustainable and offer the potential for multi-benefit solutions. This also allows for flood risk agendas to align with and support other objectives and targets for the Wandsworth borough, and in helping to identify new opportunities.

In addition to the Council departments there are two external primary stakeholders (the EA and TWUL). These organisations will offer additional support and information in the provision of flood risk management and it is important that both these partners are involved in the production and delivery of the LFRMS. Both the EA and TWUL are involved in the consultation phase of the LFRMS and will also assist in carrying out some of the LFRMS actions that are relevant to their own duties and objectives. Collaboration with strategic partnership groups such as SWLSFG and TRFCC will also support the delivery of the LFRMS Action Plan. These working relationships also hold the potential for additional sources of funding to help progress particular actions and projects, for example, the implementation of SuDS across the Wandsworth borough.

### 6.3.2 Secondary stakeholders

Secondary stakeholders can include any other organisation, individual or stakeholder group. These are predominantly individuals and/or groups who are not necessarily involved in as a partner RMA in the delivery of a LFRMS action but may still be involved as the action may have an affect the secondary stakeholder. It is subsequently important that Wandsworth Council maintains good relationships with its neighbouring local authorities, local community groups, partnerships and private organisations when performing flood risk management duties within the Wandsworth borough. Engaging with multiple groups will enable a holistic and sustainable approach to flood risk management. These individuals and/or groups will be respected as secondary stakeholders and will have the opportunity to contribute opinions and suggestions through the consultation phase of the LFRMS and at appropriate times during the delivery of any relevant actions.

## 7 ACTION PLAN FOR DELIVERING FLOOD RISK MANAGEMENT BETWEEN 2021-2027

### 7.1 Actions since the previous LFRMS

The previous LFRMS for the Wandsworth borough was published in 2016 and included a detailed action plan containing the tasks and responsibilities that the LLFA and other RMAs should work to complete or support their ongoing delivery. In addition to these actions there have also been other tasks completed since the previous LFRMS which includes guidance updates and plan updates. In the last LFRMS period the LLFA had taken forward an approach to collaborating with a variety of partnerships and communities to help increase the awareness of flood risk from all sources, and methods of Council and individual flood risk management. *Figure 7-1* displays some important highlights in the LLFA's flood risk management delivery. In 2019 the LLFA underwent a review which investigated areas that the LLFA could improve on. In addition to this Wandsworth is in the process of undertaking two CDA feasibility studies in Summerstown and Earlsfield to identify the potential for flood alleviation schemes.

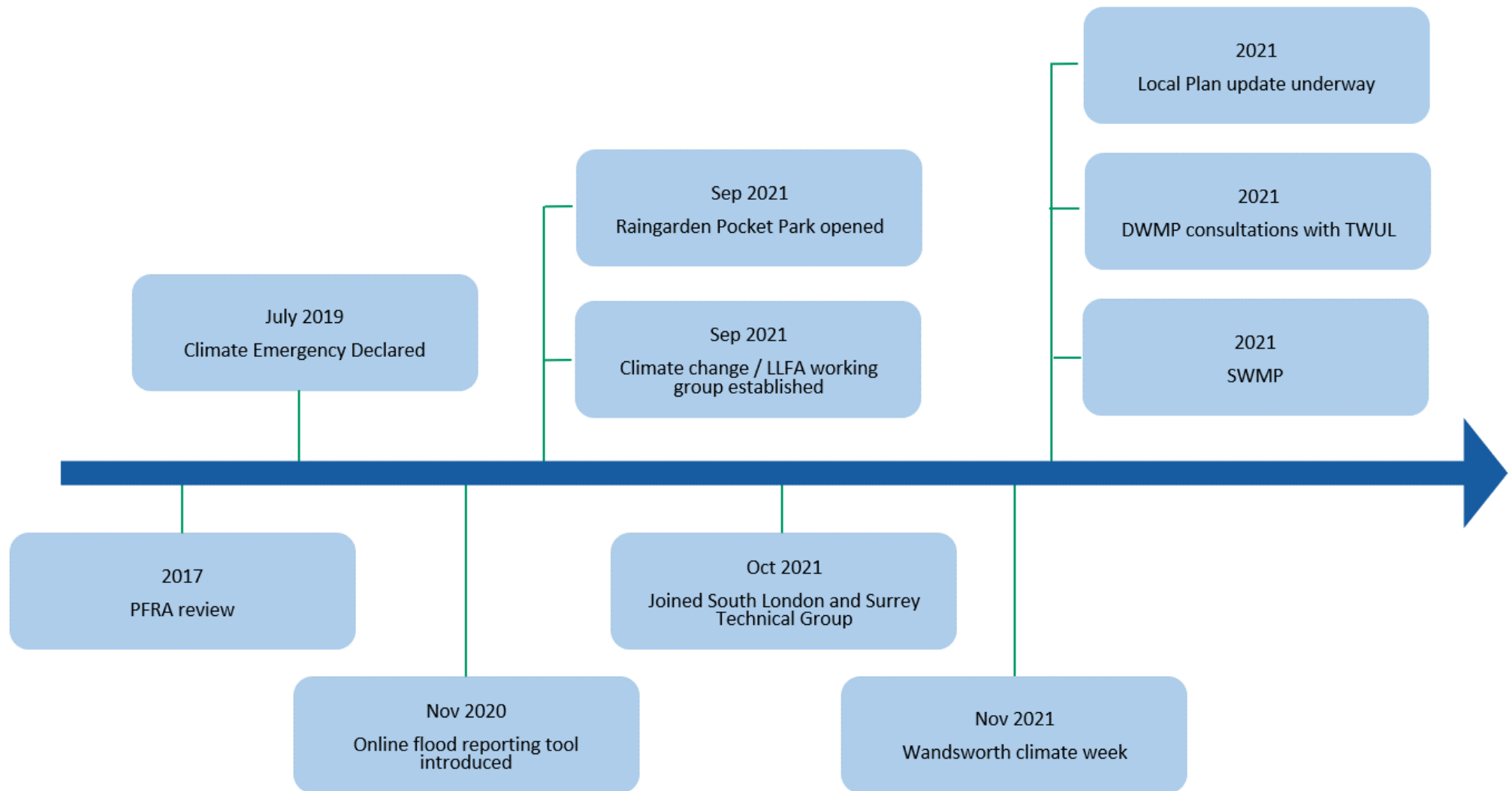


Figure 7-1 Timeline of action milestones since previous LFRMS

## 7.2 Benefits and results

Many actions have been achieved during the six-year period since the Wandsworth borough's previous LFRMS, some of which have offered new opportunities to take forward into this LFRMS for the upcoming six-years. Innovative partnership working is one benefit which has been achieved with the LLFA having partnered with new flood groups such as the South London and Surrey Technical Group. Collaborations through projects such as joint flood risk schemes and flooding investigations has offered multiple advantages to the LLFA by improving communication and driving improvement. The LLFA has also participated in joint engagements with the SWLSFG and the TRFCC (including the EA and TWUL) to manage the recent flooding in Summer 2021. With climate change it is expected that further unexpected flooding occurrences, like those witnessed in the summer of 2021, will increase in the future. Therefore, it is crucial that the benefits of current partnership working are carried forward and that improvements to the communication between RMAs and with residents continues.

## 7.3 New action plan

In preparation for the updated LFRMS a new action plan has been produced, detailing the set actions to be completed in order to work towards each of the LFRMS objectives. These actions follow suit from the previous action plan for the 2015 LFRMS, maintaining existing responsibilities as well as adjustments for project updates and changes to national guidance objectives in the NFCERMS. The process of creating this action plan has included an action plan workshop with relevant internal Council departments, in addition to a consultation period which allows external stakeholders to feedback any comments they have based on their own positions and targets.

The new Action Plan for the Wandsworth borough can be viewed in *Appendix 1 – Action Plan*. Criteria such as timescale and current status have been included for each action detailed in the Action Plan. Timescales for these actions have been set at different ranges which are as follows:

- Short-term = 0-2 years
- Medium-term = 2-4 years
- Long-term 4-6+ years

The status for each action is colour coded to track the progress, these adhere to the following criteria:

- Red = The action is not currently in progress.
- Amber = The action is in progress.
- Green = The action has been completed.



## 7.4 Funding options

There are a number of funding options available for different actions that the LLFA is set to complete through its Action Plan presented in *Appendix 1 – Action Plan*. There are various costs involved for different actions and, depending on the funding required, it is expected that the LLFA will look to a variety of different sources. Strategic Objective C, outlined in *Section 1.6*, focuses on funding and resources with its associated actions setting out steps of how the LLFA will work with partners to trial finance options and close funding gaps.

One type of viable funding is sourced from the Department for Environment, Food and Rural Affairs (DEFRA) which provides funding through its Flood and Coastal Erosion Risk Management (FCERM) Grant in Aid (GiA) fund. To obtain this funding the LLFA must progress through an appraisal process which will test if the proposed scheme / action(s) will benefit the following: (1) benefit properties at risk of flooding, (2) lessen the indirect impacts from flooding (for example, mental health impacts), (3) achieve wider environmental benefits and (4) improve amenity of an area. Projects which might apply for this funding may include flood alleviation schemes or feasibility studies to investigate potential mitigation options. In conjunction with GiA funding, projects can also be eligible for Local Levy funding. The Local Levy funding is managed by the TRFCC and is raised by a levy on local authorities, with the decision committee made up of appointed members by the LLFA and independents, in partnership with the EA.

Additional types of funding may include revenue provided by the Department for Levelling Up, Housing and Communities (DLUHC) which can help to fund general LLFA related duties. It is often the case that the LLFA would put forward an internal business case to bid for the amount of funding they require from the DLUHC revenue. TWUL also offers funding for projects which will help to alleviate pressure on the sewer system, for example, SuDS schemes. As and when flood risk management schemes are prepared, funding will be sought from the appropriate sources listed above. Third party funding sources including benefitting property owners, community groups and charities may also be sought. Wandsworth Council will advertise when this type of funding is being requested for projects taking place in local communities.

## 8 CONCLUSION AND NEXT STEPS

### 8.1 Conclusions

The LFRMS establishes how the LLFA and other stakeholders will manage flood risk within the Wandsworth borough. The LFRMS achieves this by stating past, present and future flood risk and putting forward sufficient actions which will help to address flood risk impacts. There are six areas of focus for the Wandsworth borough which are: knowledge of flooding; development and wider contributions; funding and resources; partnership working; raising awareness of flood risk with local communities, residents and businesses; and emergency response plans and climate change. These each link with the six strategic objectives for this LFRMS:

- A. To improve our knowledge and understanding of the risk of flooding and the interactions between different sources of flooding across the London Borough of Wandsworth.
- B. To encourage appropriately mitigated development across the London Borough of Wandsworth by promoting sustainable multi-beneficial solutions to contribute to wider social, economic, and environmental outcomes.
- C. To seek and identify funding and resources available for a targeted approach to flood risk management.
- D. To proactively manage sources of local flooding to homes, critical infrastructure, and transport networks by establishing and maintaining partnerships with key organisations, including the Environment Agency and Thames Water.
- E. To work with Risk Management Authorities to raise awareness of flood risk with communities, residents, and businesses, and how they can take action to protect themselves and their property by contributing to the management and reduction of flood risk.
- F. To use knowledge of flood risk and climate change projections to inform and adapt the emergency response to flooding within the London Borough of Wandsworth.

Clear actions within the Action Plan, *Appendix 1 – Action Plan*, will guide the LLFA in performing and improving its duties in managing local flood risk. Each action will be monitored at regular intervals, as stated in the Action Plan, over the six year period of this LFRMS (2022-2028). These actions align with the NFCERMS and appropriately consider the impact of climate change and adopts both resilience measures and an adaptive approach. The LFRMS will enable the LLFA to provide holistic, sustainable and resilient local flood risk management measures better protecting residents, businesses and communities.

### 8.2 Next steps

#### 8.2.1 Public consultation

The LFRMS in conjunction with its Action Plan, SEA and HRA will go to public consultation between September and October 2022. This will enable stakeholders, other RMAs and members of the public to review the planned flood risk management duties going forward.

### 8.2.2 Planned action summary

Following a review of feedback from the public consultation a planned action summary will be completed to outline the actions that the LFRMS will focus on beyond its legal duties.

### 8.2.3 Recommended next steps

Following a review of feedback from the public consultation a list of next steps will be developed for the LFRMS.

## 8.3 Monitoring and reviewing

Typically a LFRMS is updated every six-years in line with FRMPs, however the LFRMS may require an update before this if any of the following are met:

- Significant changes are made in the LLFA's understanding of flood risk or flood modelling practices
- Significant modifications in Government guidance and/or legislation

To keep the LFRMS on track and ensure that the relevant RMAs are held accountable when delivering the actions in *Appendix 1 – Action Plan*, a monitoring and reviewing plan has been developed within an internal version of the Action Plan. There are two main purposes to the monitoring and reviewing section of the Action Plan which are:

- To measure the effects of implementing the objectives
- To assist in the identification of any adverse effects

## REFERENCES

[Civil Contingencies Act 2004 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2004/22/section/1/section-1)

[Flooding - Your Rights and Duties \(environmentlaw.org.uk\)](https://www.environmentlaw.org.uk/flooding-your-rights-and-duties)

[Managing flood risk: roles and responsibilities | Local Government Association](#)

[Flood and coastal resilience innovation programme - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/programmes/flood-and-coastal-resilience-innovation-programme)

[Flood risk management: information for flood risk management authorities, asset owners and local authorities - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/flood-risk-management-information-for-flood-risk-management-authorities-asset-owners-and-local-authorities)

[Environment Agency – National Flood and Coastal Erosion Risk Management Strategy for England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/612222/national-flood-and-coastal-erosion-risk-management-strategy-for-england)

## USEFUL LINKS

Below is a table of useful links and descriptions to helpful information on flood risk.

<a href="#">Flooding in the Wandsworth borough</a>	Directory for specific flood advice, including: <ul style="list-style-type: none"><li>• What to do when flooding occurs</li><li>• Reporting instances of flooding</li><li>• Information on the EA's flood warnings</li><li>• Flood insurance guidance</li><li>• Details on when and how flooding investigations will be undertaken</li><li>• Information on flash flooding</li></ul>
<a href="#">What to do before, during and after a flood</a>	Government advice on what to do before, during and after a flood.
<a href="#">Property Owners Flood Guide</a>	Information on: <ul style="list-style-type: none"><li>• Property insurance</li><li>• Dealing with flood risk to properties</li><li>• Installing flood defences to properties</li><li>• Advice on what to do if your property is flooded</li></ul>
<a href="#">Blue Pages</a> – UK Flood Directory	Directory for property flood products and services, also including advice on how to help reduce the risk of flooding to your home or business.
<a href="#">Emergency Flood Plan Template</a>	A useful template for households to use in preparing for a flood, including a checklist and emergency contacts.

## APPENDIX 1 – ACTION PLAN

## APPENDIX 2 – SEA SCREENING REPORT

## APPENDIX 3 – HRA SCREENING REPORT