Northamptonshire Local Flood Risk Management Strategy
Living Document – Interactive PDF
Northamptonshire County Council
November 2016
**Document Status**

All Lead Local Flood Authorities in England are required to develop, maintain, apply and monitor the application of a strategy for local flood risk in their area, which is consistent with the Environment Agency’s National Strategy. This is therefore a **statutory** document.

In Northamptonshire, the County Council is the Lead Local Flood Authority.

The Local Flood Risk Management Strategy is an important document that sets out the management of flood risk in Northamptonshire for the coming years.

As part of its development all key partners have had the opportunity to comment on this strategy. Following full public consultation this strategy was reviewed, updated and finalised as a **living document**.

<table>
<thead>
<tr>
<th>Rev</th>
<th>Date</th>
<th>Details</th>
<th>Author</th>
<th>Checked and approved by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16th June 2016</td>
<td>Draft report for consultation</td>
<td>R Burnham, Senior Flood and Water Officer</td>
<td>J Bateman, Flood and Water Manager</td>
</tr>
<tr>
<td>2</td>
<td>9th November 2016</td>
<td>Final report for Cabinet</td>
<td>R Burnham, Senior Flood and Water Officer</td>
<td>J Bateman, Flood and Water Manager</td>
</tr>
<tr>
<td>3</td>
<td>14th November 2017</td>
<td>Minor amendments and linked to updated Asset Register.</td>
<td>P Jones, Senior Environment Officer</td>
<td>J Bateman, Flood and Water Manager</td>
</tr>
</tbody>
</table>

**Accompanying Documents**

The Local Flood Risk Management Strategy (LFRMS) is accompanied by a number of separate documents, as follows:

- A non-technical Executive Summary of this strategy, as an easy reference guide;
- The Northamptonshire Flood Risk Prioritisation Assessment;
- The LFRMS Action Plan;
- Strategic Environmental Assessment and Habitats Regulation Assessment reports;
- An Equalities Impact Assessment report; and
- A Communication, Engagement and Consultation Strategy, developed to support the LFRMS and related flood and water management work.
CONTENTS

1. INTRODUCTION .................................................................................................................................................. 1
   Objectives of the Local Flood Risk Management Strategy ................................................................................ 2
   Local Flood Risk Management Actions and Measures .................................................................................. 3

2. WHAT IS FLOODING? ......................................................................................................................................... 4
   What causes flooding? ....................................................................................................................................... 4
   What types of flood risk are there? .................................................................................................................. 5
   Flood Risk in Northamptonshire .................................................................................................................. 6
      Watercourses in West Northamptonshire .................................................................................................. 7
      Watercourses in North Northamptonshire ................................................................................................. 8

3. ROLES AND RESPONSIBILITIES .................................................................................................................. 11
   Lead Local Flood Authority .......................................................................................................................... 11
   Water and Sewerage Companies .................................................................................................................. 17
   Internal Drainage Boards ............................................................................................................................. 17
   District and Borough Councils ..................................................................................................................... 17
   The Environment Agency .............................................................................................................................. 19
   Highways Authority ....................................................................................................................................... 20
   Highways England .......................................................................................................................................... 21
   Riparian Owners ............................................................................................................................................... 21
   Parish Councils .............................................................................................................................................. 21
   Other Bodies ................................................................................................................................................... 22

4. LOCAL PARTNERSHIPS, GOVERNANCE AND SCRUTINY ................................................................................. 25
   Local Partnership and Governance Arrangements ......................................................................................... 25
   Strategic Flood Risk Management Board ..................................................................................................... 25
   Local Flood Risk Operational Group ............................................................................................................ 26
   The Local Resilience Forum .......................................................................................................................... 27
   Regional Flood and Coastal Committees ....................................................................................................... 27
   Scrutiny Arrangements .................................................................................................................................... 27
   Cross-Catchment Working ............................................................................................................................. 28

5. ASSESSMENT OF LOCAL FLOOD RISK IN NORTHAMPTONSHIRE ................................................................. 29
   Historic Flooding in Northamptonshire ......................................................................................................... 29
   Potential Flood Risk in Northamptonshire ..................................................................................................... 32

6. STRATEGY OBJECTIVES FOR MANAGING LOCAL FLOOD RISK ............................................................... 35
   Objective 1: Collaborative Approach ........................................................................................................... 37
      Partnership working ..................................................................................................................................... 37
      Secure and Optimise Human Resources .................................................................................................... 37
      Public Engagement in Strategy Development and Delivery ...................................................................... 37
   Objective 2: Local Flood Risk ....................................................................................................................... 37
      Surface Water Management Plans ........................................................................................................... 38
      Flood Reporting, Recording and Investigating .......................................................................................... 38
      Asset Maintenance ....................................................................................................................................... 40
      Asset Register ............................................................................................................................................. 41
      Data Management Protocols ..................................................................................................................... 41
   Objective 3: Enhance the Natural and Historic Environment ......................................................................... 41
Undertake a Strategic Environmental Assessment, Habitat Regulation Assessment and Water Framework Directive Compliance Check ......................................................... 42
Additional Flood Storage Attenuation .................................................................. 43
Natural Resilience ............................................................................................... 43
Provide Blue and Green infrastructure ............................................................... 43
De-Culverting ....................................................................................................... 44
Review Land Management Methods ................................................................... 45
Increased Tree Coverage ...................................................................................... 46
Objective 4: Preparedness and Resilience .......................................................... 46
Active Enforcement, Maintenance and Inspection ................................................. 47
Improve Emergency Planning, Response and Recovery to Flooding ................. 47
Improve Public Awareness and Understanding of Flooding and Flood Risk Management ........................................................................................................ 48
Promote Flood Resilience and Resistance Measures and Property Level Protection .... 48
Promote Flood Protection Insurance .................................................................... 48
Objective 5: Flood Risk and Development ............................................................ 49
Implementation of Sustainable Drainage and Source Control Measures ............ 49
Production of Guidance ...................................................................................... 50
Utilisation of Designation Powers ....................................................................... 51
Consenting Powers for Works Affecting Ordinary Watercourses ....................... 51
Consenting Policy Requirements ......................................................................... 52
Objective 6: Economically Sustainable Approach ............................................... 54
Working Together ............................................................................................... 55
Prioritised Approach .......................................................................................... 55
Identification of Funding Sources ....................................................................... 56
What can be Afforded? ....................................................................................... 56
Partnership Funding ........................................................................................... 57
Programme of Works .......................................................................................... 57
Local Requirements ............................................................................................. 57
Objective 7: Riparian Responsibilities .................................................................. 58
Active Engagement and Advice ........................................................................... 58
Active encouragement and enforcement of flood risk management activities by Riparian Owners ..................................................................................................... 58
Advice on How to Resolve Nuisance Flooding .................................................... 58
Advice on Mediation and Legal Proceedings ....................................................... 59

7. ACTION PLAN ................................................................................................. 60

8. STRATEGY MONITORING AND REVIEW ...................................................... 61

MONITORING ..................................................................................................... 61

APPENDIX 1: GLOSSARY .................................................................................. 62

APPENDIX 2: ABBREVIATIONS .......................................................................... 70

APPENDIX 3: MAPS ............................................................................................ 71

APPENDIX 4: FLOOD AND WATER RELATED STUDIES AND STRATEGIES ....... 80

APPENDIX 5: LEGISLATIVE CONTEXT ................................................................ 83

APPENDIX 6: RIVER BASIN MANAGEMENT PLANS, WATER FRAMEWORK DIRECTIVE AND CATCHMENT FLOOD MANAGEMENT PLANS ......................................................... 88

APPENDIX 7: FLOOD RISK MANAGEMENT FUNDING MECHANISMS ................ 95

APPENDIX 8: CIVIL CONTINGENCIES AND COMMUNITY RESILIENCE ............ 99

Northamptonshire Local Flood Risk Management Strategy (LFRMS) (November 2016)
Tables

APPENDIX 9: PROTOCOLS FOR DATA MANAGEMENT ........................................ 103

Tables

TABLE 3.1: NCC FLOOD RISK MANAGEMENT FUNCTIONS .................................................. 12
TABLE 3.2: ROLES AND RESPONSIBILITIES OF FLOOD RISK MANAGEMENT AUTHORITIES ............. 23
TABLE 5.1 SIGNIFICANCE OF FLOOD EVENTS IN NORTHAMPTONSHIRE .......................................................... 30
TABLE 5.2 FIFTEEN MOST AT RISK WARDS IN NORTHAMPTONSHIRE BASED ON OVERALL COMBINED RISK OF FLOODING .................................................................................................................. 32
TABLE 5.3 FIFTEEN MOST AT RISK WARDS IN NORTHAMPTONSHIRE BASED ON FLUVIAL FLOODING ........ 33
TABLE 5.4 FIFTEEN MOST AT RISK WARDS IN NORTHAMPTONSHIRE BASED ON SURFACE WATER FLOODING . 33
TABLE 5.5 FIFTEEN MOST AT RISK WARDS IN NORTHAMPTONSHIRE BASED ON GROUND WATER .......... 34
TABLE 6.1: COMPARISON OF NATIONAL STRATEGY OBJECTIVES WITH LFRMS OBJECTIVES .............. 35
TABLE 6.2: IMPACTS TO BE CONSIDERED IN THE CULVERT DESIGN ......................................................... 44

TABLE A 1 WATER FRAMEWORK DIRECTIVE COMPLIANCE CHECK 88
TABLE A 2 CFMP POLICY COMPLIANCE 92
TABLE A 3 RFCC AREAS AND LEVELS OF LEVY 97
TABLE A 4 KEY PLANS 99
TABLE A 5 ACTIONS, ROLES AND RESPONSIBILITIES OF PARTNERS 100

Figures

FIGURE 1-1: WHAT THE STRATEGY INCLUDES ......................................................................................... 1
FIGURE 4-1: NORTHAMPTONSHIRE PARTNERSHIP MODEL ................................................................. 25

Maps

MAP 1: MAIN RIVERS IN WEST NORTHAMPTONSHIRE ........................................................................... 9
MAP 2: MAIN RIVERS IN NORTH NORTHAMPTONSHIRE ....................................................................... 10
MAP 3: HISTORIC LOCAL FLOOD INCIDENTS ....................................................................................... 31

MAP A 1: WATER COMPANY BOUNDARIES 71
MAP A 2: INTERNAL DRAINAGE BOARD BOUNDARY 70
MAP A 3: DISTRICT AND BOROUGH BOUNDARIES 71
MAP A 4: GROUND WATER FLOOD RISK 72
MAP A 5: RISK OF FLOODING FROM SURFACE WATER 73
MAP A 6: RISK OF FLOODING FROM RIVERS AND SEA 74
MAP A 7: FLOOD MAP FOR PLANNING (RIVERS AND SEA) 77
MAP A 8: EXISTING BIODIVERSITY ACTION PLAN HABITATS 77
MAP A 9: WATER FRAMEWORK DIRECTIVE WATER QUALITY 78
MAP A 10: CFMP POLICY UNITS 94
1. INTRODUCTION

1.1. The Flood and Water Management Act 2010 implemented recommendations from Sir Michael Pitt's Review of the 2007 floods in the UK. Under the Act the County Council became a ‘Lead Local Flood Authority’ (LLFA) and was given a series of new responsibilities to coordinate the management of local flood risk from surface water, groundwater and ordinary watercourses.

1.2. As LLFA for Northamptonshire, the County Council is required to ‘develop, maintain, apply and monitor’ a Local Flood Risk Management Strategy. The strategy will focus on local flood risk resulting from surface water, groundwater and ordinary watercourses flooding. The interaction with main river flooding has also been assessed. The strategy was first published in 2013, and this is the first revision.

1.3. The strategy will be the tool through which the LLFA discharges its role to provide leadership and co-ordinate flood risk management on a day to day basis. It will act as the focal point for integrating all flood risk management functions in the county and will have regard to the Environment Agency’s National Flood and Coastal Erosion Risk Management Strategy.

1.4. The Flood and Water Management Act states that the Local Flood Risk Management Strategy must specify:
   - The risk management authorities in the area;
   - The flood risk management functions that may be exercised by those authorities;
   - The objectives for managing local flood risk;
   - The measures proposed to achieve those objectives;
   - How and when the measures are expected to be implemented;
   - The costs and benefits of those measures, and how they may be paid for;
   - The assessment of local flood risk;
   - How and when the strategy is to be reviewed; and
   - How the strategy contributes to the achievement of wider environmental objectives.

Figure 1-1: What the Strategy Includes

**Objectives of the Local Flood Risk Management Strategy**

1.6. The overarching aim of this Strategy is to provide a robust local framework that employs a full range of complementary approaches towards managing and communicating the risks and consequences of flooding arising from all sources of flood risk for Northamptonshire. A specific focus on local sources of flood risk will be provided (flooding from surface water runoff, groundwater and flooding from ordinary watercourses).

1.7. The objectives by which the County Council will achieve this vision are set out below. Actions and measures that have been developed to achieve these objectives are set out in Section 6 of this Strategy:

<table>
<thead>
<tr>
<th>Local Flood Risk Management Strategy Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Collaborative Approach</strong> – Adopt a collaborative approach to managing local flood risk by working with local partners and stakeholders to identify, secure and optimise resources, expertise and opportunities for reducing flood risk and increasing resilience to flooding;</td>
</tr>
<tr>
<td>2. <strong>Local Flood Risk</strong> – Develop a greater understanding of local flood risk by improving the scope of local knowledge and understanding of current and future local flood risks;</td>
</tr>
<tr>
<td>3. <strong>Enhance the Natural and Historic Environment</strong> – Adopt a sustainable approach to reducing local flood risk, seeking to lessen the risk of localised flooding using mechanisms that are economically viable, deliver wider environmental benefits, conserve and enhance heritage assets and their settings, and promote the wellbeing of local people;</td>
</tr>
<tr>
<td>4. <strong>Preparedness and Resilience</strong> – Reduce the harmful consequences of local flooding to communities and human health through proactive actions, activities and education programmes that enhance preparedness and resilience to local flood risk, and contribute to minimising community disruption;</td>
</tr>
<tr>
<td>5. <strong>Flood Risk and Development</strong> – Minimise the increase in local flood risk that may arise from new development by producing guidance, setting standards, promoting the sustainable use of water and supporting the development of local policies and guidance, discouraging wherever possible surface water runoff in new and future developments and where possible influencing or supporting developments that seek to reduce existing flood risk;</td>
</tr>
<tr>
<td>6. <strong>Economically Sustainable Approach</strong> – Ensure the financial viability of flood related schemes through the development of appropriate policies and assessment tools to ensure that flood risk management measures provide value for money whilst minimising the long-term revenue costs. Seeking to use natural processes where possible or source the costs of any maintenance from the financial beneficiaries of the development;</td>
</tr>
<tr>
<td>7. <strong>Riparian Responsibilities</strong> – Encourage flood management activities by private owners of ordinary watercourses and flood defence structures as well as limit the development of constrictions on ordinary watercourses.</td>
</tr>
</tbody>
</table>
Local Flood Risk Management Actions and Measures

1.8. The associated Action Plan document for delivering the above objectives contains a mix of long-standing, on-going high-level actions and short-term, time bound activities that are driven by partnership working. The integrated approach to delivering the broad aim of this Strategy means that although specific actions and measures have been proposed to promote the achievement of particular objectives, some actions will inevitably help to achieve more than one objective. A detailed explanation of how each of the objectives will be met is provided in Section 6 of this Strategy, with the Action Plan provided as a separate document for ease of updating.
2. **WHAT IS FLOODING?**

2.1. There are few places in the United Kingdom where people need not be concerned about flooding. Any place where rain falls is vulnerable, although rain is not the only impetus for flood.

2.2. Flooding is determined by factors in the surrounding landscape, such as steepness of the land, the amount of vegetation and geology. A flood occurs when water overflows or inundates land that is normally dry. This can happen in a multitude of ways as set out below.

2.3. Many floods take hours or even days to develop, giving residents ample time to prepare or evacuate. Others generate quickly and with little warning. These flash floods can be extremely dangerous, instantly turning a babbling brook into a raging torrent. But flooding, particularly in river floodplains, is a natural process that has been occurring for millions of years.

**What causes flooding?**

2.4. A flood occurs when water overflows, inundates and accumulates on land that is normally dry. This can happen in a multitude of ways as set out below. Flooding is determined by factors in the surrounding landscape, such as steepness of the land, the amount of vegetation and geology.

2.5. Many floods take hours or even days to develop, giving residents ample time to prepare or evacuate. Others generate quickly and with little warning. These flash floods can be extremely dangerous.

2.6. **Weather events:** Flooding is normally caused by natural weather events such as:

- Heavy rainfall and thunderstorms over a short period;
- Prolonged, extensive rainfall; or
- Snow melt.

2.7. It is predicted that the impacts of climate change on the weather will increase the risk of flooding in the UK and other parts of the world. The following factors can also cause or contribute to flooding:

2.8. **Increased pressure on the sewerage network,** caused by:

- Population growth;
- Urban creep (paving over of green spaces that provide natural drainage);
- Putting unsuitable products down the toilet or sink; or
- Cumulative effects of foul waste mixing with rainwater in combined sewer systems, especially in urban areas.

2.9. **Poor maintenance:**

- Faulty sewer networks;
- Poor or insufficient drainage networks; and
- Inadequate maintenance of watercourses.

2.10. **Development and planning issues:**

- Inappropriate development in floodplains;
- Building on land in a way that prevents rainfall from draining away naturally. This includes roads and car parks that are impermeable to water. They can increase the risk of flooding from rainwater runoff; or
- Flood defence schemes that are defective or badly designed.
What types of flood risk are there?

2.11. The definition of ‘risk’ is the combination of the probability (likelihood or chance) of an event happening and the consequences (impact) if it occurred (Risk = Probability x Consequence). There are numerous different sources of risk, as summarised below and on the Northamptonshire Flood Toolkit through the following link: www.floodtoolkit.com/risk/about-flooding/.

2.12. **Surface water flooding**, also known as pluvial flooding, occurs when rainfall generates runoff which flows over the surface of the ground and ponds in low lying areas. It is usually associated with high intensity rainfall events (typically greater than 30 millimetres per hour) and can be exacerbated when the ground is saturated or when the drainage network has insufficient capacity to cope with the additional flow.

2.13. Flooding occurs as a result of the rainfall that does not soak into the land or enter a drainage system or water course, but remains on the surface. Runoff does not necessarily cause a problem if it flows straight into drains or watercourses, or on to land where it can quickly soak away. However in some cases runoff flows onto the road creating a hazard in winter conditions, or into people’s homes or onto their land where it can cause damage and disruption. Runoff may also pass into small ditches or channels that run through or adjacent to property; if not maintained these flow routes can become ineffective and flooding may occur. Surface water can also be caused by flood water coming out of a drainage system where capacity is exceeded.

2.14. Surface water flooding can also originate from farmland. This is a particular risk where soil has been compacted or vegetation removed, either seasonally by ploughing or temporarily as topsoil is stripped to allow for development, as rainwater is no longer able to quickly soak into the ground. Instead the rainwater flows over the land, carrying soil with it to create a “muddy flood”. The farmland itself can be damaged because the floodwater can carry away topsoil and even crops.

2.15. Northamptonshire has 83,781 residential properties predicted to be at risk of surface water flooding.

2.16. **Groundwater flooding** occurs when the water table rises and water levels in the ground rise above the ground surface. Flooding of this type tends to occur after long periods of sustained heavy rainfall and can last for weeks or even months. The areas at most risk are often low-lying areas where the water table is more likely to be at a shallow depth and flooding can be experienced through water rising up from the underlying aquifer or from water flowing from springs. Flooding from groundwater is most common in areas where the underlying bed rock is chalk, but it can also happen in locations with sand and gravel in the river valleys.

2.17. Northamptonshire has just over 21,000 residential properties predicted to be affected by groundwater flooding.

2.18. The main causes and impacts of groundwater flooding include:

- Rise of typically high groundwater levels to extreme levels in response to prolonged intense rainfall;
- Rising groundwater levels in response to reduced groundwater abstraction in an urban area (termed groundwater rebound) or a mining area (termed mine water rebound);
- Subsidence of the ground surface below the current groundwater level;
- Rise of groundwater levels due to leaking sewers, drains and water supply mains;
- Faulty borehole headworks or casings causing upward leakage of groundwater driven by high pressure underground;
• Increases in groundwater levels and changed flow paths due to artificial obstructions or pathways, and loss of natural storage and drainage paths.

2.19. **River flooding**, also known as fluvial flooding, occurs when a watercourse cannot accommodate the volume of water that is flowing into it. Rivers are categorised into main rivers and ordinary watercourses. Main rivers are usually large watercourses but also include smaller watercourses of strategic drainage importance. Smaller watercourses, ditches and streams are classified as ordinary watercourses. Ordinary watercourses in Northamptonshire are those not defined as main rivers. The main rivers have been identified on Map 1 and Map 2 below. These can also be viewed on the Flood Toolkit interactive map through the following link: www.floodtoolkit.com/risk/. Northamptonshire has a number of large main rivers and associated tributaries, which all present some degree of flood risk in addition to the vast network of ordinary watercourses. Northamptonshire has approximately 6,215 residential properties predicted to be affected by fluvial flood risk.

2.20. **Reservoir flooding** results from the complete or partial failure of a reservoir structure. It may be caused by erosion due to seepage, overtopping of the dam beyond its design level or through accidental damage to the structure. It must be noted that reservoir failure is extremely rare.

2.21. Canals are generally designed to enable them to cope with flood waters. These artificial watercourses rarely flood because water levels are managed closely for navigation. Most canals have overflow sluices that run off into small rivers and streams. High intensity rainfall however can cause **canal flooding** when draining canals do not have the necessary capacity to drain away the amount of falling rain. There is also a risk of flooding from failure of a canal structure similar to reservoir failure, where the canal is raised above surrounding ground levels; however this is similarly rare.

2.22. **Sewer flooding** occurs when the sewer network cannot cope with the volume of water that is entering it or when pipes within the network become blocked. This type of flooding is often experienced during times of heavy rainfall when large amounts of surface water overwhelm the sewer network causing flooding. Northamptonshire has approximately 819 properties that have been affected by sewer flooding.

2.23. **Highway flooding** can be defined as flooding caused by heavy rainfall or overflowing from blocked drains and gullies causing water to pond within the highway network.

2.24. **Snowmelt** can cause significant flooding. Unlike rainfall, which reaches the soil almost immediately, snow stores the water for some time until it melts, delaying the arrival of water at the soil for days or weeks. Long periods of snow also mean that the water is stored and accumulates, so the melt results in a significant volume of runoff in a short space of time. Snowmelt flooding can be exacerbated where the ground remains frozen during the snowmelt as this significantly reduces the permeability of the ground. The "average" snow to liquid ratio is 10:1, e.g. 10 cm of snowfall would produce an equivalent volume of runoff once melted as 1 cm of rainfall.

2.25. **Drought related flooding** occurs if the soil becomes very dry, which can then lead to increased surface water flooding. Often flood alerts are issued in times of drought relating to flash flooding. A combination of heavy rainfall and poor drainage due to dry, hard surfaces can also cause rivers to rise quickly and overflow.

**Flood Risk in Northamptonshire**

2.26. The nature of flood risk within Northamptonshire is extremely varied and widespread across the county. Northamptonshire has an extensive network of rivers and canals,
combined with a large number of towns and extremely rural surroundings. This means that Northamptonshire is therefore at risk of flooding from a range of different sources.

**Watercourses in West Northamptonshire**

2.27. The main catchments within West Northamptonshire drain from west to east with the exception of the River Cherwell catchment, which flows from north to south. The River Nene, River Great Ouse (including River Tove), River Cherwell and their tributaries all rise within West Northamptonshire. The upper reaches of these catchments are classed as being ‘flashy’ due to the underlying hard rock geology, leading to relatively short catchment response times. In addition to the above watercourses there are also interactions with the Grand Union Canal (*with River Nene*) and the Oxford Canal (*with River Cherwell*). A map of the main rivers within West Northamptonshire is provided below in [Map 1](#). These can also be viewed on the Flood Toolkit interactive map through the following link: [www.floodtoolkit.com/risk/](http://www.floodtoolkit.com/risk/)

2.28. **River Nene:** The catchment of the River Nene covers the majority of Daventry District and Northampton Borough. The River Nene rises on the mainly clay soils of the Northampton Uplands at sources near Badby, Naseby and Yelvertoft and then crosses the gently undulating rural land to the flat plains of Peterborough. From here, the Nene is embanked across the low-lying land of the Fens, in its course to The Wash. The principal tributaries of the River Nene within West Northamptonshire are:

- Wootton Brook;
- The Kislingbury Branch; and
- The Brampton Branch.

2.29. Northampton lies at the confluence of the River Nene’s main upper tributaries, which include the Kislingbury Branch, the Brampton Branch and Wootton Brook. Through Northampton, the river is defended and the Northampton Washlands and Upton flood attenuation area compensate for the effect of upstream development on flow downstream. The Washlands consist of an area of former gravel workings into which floodwaters are diverted and stored for controlled release when required.

2.30. **River Great Ouse:** The Great Ouse river system starts in Northamptonshire (near Brackley), passing through Buckingham, Newport Pagnell, Bedford, St Neots, St Ives and Earith before crossing the Fens and flowing into The Wash. The River Tove and other tributaries of the Great Ouse in Northamptonshire, such as Silverstone Brook and Wood Burcote Brook, are also important watercourses in West Northamptonshire.

2.31. **The River Avon:** The River Avon is a major left-bank tributary of the River Severn. It rises near to the village of Naseby, Daventry, and flows through the counties of Northamptonshire, Leicestershire, Warwickshire, Worcestershire and Gloucestershire. Tributaries of the River Avon include: Clifton Brook; Clay Coton Brook; and Yelvertoft Brook.

2.32. **River Cherwell:** The River Cherwell rises at Hellidon to the south east of Daventry, flowing in a southerly direction through parts of Daventry District and South Northamptonshire, and ultimately into the River Thames.

2.33. **River Leam:** The River Leam rises at Hellidon Hill near Daventry then flows to the west into the Warwickshire Avon. It is a tributary of the River Severn but also has its own tributary in Northamptonshire, known as Rains Brook, which runs between the villages of Barby and Kilsby.
Watercourses in North Northamptonshire

2.34. The vast majority of North Northamptonshire is located within the River Nene catchment. The northern extents fall within the River Welland catchment and the south eastern extent is located within the Great Ouse catchment.

2.35. The principal watercourses in North Northamptonshire are:

- The River Nene and its main tributaries, the River Ise, Harpers Brook, Alledge Brook, Slade Brook and Willow Brook; and
- The River Welland and its main tributary the River Jordan.

2.36. A map of the main rivers within North Northamptonshire is provided below in Map 2. These can also be viewed on the Flood Toolkit interactive map through the following link: www.floodtoolkit.com/risk/
Map 1: Main Rivers in West Northamptonshire

NCC Local Flood Risk Management Strategy
Main Rivers in West Northamptonshire
Map 1

Legend
- NCC boundary
- Borough and District boundaries
- Main River
- Canal

© Crown copyright. All rights reserved. Northamptonshire County Council. Licence No. 100018331.
3. ROLES AND RESPONSIBILITIES

3.1. Numerous organisations, agencies, authorities and individuals have roles and responsibilities relating to flood risk management. This section sets out what these roles and responsibilities are for each of the different organisations, agencies and authorities.

3.2. Part 1, Section 6 (13) of the Flood and Water Management Act defines the following as flood risk management authorities:

- The Environment Agency;
- A Lead Local Flood Authority;
- A District Council for an area for which there is no unitary authority;
- An Internal Drainage Board;
- A Water Company; and
- A Highway Authority.

3.3. Under Section 13(4) of the Act, a risk management authority can arrange for a flood risk management function to be exercised on its behalf by another risk management authority. A flood risk management function is defined in the Land Drainage Act 1991 as including anything done to maintain, operate, improve, alter or remove existing works, to construct or repair new works, to maintain or restore natural processes, to monitor, investigate or survey a location or natural process, or to increase or reduce the level of water.

Lead Local Flood Authority

3.4. The County Council is a Lead Local Flood Authority (LLFA) and as such is responsible for the coordination and management of flood risk from surface water runoff, ordinary watercourses and groundwater.

3.5. The following table sets out all of the functions that the County Council can exercise under the Flood and Water Management Act (2010) and the Flood Risk Regulations (2009). The table outlines whether or not these functions are a duty or a permissive power, the national and local deadlines that are in place (if any) and how far along the County Council is to achieving these deadlines. For each function, a reference point for further information within this Strategy is provided.

3.6. The County Council’s preferred approach is to work in partnership with all relevant stakeholders and flood risk management authorities, in order to deliver the objectives of this Strategy.
### Table 3.1: NCC Flood Risk Management Functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Legislation</th>
<th>Explanation</th>
<th>Duty or Power</th>
<th>National Deadline</th>
<th>NCC Deadline</th>
<th>Strategy Reference Point</th>
</tr>
</thead>
</table>
| Local Flood Risk Management Strategy | Flood & Water Management Act (2010)               | Develop, maintain, apply and monitor a strategy for local flood risk management of the area for surface water runoff, groundwater and ordinary watercourses. The strategy must specify:  
  - The risk management authorities in the authority’s area;  
  - The flood and coastal erosion risk management functions that may be exercised by those authorities in relation to the area;  
  - The objectives for managing local flood risk;  
  - The measures proposed to achieve those objectives;  
  - How and when the measures are expected to be implemented;  
  - The costs and benefits of those measures, and how they are to be paid for;  
  - The assessment of local flood risk for the purpose of the strategy;  
  - How and when the strategy is to be reviewed; and  
  - How the strategy contributes to the achievement of wider environmental objectives.  
  
  The strategy must be consistent with the Environment Agency’s [National Flood & Coastal Erosion Risk Management Strategy](#).  
  
  The LLFA must consult all affected risk management authorities and the public about the strategy, and produce a summary of the strategy. | Duty           | April 2016           | First published October 2013 | This document |
<p>| Co-operation and joint working arrangements | Flood &amp; Water Management Act (2010)               | Authorities must co-operate with each other in exercising functions. Authorities can also delegate functions to each other by local agreement.                                                          | Duty           | Ongoing           | Ongoing           | Section 6 - Strategy Objectives |</p>
<table>
<thead>
<tr>
<th>Function</th>
<th>Legislation</th>
<th>Explanation</th>
<th>Duty or Power</th>
<th>National Deadline</th>
<th>NCC Deadline</th>
<th>Strategy Reference Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power to request information</td>
<td>Flood &amp; Water Management Act (2010)</td>
<td>LLFAs and the Environment Agency may request information from an individual in relation to the authority’s risk management functions. The information must be provided in the form/manner and period specified within the request. Enforcement action may be taken if the individual neglects to comply with the request. A financial penalty may also be imposed.</td>
<td>Power</td>
<td>Ongoing</td>
<td>Ongoing</td>
<td>Section 6 - Strategy Objectives</td>
</tr>
<tr>
<td>Creation and maintenance of an asset register</td>
<td>Flood &amp; Water Management Act (2010)</td>
<td>This section requires LLFAs to establish and maintain a register of structures, or features, which may significantly affect flood risk in their administrative area and also provide a record of information about such structures and features, including ownership and state of repair. The register must be available for public inspection at all reasonable times. This requirement does not apply to the record which may contain personal or other confidential data. The method by which inspection of the register is provided is not specified in the legislation.</td>
<td>Duty</td>
<td>Not set</td>
<td>Asset identification ongoing</td>
<td>Section 6 - Strategy Objectives</td>
</tr>
<tr>
<td>Investigation of flooding incidents</td>
<td>Flood &amp; Water Management Act (2010)</td>
<td>The purpose of this provision is to require the LLFA to investigate flooding incidents where appropriate, so as to try and ascertain where responsibility for managing the flood risk lies and what is being done about it. The LLFA must publish the results of any investigation and notify any relevant flood risk management authority of those results.</td>
<td>Duty</td>
<td>Ongoing</td>
<td>Ongoing</td>
<td>Section 6 - Strategy Objectives</td>
</tr>
<tr>
<td>Sustainable Development</td>
<td>Flood &amp; Water Management Act (2010)</td>
<td>In exercising its risk management functions, all risk management authorities must contribute towards achievement of sustainable development.</td>
<td>Duty</td>
<td>Ongoing</td>
<td>Ongoing</td>
<td>Section 6 - Strategy Objectives</td>
</tr>
<tr>
<td>Function</td>
<td>Legislation</td>
<td>Explanation</td>
<td>Duty or Power</td>
<td>National Deadline</td>
<td>NCC Deadline</td>
<td>Strategy Reference Point</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-------------------</td>
<td>--------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Designation of Features</td>
<td>Flood &amp; Water Management Act (2010)</td>
<td>This Schedule to the Act provides additional legal powers for certain authorities in England and Wales to formally designate assets or features which affect flood risk. It increases the regulatory control of the significant number of assets or features, which form flood risk management systems, but which are not maintained or operated by those formally responsible for managing the risk. Once a feature is designated, the owner must seek consent from the designating authority to alter, remove, or replace it. A series of conditions have to be met prior to designation.</td>
<td>Power</td>
<td>Ongoing</td>
<td>Ongoing</td>
<td>Section 6 - Strategy Objectives</td>
</tr>
<tr>
<td>Land Drainage Act 1991 consenting and enforcement powers</td>
<td>Flood &amp; Water Management Act (2010)</td>
<td>With the provisions in the Flood and Water Management Act 2010, powers relating to consenting and enforcement on ordinary watercourses moved from the Environment Agency to LLFAs outside areas under the jurisdiction of an Internal Drainage Board (IDB) where relevant.</td>
<td>Duty</td>
<td>Ongoing</td>
<td>Consenting delegated to the Bedford Group of IDBs on 6 April 2012, ongoing</td>
<td>Section 6 - Strategy Objectives</td>
</tr>
<tr>
<td>Function</td>
<td>Legislation</td>
<td>Explanation</td>
<td>Duty or Power</td>
<td>National Deadline</td>
<td>NCC Deadline</td>
<td>Strategy Reference Point</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------------</td>
<td>-------------------</td>
<td>-------------</td>
<td>-------------------------</td>
</tr>
</tbody>
</table>
| Surface Water Drainage – Statutory Consultee Role to the planning application process. | Article 2(1) of the Town and Country Planning Development Management Procedure (England) Order 2015 | On the 24th March 2015, the Government laid a statutory instrument making the County Council, as Lead Local Flood Authority (LLFA), a statutory consultee to the planning application process for major development only that have surface water drainage implications. Major development is defined as development involving any one or more of the following:  
- (a) the winning and working of minerals or the use of land for mineral-working deposits;  
- (b) waste development;  
- (c) the provision of dwellinghouses where—  
  - (i) the number of dwellinghouses to be provided is 10 or more; or  
  - (ii) the development is to be carried out on a site having an area of 0.5 hectares or more and it is not known whether the development falls within sub-paragraph (c)(i);  
- (d) the provision of a building or buildings where the floor space to be created by the development is 1,000 square metres or more; or  
- (e) development carried out on a site having an area of 1 hectare or more. | Duty | Ongoing | Ongoing | Section 6 - Strategy Objectives |
<p>| General Powers: Flood Risk Management Works | Flood &amp; Water Management Act (2010) | LLFAs have powers to undertake works to manage surface water runoff and groundwater flood risks. Powers to do works on ordinary watercourses remain with the district authorities and IDBs in Drainage Board Districts. | Power | Ongoing | Ongoing | Appendix 5 - Legislative Context |</p>
<table>
<thead>
<tr>
<th>Function</th>
<th>Legislation</th>
<th>Explanation</th>
<th>Duty or Power</th>
<th>National Deadline</th>
<th>NCC Deadline</th>
<th>Strategy Reference Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify areas of significant flood risk</td>
<td>Flood Risk Regulations (2009)</td>
<td>Ministerial guidance has been published about the criteria for assessing whether a risk of flooding is significant. The Environment Agency has used the Flood Map for Surface Water and the Defra guidance to produce indicative flood risk areas. It is important to note that no Indicative Flood Risk Areas have been identified in Northamptonshire.</td>
<td>Duty</td>
<td>22 December 2011</td>
<td>Completed 22 June 2011 and updated June 2017</td>
<td>Appendix 5 - Legislative Context</td>
</tr>
<tr>
<td>Production of flood hazard maps and flood risk maps</td>
<td>Flood Risk Regulations (2009)</td>
<td>For each indicative flood risk area identified (which Northamptonshire has none, see above) surface water flood risk and hazard maps are required. The Environment Agency must also prepare the flood risk and hazard maps for flood risk from the sea, main rivers and reservoirs. The Environment Agency has agreed to undertake the production surface water flood risk and hazard maps for the whole country.</td>
<td>Duty</td>
<td>December 2013</td>
<td>N/A</td>
<td>Appendix 5 - Legislative Context</td>
</tr>
<tr>
<td>Production flood risk management plan</td>
<td>Flood Risk Regulations (2009)</td>
<td>Flood Risk Management Plans should be produced for areas at nationally-significant flood risk. Northamptonshire is not classified as being at significant risk.</td>
<td>Duty</td>
<td>December 2015</td>
<td>N/A</td>
<td>Appendix 5 - Legislative Context</td>
</tr>
</tbody>
</table>
**Water and Sewerage Companies**

3.7. Water and sewerage companies are responsible for managing the risks of flooding from public sewer systems. A public sewer is a conduit, normally a pipe, that is vested in a Water and Sewerage Company, or predecessor, that drains two or more properties and conveys foul, surface water or combined sewerage from one point to another point and discharges via a positive outfall. Public sewers are designed to protect properties from the risk of flooding in normal wet weather conditions. However, in extreme weather conditions there is a risk that sewer systems can become overwhelmed and result in sewer flooding.

3.8. Three water companies operate within Northamptonshire (see Map A1 of Water Company boundaries in Appendix 3):

- **Anglian Water Services Ltd**
- **Thames Water Utilities Ltd**
- **Severn Trent Water Ltd**

3.9. Anglian Water Services Ltd (or "Anglian Water") covers the vast majority of Northamptonshire. Thames Water Utilities Ltd covers part of the county to the south and west of Brackley, while Severn Trent Water Ltd covers a small part of the county to the west of Daventry.

3.10. In October 2011, under the ‘Private Sewer Transfer’, Water and Sewerage Companies adopted piped systems on private land that serve more than one property and connect to a public sewer. Sewerage Undertakers have a duty under Section 94 of the Water Industry Act 1991, to provide, improve and extend sewers for the drainage of buildings and associated paved areas.

**Internal Drainage Boards**

3.11. The administrative area of Northamptonshire contains only one Internal Drainage Board (IDB) known as the Bedford Group of Drainage Boards and is located in South Northamptonshire. The area covered is extremely small and is located in the southernmost part of the County, on the boundary with Milton Keynes within the Great Ouse catchment area. See Map A2 of the IDB boundary located within Appendix 3. This IDB is a consortium of statutory bodies providing local storm water management by undertaking watercourse maintenance and improvement. They are defined as a Flood Risk Management Authority; they undertake Consenting and Enforcement of works to ordinary watercourses under Section 23 of the Land Drainage Act 1991 within their district and have the delegated powers within the whole of Northamptonshire. They also adopt and maintain sustainable drainage systems and provide advice and direction to local authorities as part of the planning application process in relation to flood and water management.

3.12. IDBs have an important role to play in flood risk management and habitat creation and management. They are able to involve local people, as well as raise funds from beneficiaries and stimulate volunteer activity.

3.13. They are independent public authorities and their membership includes representatives of the occupiers of the land within their district and local authority nominees to represent other interests.

**District and Borough Councils**

3.14. There are seven borough and district councils in Northamptonshire. See Map A3 of the council boundaries in Appendix 3.
• Corby Borough Council;
• Daventry District Council;
• East Northamptonshire District Council;
• Kettering Borough Council;
• Northampton Borough Council;
• South Northamptonshire Council; and
• Borough Council of Wellingborough.

3.15. The information set out below highlights the full range of mechanisms available to District and Borough Councils in the exercise of their flood risk management functions.

3.16. Responsibilities under the **Flood and Water Management Act 2010** include:

   **Section 6** District Councils are classed as Risk Management Authorities.

   **Section 11** In exercising its flood and coastal erosion risk management functions, a district council must act in a manner which is consistent with the national strategy and associated guidance, and also act in a manner which is consistent with local strategies and associated guidance. In exercising any other function in a manner which may affect a flood risk or coastal erosion risk, a district council must have regard to the national and local strategies and guidance.

   **Section 13** A District Council must co-operate with other Risk Management Authorities in the exercise of their flood and coastal erosion risk management functions. A district council may share information with another risk management authority for the purpose of discharging its duty in the exercise of their Flood and Coastal Erosion Risk Management functions. In addition, a district council may arrange for a flood risk management function to be exercised on its behalf by another risk management authority or a navigation authority.

   **Section 27** In exercising a flood or coastal erosion risk management function, district councils must aim to make a contribution towards the achievement of sustainable development.

   **Section 39** A district council may carry out work (as specified by Section 3 (3) (a) to (e) of the Act) that will or may cause flooding, increase water below the ground or coastal erosion.

   **Schedule 1** District Councils are classed as designating authorities under Schedule 1 of the Act. This allows district councils, where the conditions outlined in Schedule 1 are satisfied, to designate a structure, or a natural or man-made feature of the environment where the authority thinks that the existence or location of the structure or feature affects flood risk. The effect of designation is that a person may not alter, remove or replace a designated structure or feature without the consent of the responsible authority.

3.17. Responsibilities under the **Land Drainage Act 1991** (as amended by the Act) include:

   **Section 14A** A District Council may carry out flood risk management work where the authority considers the work desirable having regard to the local flood risk management strategy for its area and that the purpose of the work is to manage a flood risk in the authority’s area from an ordinary watercourse.

   **Section 66** A district council may make byelaws to secure the efficient working of a drainage system in the authority's district or area, to regulate the effects on the environment, to secure the effectiveness of flood risk management.
work within the meaning of section 14A and/or to secure the effectiveness of works done in reliance on Section 39 of the Flood and Water Management Act 2010.

3.18. Responsibilities under the **Public Health Act 1936** include:

- **Section 260** A district council may undertake works to manage statutory nuisances in connection with watercourses, ditches, ponds, etc. as outlined by Section 259 of the Public Health Act 1936. This includes the clearance of any obstruction or impediment to the proper flow of water. Other provisions within the Public Health Act 1936 outline further provisions related to watercourses, culverting and land drainage.

3.19. Responsibilities under the **Environmental Protection Act 1990** include:

- **Section 79** (Statutory nuisances and inspections therefore) outlines that the following would constitute a statutory nuisance; that any water covering land or land covered with water which is in such a state as to be prejudicial to health or a nuisance.

3.20. Responsibilities under the **Localism Act 2011** include:

- **Section 9FH & 9JB** A district council (as a risk management authority) must comply with a request made by a lead local flood authorities overview and scrutiny committee, in the course of its arrangements to review and scrutinise the exercise by risk management authorities of flood risk management functions which may affect the local authority’s area. District councils must have regard to reports and recommendations of an overview and scrutiny committee in the course of arrangement outlined above.

3.21. Under planning legislation, Borough and District Councils operate their development planning and control functions, having due regard to the National Planning Policy Framework and associated technical guidance.

**The Environment Agency**

3.22. The Environment Agency is responsible for the management of flood risk from the sea, main rivers and reservoirs. It has a strategic overview role for all forms of flooding in addition to responsibilities for the prevention, mitigation and remedying of flood damage for main rivers and coastal areas.

3.23. Main rivers are watercourses shown on the statutory main river map held by the Environment Agency and Defra. The Environment Agency has permissive powers to carry out works of maintenance, improvement and flood defence on main rivers. This can include any structure or appliance for controlling or regulating flow of water into or out of the channel. The overall responsibility for maintenance of main rivers, however, lies with the riparian owner.

3.24. The Environment Agency is the lead organisation responsible for all flood and erosion risk management around the coastline of England, including tidal flood risk. The Environment Agency leads the country in developing a coastal management plan that works at a local, regional and national level, with partner organisations, including local authorities, putting agreed plans into practical action. The Environment Agency supports this by administering Grant-in-Aid funding and overseeing the work carried out.

3.25. The Environment Agency enforces the **Reservoirs Act 1975**, which is the safety legislation for reservoirs in the United Kingdom. Although the responsibility for safety lies with the owners, the Environment Agency is responsible as Enforcement Authority of reservoirs in England and Wales that are greater than 25,000m³. The Environment
Agency is also responsible for establishing and maintaining a register of reservoirs, and making this information available to the public. As Enforcement Authority the Environment Agency must ensure flood plans are produced for specified reservoirs.

3.26. The Environment Agency is responsible for controlling works which affect main rivers and flood defences through permitting works under the Environmental Permitting Regulations.

3.27. The Environment Agency is also responsible for providing advice to planning authorities, providing fluvial and coastal flood warnings, monitoring flood and coastal erosion risks and supporting emergency responders when flooding occurs.

3.28. In support of its objectives the Environment Agency is involved with land use planning, including advising on regional planning guidance, development plans and planning applications. Its primary role subject to any changes in light of the Planning Green Paper, is to advise on those aspects of draft plans, planning applications, environmental statements and hazardous substances consent applications which relate to its operational functions and particular expertise, using information it already has. The Agency also has a role in providing advice at an early stage in the planning process; both to help shape development briefs and draft plans before they go out to consultation; and to advise prospective applicants on the potential implications of their proposals before an application is made to the local planning authority. If the Agency considers there are gaps in a planning authority’s draft plan or appraisal of an application from the wider sustainability point of view, it should draw the authority’s attention to this. Where the Agency provides advice it should do so in a timely, consistent, justifiable and understandable way (DEFRA, 2002, para 5.3).

3.29. The Environment Agency are a statutory consultee on a number of types of development, for the purposes of responding on planning application consultations from Local Planning Authorities and pre-planning application enquiries from developers. In addition they provide consultation responses on some types of development on which they are not a statutory consultee. The Environment Agency’s external Consultation list sets out the types of planning consultations the Agency wishes to be consulted on in England.

3.30. In its strategic overview of all sources of flood risk role, the Environment Agency provides:

- Advice to Government on flood and coastal erosion risk, supporting future national responses, policy and strategy;
- Supervision of flood and coastal erosion risk management;
- Allocation of flood and coastal erosion risk management capital funding; and
- Support to LLFAs by providing data and guidance on assessing, planning and carrying out flood risk management for flooding from ordinary watercourses, surface runoff and groundwater.

**Highways Authority**

3.31. Northamptonshire Highways is responsible for the provision and management of highway drainage under the Highways Act (1980). This excludes motorways and trunk roads (M1, A5, A43, A45, A14 and the M45) that are the responsibility of Highways England (see below).

3.32. Northamptonshire Highways has various duties and powers in relation to flooding and drainage on the highway. The Highway Authority is not responsible for flooding or drainage on private land – this is the responsibility of the owner or occupier of the land. Where flooding on a highway is caused by another person (e.g. an adjoining landowner),
the Highway Authority can take action against the person responsible. For more information on the roles and responsibilities of the the Highways Authority, see Flood Guide 9 on the Flood Toolkit: https://www.floodtoolkit.com/wp-content/uploads/2017/03/9.Roles-and-responsibilities-for-highways.pdf

3.33. Highway drainage systems are for the primary purpose of accepting surface water run-off from the highway and are the responsibility of the Highway Authority unless they have been specifically adopted by the sewerage undertaker.

3.34. Ditches that run within the limits of the highway do not usually form part of the highway (since they do not assist the free passage of people or vehicles along the highway) and remain the responsibility of the adjacent landowner or occupier. However, where the ditches have been designated as forming part of the highway on land owned by the Highway Authority, or where the ditch was constructed for the sole purpose of draining the highway, then the ditch will form part of the highway and will be the responsibility of the Highway Authority. More information in relation to roles and responsibilities for highway ditches and drainage can be found on the Flood Toolkit: http://www.floodtoolkit.com/contacts/.

Highways England

3.35. Highways England are responsible for the following roads in Northamptonshire: M1, A5, A43, A45, A14 and the M45.

3.36. Where motorways or trunk roads are identified as being at risk from flooding, contingency plans are prepared to warn road users and, where necessary, divert them away from the problem. Where possible, weather data from the Met Office is analysed and if intense rainfall events are forecast in sensitive flood areas, suitable warnings are posted using the variable message signs.

Riparian Owners

3.37. Under common law, a riparian owner is someone who has a watercourse within or adjacent to any boundary of their property. Where a watercourse is sited between two or more property boundaries each owner may be equally responsible up to the centre line of the watercourse.

3.38. Although not defined as a flood risk management authority under the Act, riparian owners retain their own duties and responsibilities for watercourses on or adjacent to their land as set out in the Land Drainage Act 1991. This includes the responsibility for the maintenance of any river, stream, ditch, drain, cut, dyke, sluice, culvert, sewer (excluding public sewers) or any other passage through which water flows.


Parish Councils

3.40. Parish Councils have the powers to undertake maintenance works on ponds, ditches and other open drainage in order to prevent the feature from becoming a risk to health. Parish Councils can also play an important role in managing flood risk at the community level by preparing community flood plans, raising additional funding for local flood resilience and flood defence measures, and gathering information on flooding by reporting any flood incidents in their area. For further details on the roles of Parish Councils see Flood Guide 19 on the Flood Toolkit
Other bodies

3.41. There are many other bodies that play an important role in flood risk management, including:

- Natural England;
- English Heritage;
- The Met Office;
- Canal and River Trust;
- Centre for Ecology and Hydrology;
- Institute of Civil Engineers;
- Chartered Institute of Water and Environment Management;
- British Hydrological Society;
- The Flood Forecasting Centre;
- Association of British Insurers;
- Royal Society for the Protection of Birds;
- Local Wildlife Trust;
- Forestry Commission;
- Woodland Trust;
- Association of Drainage Authorities;
- Engineering consultants and contractors;
- National Flood Forum;
- Charities such as the Red Cross and Salvation Army;
- Professional institutions and universities;
- Country Land and Business Association;
- National Farmers Union;
- River Restoration Centre; and
- Network Rail.

3.42. The following Table 3.2 sets out the roles and responsibilities of the different flood risk management authorities in Northamptonshire.
<table>
<thead>
<tr>
<th>Role and Responsibility</th>
<th>Lead Local Flood Authority (County Council)</th>
<th>District Councils</th>
<th>Highways Authority</th>
<th>Bedford Group of Internal Drainage Boards</th>
<th>Water and Sewerage Companies</th>
<th>Environment Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic co-ordinating function in relation to flood and water management</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Duty to act consistently with Local Flood Risk Management Strategies</td>
<td>Yes, for flood risk management functions.</td>
<td>Yes, for flood risk management functions.</td>
<td>Yes, for flood risk management functions.</td>
<td>Yes, for flood risk management functions.</td>
<td>No – only to have regard to them.</td>
<td>Support the development of Local Flood Risk Management Strategies.</td>
</tr>
<tr>
<td>Duty to have regard to Local Flood Risk Management Strategies</td>
<td>Yes, for other functions that may affect flood risk.</td>
<td>Yes, for other functions that may affect flood risk.</td>
<td>Yes, for other functions that may affect flood risk.</td>
<td>Yes, for other functions that may affect flood risk.</td>
<td>Yes, for all relevant functions.</td>
<td>No.</td>
</tr>
<tr>
<td>Duty to investigate a flood from any source</td>
<td>Yes, to the extent it considers necessary.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Duty to maintain an asset register of structures or features which affect flood risk from all sources</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No, but they do have a register for main river assets.</td>
</tr>
<tr>
<td>Power to designate 3rd Party assets which affect flood risk from all sources</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes.</td>
</tr>
<tr>
<td><strong>Duty to co-operate and provide information in connection with flood risk management functions</strong></td>
<td><strong>Lead Local Flood Authority (County Council)</strong></td>
<td><strong>District Councils</strong></td>
<td><strong>Highways Authority</strong></td>
<td><strong>Bedford Group of Internal Drainage Boards</strong></td>
<td><strong>Water and Sewerage Companies</strong></td>
<td><strong>Environment Agency</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Power to request information in connection with flood risk management functions</strong></th>
<th><strong>Lead Local Flood Authority (County Council)</strong></th>
<th><strong>District Councils</strong></th>
<th><strong>Highways Authority</strong></th>
<th><strong>Bedford Group of Internal Drainage Boards</strong></th>
<th><strong>Water and Sewerage Companies</strong></th>
<th><strong>Environment Agency</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Power to enter into arrangements/delegation of responsibilities under the Act</strong></th>
<th><strong>Lead Local Flood Authority (County Council)</strong></th>
<th><strong>District Councils</strong></th>
<th><strong>Highways Authority</strong></th>
<th><strong>Bedford Group of Internal Drainage Boards</strong></th>
<th><strong>Water and Sewerage Companies</strong></th>
<th><strong>Environment Agency</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Powers to undertake new and existing flood risk management works, improve and build new</strong></th>
<th><strong>Lead Local Flood Authority (County Council)</strong></th>
<th><strong>District Councils</strong></th>
<th><strong>Highways Authority</strong></th>
<th><strong>Bedford Group of Internal Drainage Boards</strong></th>
<th><strong>Water and Sewerage Companies</strong></th>
<th><strong>Environment Agency</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes for surface water and ground water only.</td>
<td>Yes on ordinary watercourses, if not in an IDB area.</td>
<td>Yes under Highways Act 1980.</td>
<td>Yes on ordinary watercourses in Internal Drainage Board areas.</td>
<td>Yes if related to drainage.</td>
<td>Yes for main river.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Environmental works powers to manage flooding and water levels in the interests of nature conservation, the preservation of cultural heritage or people’s enjoyment of the environment or cultural heritage</strong></th>
<th><strong>Lead Local Flood Authority (County Council)</strong></th>
<th><strong>District Councils</strong></th>
<th><strong>Highways Authority</strong></th>
<th><strong>Bedford Group of Internal Drainage Boards</strong></th>
<th><strong>Water and Sewerage Companies</strong></th>
<th><strong>Environment Agency</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Enforcement Powers</strong></th>
<th><strong>Lead Local Flood Authority (County Council)</strong></th>
<th><strong>District Councils</strong></th>
<th><strong>Highways Authority</strong></th>
<th><strong>Bedford Group of Internal Drainage Boards</strong></th>
<th><strong>Water and Sewerage Companies</strong></th>
<th><strong>Environment Agency</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Un-conented works - S23 of LDA, when owner does work without permission.</td>
<td>Yes</td>
<td>No, but can be delegated to them by the LLFA if in agreement.</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No, powers relate to main river only.</td>
</tr>
<tr>
<td>• When riparian owner fails to do work to maintain - S25 of LDA</td>
<td>Yes</td>
<td>No, but can be delegated to them by the LLFA if in agreement.</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No, main river consenting only.</td>
</tr>
<tr>
<td><strong>Powers to consent works which may impede the proper flow of water in ordinary watercourses</strong></td>
<td><strong>Lead Local Flood Authority (County Council)</strong></td>
<td><strong>District Councils</strong></td>
<td><strong>Highways Authority</strong></td>
<td><strong>Bedford Group of Internal Drainage Boards</strong></td>
<td><strong>Water and Sewerage Companies</strong></td>
<td><strong>Environment Agency</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Yes</td>
<td>No, but can be delegated to them by the LLFA if in agreement.</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No, main river consenting only.</td>
</tr>
</tbody>
</table>
4. **LOCAL PARTNERSHIPS, GOVERNANCE AND SCRUTINY**

4.1. The Flood and Water Management Act (2010) requires the County Council as the Lead Local Flood Authority (LLFA) to establish arrangements to bring together all relevant bodies to work as partners in the management of local flood risk.

4.2. Although the Act does not stipulate what these local arrangements should look like, it does require the relevant authorities to co-operate with each other in exercising functions under the Act. It also empowers LLFAs or the Environment Agency to require information from others needed for their flood risk management functions.

*Local partnership and governance arrangements*

4.3. The County Council has set out an organisational framework to support local flood risk management, which is intended to ensure that partnerships are managed in ways that enhance the co-ordination of policy and actions. The structure provides strong accountability and transparency.

4.4. The framework is illustrated below and has been created to coordinate partnership working and to address flood risk issues in Northamptonshire.

*Figure 4-1: Northamptonshire Partnership Model*

4.5. The Strategic Flood Risk Management Board considers strategic and national flood risk matters and comprises: Environment Agency (Chair), County Council members, Chair of the Regional Flood and Coastal Committee and Member Representatives, a Local Resilience Forum Representative, the County Council Assistant Director of Environment, Planning and Transport and the chair of the Local Flood Risk Operational Group.

4.6. The group’s role is to take a strategic overview of the entirety of flood risk and drainage management across Northamptonshire, including from all inland flooding sources. It will ensure effective integration of flood risk planning and response at a strategic level in the county.
4.7. The Board will:

- Provide strategic guidance to the Local Flood Risk Operational Group;
- Review partnership roles and performance;
- Provides the strategic linkages to the National Flood and Coastal Erosion Risk Management Strategy;
- Promote co-ordinated approaches to flood and coastal risk management investment, planning and delivery across Northamptonshire, integrated with arrangements for emergency response;
- Assess the implications of flood, coastal and drainage risk management strategies for Northamptonshire and agree appropriate joint approaches to their development (for example Catchment Flood Management Plans, Multi-Agency Flood Plans, and local development framework);
- Promote risk-based investment strategies and plans for flood risk and drainage management across Northamptonshire;
- Maximise opportunities to influence partner strategies and resource allocation and to maximise external funding;
- Guide the development of joint strategies for promoting public awareness and confidence in flood and drainage risk management arrangements, and ensure effective linkages with communications developed through the Northamptonshire Resilience Forum; and
- Ensure appropriate reference to relevant national strategies and policies.

Local Flood Risk Operational Group

4.8. The Local Flood Risk Operational Group enables the County Council as Lead Local Flood Authority to fulfil its statutory roles and to determine the work programme, projects and issues to be considered by the ‘Task and Finish Groups’.

4.9. Membership comprises:

- County Council officers;
- All District and Borough Councils;
- The Environment Agency;
- County Highways Authority;
- Highways England;
- Anglian Water Services;
- Thames Water;
- Severn Trent Water;
- Northamptonshire Fire and Rescue;
- North Northamptonshire Joint Planning Unit;
- West Northamptonshire Joint Planning Unit;
- The Bedford Group of Drainage Boards;
- Network Rail;
- David Smith Associates;
- County Emergency Planning; and
- County Planning and Environment Units.

4.10. The Partnership’s primary purpose, therefore, is to ensure that effective flood risk management and resilience is built into service delivery in a manner which delivers better protection from flood risk for communities and key infrastructure.

4.11. The aims of the Local Flood Risk Operational Group include:

a) To identify new funding opportunities, more cost effective methods of joint working and ensure that the core skills, competencies and resources are safeguarded;
b) To share data, skills and best practice within Northamptonshire to ensure that flood risk management delivery is feasible, proportionate and sustainable;

c) To provide a unified voice on flood risk and drainage matters on national policy and funding matters;

d) To ensure that the general public is aware of the flood risk responsibilities and that partner organisations are familiar with their respective roles, responsibilities and duties and that work programmes are aligned accordingly;

e) To receive reports on and provide a strategic input and direction to development plans, policies and programmes of works developed to manage flood risk in the county;

f) To address specific issues affecting delivery or collaborative working as and when they arise;


g) To assist in the reporting of flood risk management activity and programmes to Scrutiny committees;

h) To establish project management/task groups as appropriate to deliver flood risk management measures; and

i) To promote activities engaging and educating the public on flood risk issues.

The Local Resilience Forum

4.12. The Local Resilience Forum is a partnership consisting of risk management authorities, local emergency and health services, and utility and transport organisations. It addresses, through planning and risk management, the consequences of any emergency that may occur within the county.

Regional Flood and Coastal Committees

4.13. Regional Flood and Coastal Committees (RFCCs) play an important local role in guiding flood and coastal management activities within catchments, and advising on and approving programmes of work for their areas. They raise local levies to fund local priority projects and works.

4.14. Local democratic input is achieved by the majority of representatives on the RFCC being elected County Council members. The members have a key role in balancing local priorities and making sure that investment is co-ordinated at the catchment scale and in promoting the consideration of climate change impacts in local decision making.

Scrutiny Arrangements

4.15. This Strategy has been subject to a robust democratic scrutiny and review process as required by the Act. The County Council has put in place scrutiny arrangements, which include arrangements to review and scrutinise flood risk management functions.

4.16. The Flood and Water Management Act (2010) added a new section (21F) to the Local Government Act (2000), which extends the powers of Overview and Scrutiny Committees in England. The amendment provides powers to Lead Local Flood Authorities to allow for the scrutiny of risk management authorities in relation to their flood risk management functions. It also gives risk management authorities a duty to comply with requests for information, or responses to reports, from the Overview and Scrutiny Committees.

4.17. Scrutiny is an essential part of ensuring that local government remains effective and accountable. It is a process of examining and monitoring the activity of a council with the aim of improving the quality of public services. Scrutiny ensures that the decision-making process is clear and accessible to the public. It enables members of the community and councillors to play a part in influencing policy and improving public service delivery.
4.18. The Environment, Development & Transport Scrutiny Committee is responsible for scrutinising and reviewing matters relating to flood risk management as well as protective functions including Fire and Rescue, and Emergency Planning.

4.19. Member support continues to be developed through proactive briefing sessions and workshops, especially in developing an understanding of the roles of different risk management authorities and also through working with Borough and District Councils.

Cross-Catchment Working

4.20. It is appreciated that a catchment-based approach towards flood risk management is extremely sensible and that this has already been undertaken by the Environment Agency when developing Flood Risk Management Plans. Although this Strategy is based on the county boundary, as this falls within the LLFAs remit, the County Council continues to work closely with neighbouring LLFAs to ensure that any cross catchment boundary issues are addressed. This method of partnership working in all aspects of the LLFAs work ensures that there will be no transfer of risk to or from other risk management authorities.
5. ASSESSMENT OF LOCAL FLOOD RISK IN NORTHAMPTONSHIRE

Historic Flooding in Northamptonshire

5.1. There is a history of flooding in Northamptonshire, with the three most significant events in recent years occurring on 10th April 1998, 21st November 2012 and 9th March 2016, all occurring after heavy rainfall fell on already saturated ground in the county.

5.2. In April 1998, Northampton and the surrounding areas were flooded due to very heavy rainfall, channel exceedence, flood defence malfunction, surface water flooding and canal overtopping. An estimated 4,200 properties were affected causing over £75 million worth of damage. Many of these properties were commercial properties and critical infrastructure was also affected. Towns, villages and agricultural land in Northamptonshire were severely damaged by the flooding. In the town of Northampton alone, over 2,500 properties were flooded, two people died and 150 people were treated in hospital for flood related injuries and hypothermia. The worst flooding was in the St James and Far Cotton areas.

5.3. As a result of the major Easter 1998 floods, the flood defences on the River Nene through central Northampton were upgraded and now provide the town one of the highest design standards of protection in the country. Further work to improve defences was additionally undertaken elsewhere on the River Nene.

5.4. A total of 20-30mm of rain fell across the county on 21st November 2012 with some parts getting as much as 40mm, causing widespread surface water and fluvial flooding. A further approximately 20mm of rain fell on the night of 24th November 2012, which resulted in further flooding across the county.

5.5. A total of 342 flood incidents were reported across the county during the last two weeks of November 2012. Of these incidents, it is believed that approximately 140 properties were affected internally by flooding. The flooding was mainly as a result of heavy rainfall, sewer incapacity, channel exceedence and agricultural runoff.

5.6. A total of 207 flooding incidents were recorded on the 9th March 2016. It is understood that approximately 71 properties were affected internally by flooding and this has resulted in the need to undertake eighteen formal Section 19 (of the Act) Flood Investigations.

5.7. The flood defence improvements built along the River Nene after 1998 helped to protect several communities from flooding, including Weedon, Kislingbury, Northampton town centre, Thrapston and Geddington.

5.8. Other noteworthy flood incidents that have occurred in the County include:

- 2012 (July) – a number of properties were affected following heavy rainfall;
- 2007 (June) – three intense rainfall events falling on a dry catchment, resulted in flooding in the Wootton Brook and Collingtree Park area of Northampton due to channel incapacity being exceeded, and flooding of numerous properties in Kettering due to a combination of the Slade Brook exceeding channel capacity, local drainage issues and surface water flooding;
- 1992 (September) – numerous properties flooded in Weedon Bec;
- 1982 (July) – fluvial flooding in main valley watercourses in Corby resulting from a 1 in 72 year storm event.
- 1981 (June) – fluvial and surface water flooding of houses and gardens at Swanspool Brook, Wilby, and surface water flooding in Kettering;
- 1973 – channel incapacity of River Ise causing flooding in Geddington;
- 1960s – summer storms which were intense but short;
5.9. Approximately 2600 historic flood events are recorded on the County Council database across the county dating back to 1947, and include the following sources of information:

- Historical data from each of the seven Borough and District councils;
- Historical data from the River Ouzel and Buckingham Internal Drainage Board;
- Historical data from Anglian Water, Severn Trent Water and Thames Water;
- Information from the Canal and River Trust;
- Information from Highways England and County Council Highways Department;
- Environment Agency records of flooding plus references to historic floods from studies and plans; and
- Reports from members of the public, affected individuals and media reports.

5.10. The local flood incidents shown in Map 3 below are those incidents that have been reported to NCC as the LLFA.

5.11. To determine which historic flood incidents should be considered ‘locally significant’ the collated data was ranked in order of most adverse human and economic consequences to least. From there it was possible to see a clear distinction between significant events that affected hundreds of properties and much smaller events that only affected tens of properties. The vast majority of flooding in the county affects smaller numbers of properties (less than 20). Therefore, 20 properties were taken as the threshold for locally ‘significant’ flood risk as set out below:

<table>
<thead>
<tr>
<th>Significance of Flood Event</th>
<th>Definition</th>
<th>Number of Flood Events Currently on Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant:</td>
<td>- 20 dwellings (47 people) or more affected; or 8 business premises affected; or 1 or more critical service affected; or 1 Major transport link affected (impassable for 12 hours)</td>
<td>4</td>
</tr>
<tr>
<td>Intermediate:</td>
<td>- A single dwelling (2.34 people) to 19 dwellings (45 people) affected; or 1-7 business premises affected.</td>
<td>415</td>
</tr>
<tr>
<td>Less:</td>
<td>- Minor Roads, Residential Gardens or Public open space affected.</td>
<td>2200</td>
</tr>
</tbody>
</table>

5.12. A complete record of locations where flooding has occurred will be kept by the County Council to inform future reviews of this Strategy.
Map 3: Historic Local Flood Incidents

Note: Due to differences in the way authorities record and store flood event data, this map should not be taken as a fully accurate representation of the range of incidents, frequency or severity of flood risk across Northamptonshire.

NCC Local Flood Risk Management Strategy
Recorded Local Flood Incidents
Map 3

Legend
- NCC boundary
- Borough and District boundaries
- Recorded Local Flood Incidents

Northamptonshire Local Flood Risk Management Strategy (LFRMS) (November 2016)
Potential Flood Risk in Northamptonshire

5.13. Flood risk within Northamptonshire comes from a number of different sources and is extremely varied and widespread across the county. It is not technically nor financially possible to eliminate all risk of flooding across the county. Therefore it is important to take a risk-based approach and prioritise the areas that are at greatest risk and that will provide the most benefit from flood risk management work. This assessment of priority wards will be developed over time as better understanding of local flood risk is established.

5.14. Since the first publication of the Strategy in 2013, new and revised datasets and flood related information has become available and all of this information has been incorporated into a Geographical Information System (GIS) assessment designed to be easily repeated and regularly updated.

5.15. The aim of this assessment was to determine the level of flood risk from various sources of risk affecting various receptors within each ward of Northamptonshire. The risk in each ward has then been compared to determine a list of communities ranked by priority.

Prioritisation

5.16. The methodology set out in the associated GIS Prioritisation document identifies the priority areas in Northamptonshire from each source of flood risk individually (surface water, fluvial and groundwater) and then provides a combined risk assessment. The respective rank for each individual source of flooding for the top 15 wards is also included in the tables set out below for comparison purposes.

Table 5.2 Fifteen most at risk wards in Northamptonshire based on overall combined risk of flooding

<table>
<thead>
<tr>
<th>OVERALL RANK</th>
<th>Ward</th>
<th>Fluvial Rank</th>
<th>Surface Water Rank</th>
<th>Groundwater Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Barby and Kilsby Ward</td>
<td>4</td>
<td>1</td>
<td>136</td>
</tr>
<tr>
<td>2</td>
<td>St. James Ward</td>
<td>2</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Blisworth and Roade Ward</td>
<td>25</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>Long Buckby Ward</td>
<td>1</td>
<td>16</td>
<td>85</td>
</tr>
<tr>
<td>5</td>
<td>Weldon &amp; Gretton Ward</td>
<td>8</td>
<td>64</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Delapre and Briar Hill Ward</td>
<td>3</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>7</td>
<td>Irchester Ward</td>
<td>51</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>Weedon Ward</td>
<td>9</td>
<td>3</td>
<td>47</td>
</tr>
<tr>
<td>9</td>
<td>St. Michael's and Wicksteed Ward</td>
<td>6</td>
<td>19</td>
<td>92</td>
</tr>
<tr>
<td>10</td>
<td>Spratton Ward</td>
<td>21</td>
<td>38</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>Queen Eleanor and Buccleuch Ward</td>
<td>19</td>
<td>33</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>Central Ward</td>
<td>5</td>
<td>20</td>
<td>44</td>
</tr>
<tr>
<td>13</td>
<td>Castle Ward</td>
<td>7</td>
<td>22</td>
<td>65</td>
</tr>
<tr>
<td>14</td>
<td>Rushden Spencer Ward</td>
<td>13</td>
<td>28</td>
<td>42</td>
</tr>
<tr>
<td>15</td>
<td>Kingswood &amp; Hazel Leys Ward</td>
<td>130</td>
<td>101</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 5.3 Fifteen most at risk wards in Northamptonshire based on fluvial flooding

<table>
<thead>
<tr>
<th>Rank</th>
<th>Ward (fluvial flooding)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Long Buckby Ward</td>
</tr>
<tr>
<td>2</td>
<td>St. James Ward</td>
</tr>
<tr>
<td>3</td>
<td>Delapre and Briar Hill Ward</td>
</tr>
<tr>
<td>4</td>
<td>Barby and Kilsby Ward</td>
</tr>
<tr>
<td>5</td>
<td>Central Ward</td>
</tr>
<tr>
<td>6</td>
<td>St. Michael's and Wicksteed Ward</td>
</tr>
<tr>
<td>7</td>
<td>Castle Ward</td>
</tr>
<tr>
<td>8</td>
<td>Weldon &amp; Gretton Ward</td>
</tr>
<tr>
<td>9</td>
<td>Weedon Ward</td>
</tr>
<tr>
<td>10</td>
<td>Lyveden Ward</td>
</tr>
<tr>
<td>11</td>
<td>Rixon Ward</td>
</tr>
<tr>
<td>12</td>
<td>Little Brook Ward</td>
</tr>
<tr>
<td>13</td>
<td>Rushden Spencer Ward</td>
</tr>
<tr>
<td>14</td>
<td>Isebrook Ward</td>
</tr>
<tr>
<td>15</td>
<td>Kingswood &amp; Hazel Leys Ward</td>
</tr>
</tbody>
</table>

Table 5.4 Fifteen most at risk wards in Northamptonshire based on surface water flooding

<table>
<thead>
<tr>
<th>Rank</th>
<th>Ward (surface water flooding)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Barby and Kilsby Ward</td>
</tr>
<tr>
<td>2</td>
<td>Delapre and Briar Hill Ward</td>
</tr>
<tr>
<td>3</td>
<td>Weedon Ward</td>
</tr>
<tr>
<td>4</td>
<td>Kingswood &amp; Hazel Leys Ward</td>
</tr>
<tr>
<td>5</td>
<td>Rushden Hayden Ward</td>
</tr>
<tr>
<td>6</td>
<td>Swanspool Ward</td>
</tr>
<tr>
<td>7</td>
<td>St. James Ward</td>
</tr>
<tr>
<td>8</td>
<td>Nene Valley Ward</td>
</tr>
<tr>
<td>9</td>
<td>Brookside Ward</td>
</tr>
<tr>
<td>10</td>
<td>Blisworth and Roade Ward</td>
</tr>
<tr>
<td>11</td>
<td>Moulton Ward</td>
</tr>
<tr>
<td>12</td>
<td>Semilong Ward</td>
</tr>
<tr>
<td>13</td>
<td>Heyfords and Bugbrooke Ward</td>
</tr>
<tr>
<td>14</td>
<td>Finedon Ward</td>
</tr>
<tr>
<td>15</td>
<td>Irchester Ward</td>
</tr>
</tbody>
</table>
Table 5.5 Fifteen most at risk wards in Northamptonshire based on ground water

<table>
<thead>
<tr>
<th>Rank</th>
<th>Ward (groundwater flooding)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>St. James Ward</td>
</tr>
<tr>
<td>2</td>
<td>Queen Eleanor and Buccleuch Ward</td>
</tr>
<tr>
<td>3</td>
<td>Weldon &amp; Gretton Ward</td>
</tr>
<tr>
<td>4</td>
<td>Thrapston Lakes Ward</td>
</tr>
<tr>
<td>5</td>
<td>Old Duston Ward</td>
</tr>
<tr>
<td>6</td>
<td>Spratton Ward</td>
</tr>
<tr>
<td>7</td>
<td>Finedon Ward</td>
</tr>
<tr>
<td>8</td>
<td>Burton Latimer Ward</td>
</tr>
<tr>
<td>9</td>
<td>Thrapston Market Ward</td>
</tr>
<tr>
<td>10</td>
<td>Lyveden Ward</td>
</tr>
<tr>
<td>11</td>
<td>Blisworth and Roade Ward</td>
</tr>
<tr>
<td>12</td>
<td>Irchester Ward</td>
</tr>
<tr>
<td>13</td>
<td>Brackley West Ward</td>
</tr>
<tr>
<td>14</td>
<td>Higham Ferrers Lancaster Ward</td>
</tr>
<tr>
<td>15</td>
<td>Parklands Ward</td>
</tr>
</tbody>
</table>

5.17. The following activities, along with those actions set out within the associated Action Plan, will be given precedence in these wards, which have been classified as the highest priority within the county:

- Data collection and registration of existing assets, particularly focussed on ordinary watercourses and surface water features;
- Designation of assets, which are considered by all risk management authorities to have a significant flood defence function;
- Involvement in community flood resilience projects, subject to available funding.
6. STRATEGY OBJECTIVES FOR MANAGING LOCAL FLOOD RISK

6.1. This section sets out this Strategy’s objectives and how specific actions and measures can contribute to their achievement.

Local Flood Risk Management Strategy Objectives

1. Collaborative Approach – Adopt a collaborative approach to managing local flood risk by working with local partners and stakeholders to identify, secure and optimise resources, expertise and opportunities for reducing flood risk and increasing resilience to flooding.

2. Local Flood Risk – Develop a greater understanding of local flood risk by improving the scope of local knowledge and understanding of current and future local flood risks.

3. Enhance the Natural and Historic Environment – Adopt a sustainable approach to reducing local flood risk, seeking to lessen the risk of localised flooding using mechanisms that are economically viable, deliver wider environmental benefits and promote the wellbeing of local people.

4. Preparedness and Resilience – Reduce the harmful consequences of local flooding to communities and human health through proactive actions, activities and education programmes that enhance preparedness and resilience to local flood risk, and contribute to minimising community disruption.

5. Flood Risk and Development – Minimise the increase in local flood risk that may arise from new development by producing guidance, setting standards, promoting the sustainable use of water and supporting the development of local policies and guidance, discouraging wherever possible surface water runoff in new and future developments and where possible influencing or supporting developments that seek to reduce existing flood risk.

6. Economically Sustainable Approach - ensure the financial viability of flood related schemes through the development of appropriate policies and assessment tools to ensure that flood risk management measures provide value for money whilst minimising the long-term revenue costs. Seeking to use natural processes where possible or source the costs of any maintenance from the financial beneficiaries of the development.

7. Riparian Responsibilities – Encourage flood management activities by private owners of ordinary watercourses and flood defence structures as well as limit the development of constrictions on ordinary watercourses.

6.1.1. It is considered that all of the objectives within this Strategy are compliant with and further support the objectives of the National Flood Risk and Coastal Erosion Strategy. Table 6.1 below provides a summary of the key themes and actions within each of the National Strategy Objectives, and how these are addressed within the Objectives of the Northamptonshire Local Flood Risk Management Strategy.

Table 6.1: Comparison of National Strategy Objectives with LFRMS Objectives

<table>
<thead>
<tr>
<th>National Strategy Objective</th>
<th>Key themes and actions to achieve National Strategy objectives</th>
<th>Consistency with LFRMS Objectives</th>
</tr>
</thead>
</table>
| Understanding the risks of flooding and coastal erosion, working together to put in place long-term plans to manage these risks and preventing flooding | • Estimating risks through assessing data, information, mapping and modelling.  
• Development of tools and advice, and communicating flood risk information clearly.  
• Establish and maintain a register of assets and | 2  
2  
2 |

Northamptonshire Local Flood Risk Management Strategy (LFRMS) (November 2016) 35
<table>
<thead>
<tr>
<th>National Strategy Objective</th>
<th>Key themes and actions to achieve National Strategy objectives</th>
<th>Consistency with LFRMS Objectives</th>
</tr>
</thead>
</table>
| making sure that other plans take account of them. | features that help manage flood risks.  
- Planning flood risk management activities effectively, by linking with other plans, working across catchments, using RFCCs to coordinate activities, working in partnership with others, promoting the full range of measures such as SuDS.  
- Ensure value of risk management in rural areas is appreciated. | 1, 5, 6 |
| Avoiding inappropriate development in areas of flood and coastal erosion risk and being careful to manage land elsewhere to avoid increasing risks. |  
- Working in partnership (especially between LLFA and Planning Authority) to avoid inappropriate building or redevelopment in areas of high flood risk.  
- Consider FCERM issues in managing land use, and developing areas that are not directly at risk to ensure that risks are not increased elsewhere.  
- Ensuring development is compliant with the key requirements of the National Planning Policy Framework and associated guidance. | 1, 5 |
| Building, maintaining and improving flood and coastal erosion management infrastructure and systems to reduce the likelihood of harm to people and damage to the economy, environment and society. |  
- Provision of funding from central government towards the construction and maintenance of risk management assets, considering alternative options where public funding cannot be justified, and balancing investment in new systems and maintenance.  
- Seek to provide wider benefits to the natural environment (including water quality, water resources, climate change mitigation, and biodiversity), cultural heritage, tourism, agriculture, economic development and recreation.  
- Provide support for local solutions and innovation, minimising barriers that may prevent landowners, community groups or individuals taking steps to manage risks.  
- Use of SuDS in new developments to manage surface water runoff. | 6 |
| Increasing public awareness of the risk that remains and engaging with people at risk to encourage them to take action to manage the risks that they face and to make their property more resilient. |  
- Work in partnership to help communities and individuals take responsibility for their risk, for example by signing up to flood warnings, creating community flood plans.  
- Encourage homeowners and businesses to better protect their properties in a sustainable manner. Guidance available on the Flood Toolkit.  
- Promote flood insurance policies. | 1, 4, 7 |
| Improving detection, forecasting and issue of warnings of flooding, planning for and coordinating a rapid response to flood emergencies and promoting faster recovery from flooding. |  
- Environment Agency and Met Office to work together to develop and improve the national flood detection and forecasting services provided by the Flood Forecasting Centre.  
- Environment Agency to develop and improve the flood warning service to include surface water flood risk.  
- Support recovery after flooding, for example by encouraging planning for flooding, preparing emergency plans through LRFs. | 4 |
Objective 1: Collaborative Approach

“Adopt a collaborative approach to managing local flood risk by working with local partners and stakeholders to identify, secure and optimise resources, expertise and opportunities for reducing flood risk and increasing resilience to flooding”

6.1.2. The following activities set out below and listed within the associated Action Plan will enable this objective to be achieved:

- Promotion of partnership working;
- Securing and optimising human resources; and
- Public engagement in development and delivery of the strategy.

Partnership working

6.1.3. As well as engaging with local communities and members of the public, it is also important to engage effectively with other Risk Management Authorities.

6.1.4. The Northamptonshire Flood and Water Management Framework (as set out at Section 4) was approved in November 2010 and oversees all flood risk management activities within Northamptonshire. It is important to maintain this framework of cooperation between the partners outlined above to ensure that the roles and responsibilities of all stakeholders are fully understood. This partnership approach ensures the successful delivery of the actions set out in this Strategy.

Secure and Optimise Human Resources

6.1.5. It is essential that the County Council, as well as the partners and other risk management authorities, increase flood risk management capacity and skills in order to deliver the new responsibilities under the Flood and Water Management Act.

6.1.6. The following skill sets already exist with the County Council to varying degrees and will be developed and maintained:

- Planning knowledge, including the National Planning Policy Framework and associated Technical Guidance;
- Highways drainage;
- Emergency planning;
- Environmental and archaeological expertise; and
- Project management/policy analysis.

Public Engagement in Strategy Development and Delivery

6.1.7. There is a formal requirement for stakeholder engagement for much of the work undertaken under the Flood and Water Management Act. The County Council will choose methods and processes of engagement to make them as relevant and effective as possible. There is no single ‘right’ way to engage; many techniques are appropriate, however the way the County Council will do this will depend on the targeted stakeholder and the particular objectives of any specific consultation. The County Council will seek to structure engagement in a way that will genuinely gauge the views of stakeholders.


Objective 2: Local Flood Risk

“Develop a greater understanding of local flood risk by improving the scope of local knowledge and understanding of current and future local flood risks”

6.2.1. The following activities set out below and listed within the Action Plan will enable this objective to be achieved:
• Production of Surface Water Management Plans and other technical flood and water management studies;
• Flood reporting, recording and investigation;
• Raise community awareness;
• Registration of assets and associated maintenance; and
• Data management.

Surface Water Management Plans

6.2.2. The County Council recognises the value of Surface Water Management Plans (SWMPs) as a tool to identify flood risk from surface water and ordinary watercourses, to assess options to understand the risk (including potential depth and velocity of flooding) and where possible mitigate the risk and prepare an action plan to manage the risk to reduce risk to life and provide costed solutions. The associated Action Plan sets out what SWMPs have been produced, and these are available in the Statutory Documents section of the Flood Toolkit’s Flood Library: https://www.floodtoolkit.com/pdf-library/

Flood Reporting, Recording and Investigating

Flood Incident Reporting

6.2.3. It is vital that members of the public who are affected by flooding are aware of the appropriate authority to contact:

• If the flooding is an emergency contact Fire and Rescue on 999 or 112.
• The duties of a Fire and Rescue Service are to save lives, protect property and the environment and to carry out humanitarian services. Assistance requested in flood related incidents will receive a response according to operational priorities and availability.
• During a flood incident you should focus on the safety of yourself and others, be aware of the risk and make sure to stay out of floodwater. See our Help I’m Flooding page on the Flood Toolkit for more details on what to do.
• To report flooding relating to a highway such as blocked ditches, blocked drains or flooding on a road call Northamptonshire Highways or visit the Street Doctor website.
• To report flooding on the M1, M45, A5, A14, A45 (M1 to A14) or A43 (M1, south of Northampton to Oxfordshire border) contact Highways England.
• If the flooding is from a burst water main or sewer flooding: contact your service provider (Anglian Water Services, Thames Water Utilities or Severn Trent Water)
• To report flooding from a main river contact the Environment Agency through the Floodline at 0345 988 1188 or visit their website. Visit our Flood Risk Map page to see all main rivers in Northamptonshire.

6.2.4. For all other flooding incidents, these should be reported online at: http://www.floodtoolkit.com/emergency/report-flood/ for recording purposes. This service is not to be used in an emergency situation. A response to your submission will be provided within 20 working days.

6.2.5. All of the information submitted is placed on the NCC database of historic flood incidents, and enables the County Council to be alerted to any recurring flooding hotspots.

6.2.6. On receipt of flood incident report forms or other information regarding flood incidents, the content is reviewed and a determination made as to whether any incidents require formal investigation, following the County Council’s Flood Investigation Protocol below.
Flood Investigation

6.2.7. The County Council as the Lead Local Flood Authority has a statutory duty to investigate flooding incidents in its area, to the extent that it considers necessary or appropriate. This requirement is set out in Section 19 of the Act.

6.2.8. On becoming aware of a flooding incident, the LLFA must decide whether it is necessary or appropriate to investigate further in order to:
   a) Identify which risk management authorities or individuals have flood risk management functions in respect of the flooding (it could be for example the Environment Agency if it comes from main rivers or the sea); and
   b) Establish whether that authority or individual has responded or is proposing to respond to the flood.

6.2.9. It is not the responsibility of the Investigating Officer to resolve the flooding, however they will investigate the cause and notify any relevant authority. In Northamptonshire, these authorities could include Northamptonshire Highways, the water companies, Environment Agency, borough and district councils, the drainage board or landowners.

6.2.10. Upon learning of a flood event within Northamptonshire the Investigating Officer will follow the established ‘Flood Investigations Protocol’ whereby it will be determined whether an investigation should be carried out, taking into account the available resources and significance of the event.

6.2.11. It is therefore essential to determine what is ‘necessary or appropriate’ in the context of Northamptonshire. A formal flood investigation will generally be carried out if one or more of the following occurs:
   - Flooding has affected critical infrastructure\(^1\) for a period in excess of three hours from the onset of flooding;
   - Internal flooding\(^2\) of a building has been experienced on more than one occasion in the last five years;
   - Internal flooding of five buildings in close proximity\(^3\) has been experienced during one single flood incident.

6.2.12. Note: The LLFA will not investigate incidents of structural dampness or where basements are affected by groundwater entering through cracks in the basement walls or floors.

6.2.13. Note: In the event that the cause of, and the responsibility for addressing the flooding is well understood, no formal investigation will be undertaken.

6.2.14. Note: The LLFA will only undertake a flood investigation if the incident is formally reported (as per the instructions in this Chapter) within 9 months of the flood event occurring.

6.2.15. The investigation will follow the following process:

---

\(^1\) Definition of critical infrastructure: Those infrastructure assets (physical or electronic) that are vital to the continued delivery and integrity of essential national services, the loss or compromise of which would lead to severe economic or social consequences, or to loss of life.

\(^2\) Definition of internal flooding: A situation in which a building (commercial or residential) has been flooded internally, i.e. water has crossed the threshold and entered the building. This includes:
   - Basements and ground level floors of the building;
   - Garages/outbuildings if they are integral to the main occupied building. Garages adjacent or separate from the main occupied building are not included;
   - Occupied static caravans and park homes. Tents are not included.

\(^3\) Definition of close proximity: Where it is reasonable to assume that the affected properties were flooded from the same source, or interaction of sources, of flooding.
Step 1. Flood incident report form received through the Flood Toolkit: http://www.floodtoolkit.com/emergency/report-flood/

Step 2. Review the information provided to determine if the incident meets the threshold for formal investigation. If the incident does not meet the threshold then advice and guidance is provided.

Step 3. If the incident does meet the threshold, then a site meeting is arranged with the affected community and a data collection process undertaken. This will include any photos, video footage and eyewitness statements.

Step 4. A draft Flood Investigation Report (FIR) is written and shared with all relevant Flood Risk Management Authorities (RMAs) for comment and review.

Step 5. Any necessary revisions are made to the FIR and published online.

Step 6. All RMAs and the affected community are notified of the publication.

6.2.16. It is important to note that this is a technical assessment and that it is for the relevant responsible body or persons to assess any recommendations in terms of their legal obligation, resource implications, priority and cost/benefit analysis of undertaking such actions.

Following significant widespread flooding in the county, where a number of incidents meet the thresholds for investigation, the investigations will be undertaken on a priority basis. This methodology includes an assessment of; the type of flooding, the impact, what was affected, duration of flooding, whether or not major roads were impassable, whether the flood water was contaminated, the depth of the flood water and the number of times the flooding has occurred.

6.2.17. The Flood Investigation Reports describe the flood incident and aim to determine any contributing factors. The reports explain the roles and responsibilities of those involved, and provide recommendations for future actions.

6.2.18. It is for the relevant responsible body or persons to assess each recommendation in terms of the legal obligation, resource implications, priority and cost/benefit analysis of undertaking such action.

6.2.19. The County Council will endeavour to undertake and complete a flood investigation report within six months of receipt of a flood incident report form; however this may not be possible following extensive flooding when significant numbers of reports of flooding are received.

Asset Maintenance

6.2.20. As assets age, they are likely to deteriorate and may become less able to perform their original flood risk management function. The impact on flood risk will vary depending on the type of asset. For example road drainage ditches may become overgrown, or drains may silt up, reducing their capacity to carry water and therefore increasing the risk of surface water flooding. Other assets, such as flood defence walls, can weaken over time, so that they can no longer hold back flood water.

6.2.21. Routine inspection and maintenance can mitigate this risk and extend the lifetime of assets. However without this regular maintenance and a programme of replacement and remediation, the potential failure of assets could increase flood risk. The increase in risk would depend on the significance of the asset and what is protected by the asset.

6.2.22. The County Council is responsible for managing its own assets, including highway drainage assets. The County Council does have powers to undertake works to maintain surface water and groundwater related flood risk assets, and charge the costs of this work to the riparian owner of the asset. Borough and District Councils have the same powers relating to maintenance of assets on ordinary watercourses. However, the focus
remains on providing these owners with advice to enable them to maintain their own assets.

6.2.23. All risk management authorities within Northamptonshire have a responsibility to maintain their own assets to ensure that flood risk within the County is not increased. The Environment Agency manages approximately half of the flood risk assets on main rivers. Local authorities, internal drainage boards and individual owners and businesses are responsible for the others.

Asset Register

6.2.24. Under Section 21 of the Act, each Lead Local Flood Authority in England and Wales has a statutory duty to establish and maintain:

- A register of structures or features which, in the opinion of the authority, are likely to have a significant effect on flood risk in its area; and
- A record of information about each of those structures or features, including information about ownership and state of repair.

6.2.25. The NCC asset register database contains standardised asset data acquired from:

- Environment Agency;
- Highways Authority;
- Borough and District Councils;

6.2.26. Additional flood risk asset information has been identified through reviewing technical flood and water related documents that have been undertaken across the county (see Appendix 4 for a full list of documents reviewed).

6.2.27. The asset register can be viewed on the Northamptonshire Interactive Mapping System, under ‘Environment and Planning’ - ‘Flood Risk’ - ‘Flood Asset Register’: https://maps.northamptonshire.gov.uk/

6.2.28. It is envisaged that the information contained within the asset register will build up over time as and when new and improved data is provided.

6.2.29. An asset record is currently securely held by NCC, which is used in partnership with RMAs in order to carry out duties in relation to the Flood and Water Management Act 2010.

Data Management Protocols

6.2.30. The County Council has established protocols for requesting and sharing information with flood risk management partners, and has also entered into confidentiality agreements with certain organisations. A protocol for the secure storage of data and routine updates has also been established. For more information see Appendix 9.

Objective 3: Enhance the Natural and Historic Environment

“Adopt a sustainable approach to reducing local flood risk, seeking to lessen the risk of localised flooding using mechanisms that are economically viable, deliver wider environmental benefits, conserve and enhance heritage assets and their settings, and promote the wellbeing of local people”

6.3.1. The following activities set out below will enable this objective to be achieved:

- Undertake Strategic Environmental Assessment, Habitats Regulation Assessment and Water Framework Directive Compliance Check;
- Explore opportunities to provide additional flood storage attenuation;
- Encourage natural flood risk management;
• Promote blue and green infrastructure;
• De-culvert in appropriate locations where improvement is required;
• Review land management methods;
• Increase tree coverage in appropriate locations;

6.3.2. It is important that actions taken forward from this Strategy focus on achieving wider environmental benefits, whilst balancing social, economic and environmental aims/objectives to develop sustainable flood risk management measures that deliver wider benefits.

6.3.3. This Strategy will contribute to the achievement of wider environmental objectives in the following ways:

• Encouragement of source control measures (such as Sustainable Drainage Systems known as SuDS), which can help improve water quality through reducing runoff and therefore reducing diffuse pollution entering watercourses and drainage systems. This could also potentially help to meet Water Framework Directive targets for water quality within Northamptonshire, providing there are no associated flood risk implications;
• Promotion of Water Framework Directive targets and River Basin Management Plan actions, to ensure no deterioration of surface water and groundwater and the protection of all water bodies and protected areas with the implementation of any new flood risk management schemes;
• Enhance biodiversity and habitat creation within any future capital schemes, such as SuDS or flood storage areas;
• Assess the positive, neutral and negative impacts of flooding on heritage and environmental assets. This will allow for potential improvements to be identified for these assets in relation to flood risk management works. This is of particular significance given the wealth of important heritage assets in Northamptonshire;
• Help to meet Biodiversity Action Plan (BAP) targets to ensure an increase of habitat through local flood risk management works. As a flood authority, The County Council has a duty (under Section 40(1) of the Natural Environment and Rural Communities Act 2006) to conserve biodiversity within Northamptonshire. The existing BAP habitats within Northamptonshire and the mapped area of habitat opportunity for the River Nene and River Ise corridors is identified on Map A8, and further details can be found at http://northamptonshirebiodiversity.org/habitat-opportunity-map.htm;

Undertake a Strategic Environmental Assessment, Habitat Regulation Assessment and Water Framework Directive Compliance Check

6.3.4. Given the scope and content of this local Strategy, Defra has determined that a statutory Strategic Environmental Assessment (SEA) is required to be prepared by the County Council to support this Strategy. A SEA is undertaken to ensure that any environmental consequences are considered during the preparation of the local Strategy.

6.3.5. A Habitat Regulations Screening Assessment (HRA) has also been undertaken to assess the impacts of implementing the Strategy policies and measures on European Sites within 10km of the county.

6.3.6. Both the HRA and the SEA were developed alongside this Strategy and have therefore been used to inform sustainable decision making throughout, including the development of social, economic and environment objectives, and the consideration of alternative options.

6.3.7. In assessing this Strategy for Water Framework Directive (WFD) compliance, the measures proposed are unlikely to have environmental effects and will not cause
deterioration to water bodies. However, actions identified may require site specific environmental assessment to identify any potential environmental effects. The policies and proposals throughout this Strategy and specifically related to this objective, will actively help to prevent harm to water bodies and will encourage future improvement where possible, for example through restoration or improving the ecological status of water bodies.

**Additional Flood Storage Attenuation**

6.3.8. Flood attenuation areas are designed to reduce flooding by storing runoff during the peak flow and releasing it at a controlled rate during and after the peak flow has passed.

6.3.9. Strategic flood storage areas should be located upstream of urban areas so as to provide multiple flood risk management benefits within a catchment. One of the main advantages of flood storage areas is that flood attenuation generally extends downstream, thus flood alleviation is not just a localised benefit. Flood storage areas can be used as a strategic solution to reduce the increased runoff from new development in the upper end of the catchment and mitigate the flood risk to existing communities downstream.

6.3.10. At a local level, flood storage areas can act as Natural Flood Management (NFM) and could benefit the environment through biodiversity enhancement and habitat creation, therefore contributing to the requirements of the Water Framework Directive. Flood storage often provides amenity improvement and can be linked into the green infrastructure network. There may be opportunities within minerals and waste development and action plans to use mineral extraction sites to store flood water.

**Natural Resilience**

6.3.11. The County Council continues to promote the concept of Natural Resilience by promoting the relationship between biodiversity and climate change adaptation, and the economic benefits that the use of ‘natural interventions’ such as reinstatement of floodplains, tree planting, green roofs, and sustainable drainage systems can bring to Northamptonshire.

6.3.12. Local Nature Partnerships (LNPs) are partnerships of a broad range of local organisations, businesses and people who aim to help bring about improvements in their local natural environment. LNPs work strategically to help their local area manage the natural environment. They aim to make sure that its value, and the value of the services it provides to the economy and the people who live there, is taken into account in local decisions. In particular, LNPs have a role in coordinating closely with Local Enterprise Partnerships to help deliver sustainable growth.

6.3.13. Northamptonshire’s Local Nature Partnership was established in 2012 and oversees the delivery of the NIA. Whilst the County Council’s document “Towards a Naturally Resilient Northamptonshire” provides the framework for their transformational environmental programme, which has a wide range of strategic objectives, it was agreed that the LNP would focus on ten key objectives at the outset.

**Provide Blue and Green infrastructure**

6.3.14. Blue corridors are a component of green infrastructure, adjacent to watercourses or along key overland flow paths, which are designated for the primary purpose of conveying water, particularly in times of flood. They also provide a wide range of additional functions such as amenity and biodiversity conservation. Examples of where blue and green infrastructure has had a positive impact on flood and water management and these additional functions can be found on the Natural England website at [http://publications.naturalengland.org.uk/category/49002](http://publications.naturalengland.org.uk/category/49002).
6.3.15. Working closely with key partners to ensure careful land-use planning and the gradual reinstatement of green open spaces (within existing and new developments), together with the introduction of wetlands and woodlands throughout Northamptonshire, could help reduce flood risk and promote the requirements of the Water Framework Directive. It is essential that access for maintenance and operation of flood risk assets and watercourses is not restricted as a result of the implementation of any blue and green infrastructure.

6.3.16. It is important that opportunities are sought when new development and redevelopment opportunities arise, and that areas of floodplain reinstatement in conjunction with green and blue infrastructure are identified and realised. Particular attention should be given to the review of Local Green Infrastructure Plans when planning any regeneration and development projects.

**De-Culverting**

6.3.17. Where practical and specifically linked to new and re-developed areas, the County Council, when working with its flood risk management partners, will endeavour to promote the de-culverting (also known as “daylighting”) of long stretches of ordinary watercourses and restore them to open channels. This will not only increase conveyance, reduce risk of blockages and minimise the need for trash screens, but in most cases will also lead to the environmental enhancement of the area. A specific policy has been set relating to the culverting of ordinary watercourses, and can be found in the policy section below.

6.3.18. Alternatives to culverting include:

- **Construction of a bridge** – bridges have a much lower impact on the hydraulics and ecology of the watercourse than a culvert, as in general the bed and often the banks of the watercourse can remain undisturbed. For bridges, the fewer piers (supports) within the watercourse itself the lesser the impact on the flow and ecology;

- **Diverting the watercourse** – this option has its own disadvantages and is likely to be significantly more expensive, but diverting a watercourse can provide opportunities for environmental and hydraulic improvement; and

- For small watercourses, it may be possible to **construct a ford**.

6.3.19. The impacts of culverting an ordinary watercourse have been summarised in Table 6.2 below. These impacts need to be considered, and where possible mitigated for, when designing a culvert.

**Table 6.2: Impacts to be considered in the culvert design**

<table>
<thead>
<tr>
<th>Aspect affected</th>
<th>Description of impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology</td>
<td>Culverts can be impassable to certain species of riverine fauna and can create barriers to the movement of fish. Culverting results in the loss of natural in-stream and bank side habitats through direct removal and loss of daylight.</td>
</tr>
<tr>
<td>Pollution</td>
<td>In urban areas, culverted ordinary watercourses are often highly polluted due to misconnected foul sewers, overflows from blocked sewers or discharges of contaminated surface water.</td>
</tr>
<tr>
<td>Morphology</td>
<td>Culverted sections may create or exacerbate downstream or upstream bank and bed erosion or promote sediment deposition, as a result of altered water velocities and disruption to the natural transport of sediment.</td>
</tr>
<tr>
<td>Aspect affected</td>
<td>Description of impact</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Restoration</td>
<td>Culverts can hinder future restoration options. This is particularly significant where urban development results in the burial of once open ordinary watercourses beneath housing or commercial centres, or where new development is placed on top of existing culverted ordinary watercourses, which otherwise might be available for restoration.</td>
</tr>
<tr>
<td>Landscape and amenity</td>
<td>Culverting of urban waters leads to the loss and degradation of distinctive components of the local landscape. Culverting leads to the loss of green amenity space along river banks and reduced access for recreational opportunities such as angling, walking or canoeing.</td>
</tr>
<tr>
<td>Health and safety</td>
<td>Culverts are classed as confined spaces. There is an additional risk if children or animals attempt to enter them.</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Culverts are more difficult to access and maintain than a natural watercourse. In addition, they need replacement when they reach the end of their design life.</td>
</tr>
</tbody>
</table>

6.3.20. In cases where culverting is unavoidable, it is necessary to seek consent from the Environment Agency for main rivers and from the Internal Drainage Board (IDB) on behalf of the Lead Local Flood Authority for ordinary watercourses, in order for culverting to go ahead. The Environment Agency, IDBs and LLFA will scrutinise design submissions carefully to ensure all steps have been taken to reduce environmental degradation (or mitigate it) and to reduce the risk of flooding as well as assess any requirements under the Water Framework Directive. There will be situations where the implementation of culverting is unavoidable, for instance short lengths of culvert may be required for access.

6.3.21. Detailed guidance on the design of culverts can be found in Culvert design and Operation guide (CIRIA, 2010) amongst other guidance.

**Review Land Management Methods**

6.3.22. Farmland soil can be compacted or vegetation removed either seasonally by ploughing, or temporarily as topsoil is stripped to allow for development, so that rainwater is no longer able to soak into the ground. Instead the rainwater flows over the land, carrying soil with it to create a “muddy flood”. Land management techniques can prevent soil from getting compacted and reduce the risk of flooding. Flooding from farmland may also happen as a result of drainage ditches becoming blocked. The farmland itself can be damaged by flooding, both in the short term when flood water destroys crops, and in the longer term if flooding results in waterlogged land or washes away the topsoil which can take years to replace.

6.3.23. The County Council will work with the National Farmers Union through established groups such as the Catchment Sensitive Farming Partnership and the Nature Improvement Area land advisor. They will support the Environmental Stewardship Schemes working with key partners, including; the Environment Agency, the Wildlife Trust and the River Nene Regional Park to ensure surface water runoff is reduced where possible.

6.3.24. It has been demonstrated that surface water runoff can be reduced through the implementation of certain agricultural practices; including ploughing fields in a
perpendicular direction to the slope of the land, reducing the effect of channelling of
water over the land when it rains and through increased planting. These and other
measures have been set out on the Flood Prevention page of the Flood Toolkit at:
http://www.floodtoolkit.com/risk/prevention/

6.3.25. Farmers in receipt of Common Agricultural Policy (CAP) payments are required to
carry out a Soil Protection Review which should identify any problems with soil erosion
and runoff and help identify solutions to the problem. However, poor soil management is
not always the cause of runoff flooding. Heavy rain can cause runoff even where soil is in
good condition.

6.3.26. If you are affected by flooding from agricultural land, you should in the first instance
raise the problem with the farmer concerned. For more advice and guidance visit the
Flood Toolkit at: http://www.floodtoolkit.com/pdf-library/

Increased Tree Coverage

6.3.27. An extremely important land management technique is the increase of tree coverage.
Conserving and restoring native woods and creating new ones can improve water
quality, reduce localised flooding, and may alleviate the effects of larger floods. It is
important to ensure however, that planting does not impede flood flow routes. It is also
essential that access for maintenance and operation of flood risk assets and
watercourses is not restricted as a result of increased tree planting. An example of this
technique in Northamptonshire is the Forests for Life: Rockingham project.

6.3.28. A wide range of research exists on how trees and woods affect various aspects of
water management. Trees affect water quality and quantity in the following ways:

- They intercept rainfall with their leaves, branches and trunks and take up water
  through their roots;
- They stabilise soil with their roots, increase the amount soaking into the soil
  (‘infiltration’) by increasing soil organic matter and improving soil structure;
- Provide shade for fish;
- They reduce the amount of water running off the surface. This helps reduce soil
  erosion, washing of sediment and other contaminants into water, and the effects of
  flooding; and
- They take up nutrients and some pollutants from the soil, and can therefore buffer
  areas of water from the effects of intensive land use.

6.3.29. Trees can however drop branches and leaves, which can cause blockages to
watercourses and drainage systems, they can also be blown over and damage flood
banks. Therefore careful consideration needs to be given to the location of planting and
management/maintenance techniques.

Objective 4: Preparedness and Resilience

“Reduce the harmful consequences of local flooding to communities and human
health through proactive actions, activities and education programmes that enhance
preparedness and resilience to local flood risk, and contribute to minimising
community disruption”

6.4.1. The following activities set out below will enable this objective to be achieved:

- Active enforcement, maintenance and inspection;
- Encourage flood risk management works;
- Improve emergency planning, response and recovery to flooding;
- Improve public awareness and understanding of flooding and flood risk management;
- Promote property level resilience;
• Promote the Flood Toolkit for self-help for home owners, communities and businesses;
• Continue to support local communities to develop community flood plans to protect residential and commercial properties, community facilities and amenities, and promote the community flood warden scheme; and
• Promote the take up of flood protection insurance.

Active Enforcement, Maintenance and Inspection

6.4.2. Active regulation and enforcement will be undertaken by the County Council when considered necessary to ensure flood risk is reduced where possible.

6.4.3. This will be supported by the investigation of flooding incidents to identify causal factors and where appropriate undertake the necessary enforcement or corrective action.


Improve Emergency Planning, Response and Recovery to Flooding

6.4.5. Emergency Planning and the related response to and recovery from flood events are a key element to local flood risk management. Emergency Planning is quite simply an activity intended to prevent and reduce the disruption and harm to communities from both natural and man-made hazards.

6.4.6. The County Council’s Emergency Planning Team:
• Provides a planning, training and response service to all local authorities in Northamptonshire to facilitate effective co-ordinated action in an emergency;
• Provides advice to communities on the production of Community Emergency and Flood Plans and promotes the flood warden scheme;
• Coordinates the Northamptonshire Multi-Agency Flood Plan; and
• Takes the lead role, on behalf of the County Council, in co-ordinating the response of the local authority in supporting the emergency services and other agencies for the benefit of those people who live and work in and visit Northamptonshire.

6.4.7. Local authorities are defined as category one responders under the Civil Contingencies Act (2004) and therefore have an important role to play in emergency planning and flood response and recovery. The Civil Contingencies Act (2004) requires category one responders to have plans in place to respond to emergencies and the most relevant plan in Northamptonshire is referred to as the Multi Agency Flood Plan.

6.4.8. The Northamptonshire Multi-Agency Flood Plan is owned by the Northamptonshire Local Resilience Forum, but is maintained and updated by the County Council. The plan does not include flood risks from foul sewage, burst water mains, canals, private lakes, or reservoir dam failure, but does include all river, surface water and groundwater flooding. Reservoir dam failures are covered by separate plans and arrangements.

6.4.9. In specific flood risk areas, the Environment Agency issues flood warnings for river and coastal flood risk to those registered on the Floodline Warnings Direct system and through the Floodline. There is also an online service that shows the current flood warning situation in England and Wales. It is essential that those properties at risk understand this risk and are encouraged to sign up to the Environment Agency’s Flood Warning Service.

6.4.10. It is important that this flood warning system is used to inform the emergency planning process, to ensure that communities and responders are able to react to flood warnings in a timely and effective manner. Improving the emergency planning
procedures in areas at risk from surface water flooding will help to ensure the safety of people, property and community facilities by ensuring that necessary plans are established.

**Improve Public Awareness and Understanding of Flooding and Flood Risk Management**

6.4.11. Community resilience is about communities using local resources and knowledge to help themselves during an emergency in a way that complements the local emergency services. Communities will be better prepared to cope during and after a flooding emergency if everyone works together using their local knowledge. Identifying and planning for the risks that may be encountered during a severe flood could help in reducing the potential impact on individuals and the wider community. Being prepared and able to respond to an emergency can also help communities recover more quickly. The Flood Toolkit has been designed to provide detailed design and guidance on how to become a resilient community: http://www.floodtoolkit.com/how-to-guides/community-project/

**Community Flood Plans**

6.4.12. Working together as a community or group to complete a Community Flood Plan will help them respond quickly when flooding happens. It can help them decide what practical actions to take before and during a flood, helping reduce the damage flooding can cause. The plan should also identify vulnerable people within the community that would need assistance in the event of a flood.

6.4.13. The community flood plan will also provide practical steps that can be taken to inspire and involve other residents within the community to work together to improve their knowledge of the risks of flooding and how to deal with flooding incidents. The County Council can provide help and support on how to develop these for your community. The template for the Northamptonshire Community Emergency and Flood Plan can be found on the flood toolkit here: http://www.floodtoolkit.com/pdf-library/

**Community Flood Wardens**

6.4.14. Community Flood Wardens are volunteers who help ensure the Environment Agency flood warning messages reach residents. They also act as the ‘eyes and ears’ of the community by updating the Environment Agency, the County Council and Emergency Services about the situation on the ground. More information about how to become a Flood Warden and what is involved can be found on the Flood Toolkit: http://www.floodtoolkit.com/pdf-library/

**Promote Flood Resilience and Resistance Measures and Property Level Protection**

6.4.15. It is recommended that a general approach to improving community resilience is adopted across Northamptonshire. This should include the assessment of any potential flood alleviation schemes that may be required, the encouragement of property resilience through the installation of individual property protection measures, such as the use of flood gates and air brick covers, as well as a general increase in awareness and preparedness for a flood event. Information about property level resilience for both residential and commercial properties can be found at: http://www.floodtoolkit.com/risk/prevention/

**Promote Flood Protection Insurance**

6.4.16. Insurance plays a key role in flood risk management. It is estimated that there are 5.2 million properties at risk of flooding in England. Of these 2.8 million are at risk from surface water. In most cases, flood insurance is part of a buildings and contents
insurance policy. Property insurance safeguards your most valuable assets, your home and its contents. Being unable to secure adequate insurance can affect mortgages. Additional advice and guidance can be found on the Flood Toolkit: http://www.floodtoolkit.com/pdfs/13%20Insurance/13.Insurance.html

Objective 5: Flood Risk and Development

“Minimise the increase in local flood risk that may arise from new development by producing guidance, setting standards, promoting the sustainable use of water and supporting the development of local policies and guidance, discouraging wherever possible surface water runoff in new and future developments and where possible influencing or supporting developments that seek to reduce existing flood risk”

6.5.1. The following activities set out below and listed within the Action Plan will enable this objective to be achieved:

- Implementation of sustainable drainage and source control measures;
- Assessment of the surface water drainage implications of major development;
- Production of guidance relating to Sustainable Drainage Systems (SuDS) and to groundwater flooding;
- Utilisation of designation powers;
- Use of consenting powers for certain works affecting ordinary watercourses;
- Adherence to policies;

6.5.2. The Northampton Waterside Enterprise Zone (EZ) was designated in August 2011 and is composed of more than 20 sites along the River Nene, stretching from Sixfields in the west, right across the town centre of Northampton.

6.5.3. The EZ introduced the concept of ‘simplified planning’ to reduce the burden on development and business. Within the EZ there are three Local Development Orders (LDOs) which have been developed and replace the need for planning permission. The three areas include St James, Sixfields and St Peters.

6.5.4. All development within this zone will still require an assessment of flood risk from all sources. It is therefore recommended that early contact is made with the Local Planning Authority to determine the level and type of assessment required. Where new Enterprise Zones are created, they should have full consideration to the existing flood risk context.

Implementation of Sustainable Drainage and Source Control Measures

6.5.5. Planning regulations came into force in April 2015 designed to ensure, where possible, that Sustainable Drainage Systems (SuDS) are used on major new developments in England.

6.5.6. As a result of this, Lead Local Flood Authorities became statutory consultees to the planning process, to assess applications for their surface water drainage implications, as an alternative to implementation of the ‘SuDS Approval Body’ as set out in Schedule 3 of the Flood and Water Management Act (2010).

6.5.7. Therefore, there is a presumption that new development should incorporate efficient, resilient and flexible sustainable drainage systems rather than traditional engineered, below ground drainage. The SuDS approach to surface water drainage aims to deliver better management of surface water runoff and promote the sustainable use of water, including allowing for the collection and storage of surface water. SuDS aim to mimic natural drainage processes by limiting the rate and volume of surface water runoff, as well as treating water to improve quality.
6.5.8. Local Planning Authorities (LPAs) must consult the County Council as LLFA on all major planning applications. The LLFA will then review drainage plans and strategies for these applications and provide advice to the LPA on whether the development should be approved on surface water drainage grounds.

6.5.9. The County Council as LLFA encourages all new development and redevelopment that requires planning permission to use SuDS in order to reduce flood risk, improve water quality and present options for biodiversity and public amenity. This is consistent with existing national guidance and local planning policy.

6.5.10. In support of the statutory consultee role, the County Council can provide technical advice to developers on surface water drainage design and other local sources of flood risk. The use of pre-application discussions is advocated to ensure SuDS can be incorporated into developments at the early stage of design, and to streamline the planning approval process. Developers can also apply for data and information relating to flood risk for their site, to inform and supplement any flood risk/drainage assessment. There are charges for both of these services, the details of which can be found at www.floodtoolkit.com/planning/surface-water-drainage.

Production of Guidance

Northamptonshire Surface Water Drainage Guidance

6.5.11. The County Council has produced local guidance and standards for Surface Water Drainage in Northamptonshire, which aims to assist developers in the design of surface water drainage systems, and to assist Local Planning Authorities in considering drainage proposals for new developments within Northamptonshire.

6.5.12. The guide sets out standards that will be applied by the LLFA for new development proposals in Northamptonshire, which reflect the National Non-Statutory Technical Standards for SuDS. The guide provides Northamptonshire-specific information on the planning, design and delivery of surface water drainage, and particularly SuDS, that are designed to reduce the risk of flooding and maximise environmental gain, including water quality, water resources, biodiversity, landscape and amenity. The guide also aims to ensure that all new developments and redevelopments in the county are designed to mitigate and adapt to the effects of climate change. The guide also sets out the information that is expected to be submitted with planning applications to enable an efficient review and approvals process. The guide and supporting information can be found online at www.floodtoolkit.com/planning/surface-water-drainage.

Northamptonshire Groundwater Flooding Guidance

6.5.13. The County Council has produced new guidance in relation to groundwater flooding in Northamptonshire, for developers, planners and homeowners in the County. The guidance aims to:

- Explain what groundwater flooding is and its various causes;
- Identify areas within Northamptonshire that are potentially susceptible to groundwater flooding, including spring emergence;
- Provide a methodology to assist planning officers and flood risk engineers to establish the risk of groundwater flooding at individual sites;
- Set out a procedure for undertaking the assessment of groundwater risk for developers based on known susceptibility, development proposals and local ground conditions.
Utilisation of Designation Powers

6.5.14. Designation is a form of legal protection reserved for certain key structures or features that are privately owned and maintained, but which make a contribution to the flood risk management at a particular location. This is to ensure that the risk of a person altering or removing a structure or feature, which is relied on for flood risk management, without consent is prevented.

6.5.15. A designation is a legally binding notice served by the designating authority to the owner of the feature and the notice is also a local land charge. This means that the notice will also apply to any successive owners or occupiers of land or property where a designation exists automatically.

6.5.16. The authorities with the power to designate are:
- the Environment Agency;
- the Lead Local Flood Authority;
- the relevant Borough or District Council; and
- Internal Drainage Boards.

Consenting Powers for Works Affecting Ordinary Watercourses

6.5.17. Section 23 of the Land Drainage Act states that consent is required for:
- The erection of any mill, dam, weir or structure that will affect the flow of an ordinary watercourse; or
- The erection or alteration of a culvert in an ordinary watercourse.

6.5.18. This has been interpreted by the County Council as applying to any obstruction, which might impede flow of water and hence increase flood risk.

6.5.19. Under Section 13(4) of the Act, the County Council can arrange for another Flood Risk Management Authority to carry out flood risk management functions on the council’s behalf.

6.5.20. The County Council has arranged for this flood risk management function to be undertaken by the Bedford Group of Drainage Boards. This decision was taken because they already cover part of the geographical area of Northamptonshire (South Northants), they currently process consent applications, they are a non-for-profit making authority and they will be taking on this same function for several neighbouring Lead Local Flood Authorities, therefore keeping the process consistent across the region.

6.5.21. Some applicants may require several different consents or perhaps even a temporary consent, and will be advised accordingly. For example works in Northamptonshire with the potential to affect water quality may also require a discharge consent (environmental permit) from the Environment Agency as well as a consent from the Bedford Group of Drainage Boards relating to the structure.

6.5.22. Perspective applicants are encouraged to visit the Bedford Group of Drainage Boards website for a consenting guidance pack and to undertake pre application discussions with officers, which could include the submission of preliminary drawings and a site meeting. Applicants are then required to complete the application form and will be required to make the relevant payment as set by legislation.

6.5.23. There is a two month period (from the receipt of the application) to determine (approve or refuse) a consent application. If no conclusion is reached after this period, the consent is automatically granted (a deemed consent).
**Consenting Policy Requirements**

6.5.24. The following policies relate to the ordinary watercourse consenting process. If any works are proposed on ordinary watercourses outlined within the policies below, such as culverting, stopping or diverting watercourses, formal ordinary watercourse consent will be required. The consenting process requires all environmental considerations to be assessed.

<table>
<thead>
<tr>
<th>Policy 1: Culverting of Ordinary Watercourses</th>
</tr>
</thead>
<tbody>
<tr>
<td>No ordinary watercourse should be culverted unless there is an overriding need to do so.</td>
</tr>
</tbody>
</table>

6.5.25. There is a general presumption against culverting ordinary watercourses, unless it can be demonstrated that this represents the most sustainable means of drainage management. This is because:

- The ecology of the watercourse is likely to be degraded by culverting;
- Culverting introduces an increased risk of blockage (with consequent increase in flood risk); and
- It can complicate maintenance because access into the culvert is restricted (in some cases being classified as a confined space and requiring trained operatives and specialist equipment).

6.5.26. Defra published a set of model land drainage byelaws. As upper tier authorities do not hold the powers to make such byelaws, the County Council has transposed these byelaws into Policies and therefore any works relating to these policies will require formal ordinary watercourse consent. The aims of the Policies are to:

- Secure the efficient working of a drainage system in the Council’s area;
- Regulate the effects on the environment in the Council’s area of a drainage system;
- Secure the effectiveness of flood risk management work; and/or
- Secure the effectiveness of works done in reliance on section 38 or 39 of the Flood and Water Management Act 2010 (incidental flooding or coastal erosion).

<table>
<thead>
<tr>
<th>Policy 2: Introduction of Water and Increase in Flow or Volume of Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>No person shall as a result of development (whether or not such development is authorised by the Town and Country Planning Act 1990 or any regulation or order whatsoever) for any purpose by means of any channel, siphon, pipeline or sluice or by any other means whatsoever introduce any water into any ordinary watercourse in the area so as to directly or indirectly increase the flow or volume of water in any ordinary watercourse in the area (without the previous consent of the relevant flood risk management authority).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy 3: Control of Sluices etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any person having control of any sluice, or water control structure or appliance for introducing water into any ordinary watercourse in the area or for controlling or regulating or affecting the flow of water in, into or out of any ordinary watercourse shall use and maintain such sluice, water control structure or appliance in accordance with such reasonable directions as may from time to time be given by the relevant flood risk management authority with a view to the prevention of flooding in the area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy 4: Diversion or Stopping up of Ordinary Watercourses</th>
</tr>
</thead>
<tbody>
<tr>
<td>No person shall, without the previous consent of the relevant flood risk management authority, take any action, or knowingly permit or aid or abet any person to take any action to stop up any ordinary watercourse or divert or impede or alter the level of or direction of the flow of water in, into or out of any ordinary watercourse.</td>
</tr>
</tbody>
</table>
**Policy 5: Detrimental Substances not to be Put into Ordinary Watercourses**

No person shall, so as directly or indirectly to obstruct, impede or interfere with the flow of water in, into or out of any ordinary watercourse or so as to damage the bank -

(a) discharge or put or cause or permit to be discharged or put or negligently or wilfully cause or permit to fall into any ordinary watercourse any object or matter of any kind whatsoever whether solid or liquid;

(b) allow any such object or matter as is referred to in sub-paragraph (a) of this Policy to remain in proximity to any ordinary watercourse in such manner as to render the same liable to drift or fall or be carried into any watercourse.

Provided that nothing in this Policy shall be deemed to render unlawful the growing or harvesting of crops in accordance with normal agricultural practice.

**Policy 6: Notice to Cut Vegetation**

Any person having control of any ordinary watercourse shall, upon the receipt of a notice served on that person by the relevant flood risk management authority requiring that person so to do, cut down and keep cut down all vegetation, including trees, growing in or on the bank of an ordinary watercourse, within such reasonable time as may be specified in the notice, and shall remove such vegetation, including trees, from the ordinary watercourse immediately after the cutting thereof.

Provided that, where a hedge is growing on the bank of a ordinary watercourse, nothing in this Policy shall require more than the pruning of the hedge so as to prevent it from growing over or into the ordinary watercourse, and the removal of the resultant cuttings.

**Policy 7: No Obstructions within 9 Metres of the Edge of the Ordinary Watercourse**

No person without the previous consent of the relevant flood risk management authority shall erect any building or structure, whether temporary or permanent, or plant any tree, shrub, willow or other similar growth within 9 metres of the landward toe of the bank where there is an embankment or wall or within 9 metres of the top of the bank where there is no embankment or wall, or where the watercourse is enclosed within 9 metres of the enclosing structure.

Note: The Environment Agency also have similar byelaws relating to main river distances, which is 8 metres.

**Policy 8: Repairs to Buildings**

The owner of any building or structure in or over an ordinary watercourse or on the banks thereof shall, upon receipt of a notice from the relevant flood risk management authority that because of its state of disrepair -

(a) the building or structure is causing or is in imminent danger of causing an obstruction to the flow of the ordinary watercourse;

(b) the building or structure is causing or is in imminent danger of causing damage to the bank of the ordinary watercourse,

carry out such reasonable and practicable works as are specified in the notice for the purpose of remedying or preventing the obstruction or damage as the case may be within such reasonable time as is specified in the notice.
Objective 6: Economically sustainable approach

“Ensure the financial viability of flood related schemes through the development of appropriate policies and assessment tools to ensure that flood risk management measures provide value for money whilst minimising the long-term revenue costs. Seeking to use natural processes where possible or source the costs of any maintenance from the financial beneficiaries of the development”

6.6.1. The intention of this objective is to give decision makers and investors in flood risk management the insight into economically sustainable and viable local flood improvement opportunities and how they might be funded. The partners of the Northamptonshire Flood and Water Management Framework have agreed that a shared programme of Flood Risk Management should therefore be promoted.

6.6.2. The following activities set out below and listed in the Action Plan will enable this objective to be achieved:

- Working together, aligning stakeholders with those who would benefit from further investment in flood risk management;
- Prioritised approach to implementing the most sustainably cost effective measures to reduce flood risk;
- Identification of alternative funding sources;
• Determine what can be afforded with available funding;
• Utilise the new partnership approach to funding;
• Create an annual programme of works; and
• Consider local needs, priorities and pressures.

Working Together

6.6.3. A key objective of this Strategy is to align stakeholders, particularly those with available funding, with those who would benefit from further investment in flood risk management. Within this process, developing options for investment will need to test the local appetite for reducing the risk of flooding against the willingness to meet any additional costs that are not covered by central government support via the Flood and Coastal Erosion Risk Management Grant in Aid (FCERM GiA). It is important to note that at the time of writing this Strategy, this is set against a backdrop of limited resources and low economic activity nationally.

6.6.4. A coordinated approach led by the County Council as Lead Local Flood Authority is therefore considered essential and this will include a partnership approach to FCERM GiA and other relevant bids. Each proposed flood risk management scheme will be assessed separately to identify which partners should be involved and could comprise:

• The Environment Agency;
• Water companies;
• Borough and District Councils;
• The Internal Drainage Board;
• Regional Flood and Coastal Committees; and
• Beneficiaries and communities.

6.6.5. The County Council will be considering all forms of funding identified in Appendix 7 and will ensure that when opportunities arise, detailed and robust bids are submitted. The County Council will also provide a coordinating and supporting role for the local authorities to submit scheme specific bids. The Strategic Flood Risk Board has been tasked with maximising opportunities to influence partner strategies and resource allocations and to maximise external funding.

6.6.6. Through the close working partnerships established, the County Council will ensure:

• Good engagement amongst key decision makers, partners, communities and other stakeholders;
• More effective and transparent prioritisation between competing projects throughout the county and also between projects tackling different sources of risk; and
• A compelling business case for external contributions and other local investment, by showing that relatively small amounts of local investment over time may have a big impact in terms of long-term residual risk for an area, with any implications for property and land values and insurability taken into account.

Prioritised Approach

6.6.7. Although the benefits of individual flood risk management measures are often many times greater than their cost, it is not technically, economically or environmentally possible to prevent all flooding. Therefore this Strategy will implement the most sustainably cost effective measures that will help to reduce flood risk and help to manage the impacts felt by communities, as each action is considered in more detail.

6.6.8. For each potential project or scheme outlined in the Action Plan, the following will be assessed:

• The potential for these projects to receive national FCERM GiA funding;
• Where schemes are unlikely to be affordable, to suggest where a different approach may be needed, such as a reduced standard of protection or property resilience measures; and
• How any identified funding gaps might be filled, either by drawing upon partners’ resources or pursuing wider sources of funding.

6.6.9. Following an assessment of the geographical areas within Northamptonshire at most risk of potential flooding, and comparing this with the highest levels of deprivation within the county, it has been possible to establish those areas that would be most likely to attract national FCERM GiA funding. These areas were associated with the towns of Corby, Kettering, Northampton and Wellingborough.

6.6.10. Specific aims have been outlined in the Action Plan to ensure Objective 6 is met and include the need to:
• Continue to develop and establish short and long term funding arrangements to deliver the requirements of the Flood and Water Management Act;
• Continue to bid for relevant funding as and when the opportunity arises, to support future projects and flood alleviation schemes i.e. FCERM GiA funding; and
• Ensure Infrastructure Development Plans, Community Infrastructure Strategies and Transport Infrastructure Plans are influenced by this Strategy and that developer funding is sought where considered appropriate and necessary.

6.6.11. The progress of these actions will be monitored and reviewed on an annual basis. These aims also link to the principles of reducing flood risk through new development and regeneration, and promoting the development of flood alleviation schemes in partnership with others, under Objective 5.

Identification of Funding Sources

6.6.12. There are a number of different sources of funding for flood and water management work, which are set out in Appendix 7. These range from European to national, regional and local sources of funding, including both direct and indirect beneficiaries from flood alleviation schemes.

6.6.13. Communities and individuals who are interested in seeking funding for flood risk management interventions can also use the online Funding Tool which indicates potential alternative sources of funding, such as local charities and grants. For more information see www.floodtoolkit.com/risk/funding.

6.6.14. When information or studies become available, any schemes, including their costs, will be identified and recommended for inclusion within the relevant Infrastructure Delivery Plan or Community Infrastructure Levy list.

What can be Afforded

6.6.15. There are several aspects to determining what can be afforded. Firstly, there is a need to understand the scale of the problem and the likely costs to address them. Schemes will only be taken forward where it can be clearly demonstrated that the cost benefit ratio is favourable, through a Cost Benefit Analysis. An examination is then carried out into the amount of funding support that could be accessed with modest or no reliance on local funding sources or support from the local population and beneficiaries. It can then be reviewed how much added value can be gained by seeking local contribution (referred to as local partnership funding). Finally, consultation would occur to establish the appetite for investment in flood risk management and then investment planning can be finalised.
**Partnership Funding**

6.6.16. In the past, most flood risk management schemes have been built using Defra central government funding (FCERM GiA), with allocation based on a national prioritisation. Local Levy (raised by Regional Flood and Coastal Committees by way of levy on local Authorities) was allocated towards local priorities, including projects that could not attract FCERM GiA.

6.6.17. Clearly, access to FCERM GiA is vital for any substantial flood risk management investment programme. Planned spending on this is captured in the Environment Agency’s six year Medium Term Plan (or Sanctioned List). In order to attract FCERM GiA, projects need to be devised in order to achieve specific outcomes outlined by Defra. The higher the outcome measure (a score based on how much local partnership funding is to be provided, as well as the number of properties protected and a number of environmental benefits) the more likely it is that funding will be forthcoming.

6.6.18. Now there is an emphasis on funding from external contributions towards schemes, because FCERM GiA is allocated based on the benefits a scheme delivers, which may not cover the full cost. Even where FCERM GiA will cover the full costs, there will still be a case to be made for local contributions, which will increase the overall amount of grant that is available for other schemes. The amount of FCERM GiA and Local Levy available is unknown until all bids have been received and processed by the Environment Agency and Regional Flood and Coastal Committees.

6.6.19. For more information on Partnership Funding see Appendix 7.

**Programme of Works**

6.6.20. Actions have been included within this Strategy to continue bidding for funding as well as influencing communities and beneficiaries of potential schemes as and when they are developed. Where it is not possible to fill funding gaps, it will be necessary to explore alternative solutions to reduce the costs of the schemes.

6.6.21. The first process to develop any scheme is to consult with the key partners, in order to discuss and agree funding options and to assess any environmental implications. All partners and potential sources of funding have been set out in the Action Plan. For the majority of the schemes, further investigation studies are required to reduce the uncertainties, to get a clearer understanding of the requirements of the scheme and to allow for FCERM GiA bids to be submitted.

**Local Requirements**

6.6.22. The local requirement for the implementation of flood alleviation schemes is often promoted in response to flooding incidents or local pressures rather than on the basis of a strategic prioritisation of potential flood risk.

6.6.23. The County Council recognises that each of its partners adopts different approaches to prioritising investment in flood risk management, but through the close working relationships with partners and as new studies are undertaken, knowledge is gathered and new data is produced, this will assist in building knowledge and understanding of local flood risk.

6.6.24. This in turn will help the County Council and its partners to increasingly adopt risk-based approaches to local flood risk management; prioritising investment and resources to the areas of highest risk within the county.
**Objective 7: Riparian Responsibilities**

“Encourage flood management activities by private owners of ordinary watercourses and flood defence structures as well as limit the development of constrictions on ordinary watercourses”

6.7.1. The following activities set out below and listed within the Action Plan will enable this objective to be achieved:

- Active engagement with, and provision of advice for, Riparian Owners;
- Active encouragement and enforcement of flood risk management activities by Riparian Owners;
- Provision of advice on how to resolve nuisance flooding; and
- Provision of advice on mediation and legal proceedings.

**Active Engagement and Advice**

6.7.2. The maintenance and clearance of watercourses plays a key role in land drainage and flood risk management. Responsibility for maintenance of watercourses, particularly in relation to roadside ditches and small streams, is not generally well understood by the public.

6.7.3. Unless property deeds clearly state otherwise, people who own land adjacent to watercourses are known as Riparian Owners under Common Law, and have responsibility for ensuring the free flow of water within their section of the watercourse. Riparian owner’s rights and responsibilities have been set out in Flood Guide 15 on the Flood Toolkit: [https://www.floodtoolkit.com/wp-content/uploads/2017/05/15_Riparian-responsibilities.pdf](https://www.floodtoolkit.com/wp-content/uploads/2017/05/15_Riparian-responsibilities.pdf). The rights and responsibilities are also set out in the Environment Agency’s document “Living on the Edge – a guide to the rights and responsibilities of riverside occupation”, which can be found on their website at [http://www.environment-agency.gov.uk/homeandleisure/floods/31626.aspx](http://www.environment-agency.gov.uk/homeandleisure/floods/31626.aspx).

6.7.4. It is essential that the County Council inform all riparian owners of their legal duty to maintain watercourses in neglected areas as well as the requirement to obtain formal consent for works affecting ordinary watercourses and flood attenuation measures, which will consider all environmental implications of the proposed works.

**Active encouragement and enforcement of flood risk management activities by Riparian Owners**

6.7.5. To reduce flood risk in the county, the County Council will continue to actively encourage riparian owners to undertake flood risk management activities on their land, through a process of cooperation, advice and assistance wherever possible.

6.7.6. The County Council has prepared a range of guidance documents to help riparian owners in their flood risk management activities which can be found online at [www.floodtoolkit.com/pdf-library](http://www.floodtoolkit.com/pdf-library) under Flood Guides. Under the Land Drainage Act 1991, all councils have the powers to serve notice on riparian owners, for the removal of any blockage to an ordinary watercourse. Should the riparian owner fail to do so, the council has powers to undertake the work themselves and recharge the costs to the riparian owner. The County Council will always try to resolve problems through discussion with the owners in the first instance and enforcement of legislation will only ever be used as the last resort.

**Advice on How to Resolve Nuisance Flooding**

6.7.7. Where nuisance flooding is being caused by new buildings, walls or hard surfaces (e.g. driveways, car parks, pavements) you may wish to contact the planning department of your local council to see if there has been a breach of planning permission. Since 1st
October 2008, property owners in England require planning permission if they wish to pave over their front gardens with non-permeable materials.

6.7.8. New walls and buildings may also require planning permission, whilst some developments may have had conditions attached to the planning permission to require that the development be constructed in a certain way (e.g. adequate drainage provision). You can check with your local authority as to whether the proper planning permissions have been given and any conditions of that permission have been met.

Advice on Mediation and Legal Proceedings

6.7.9. Advice on settling disputes over land drainage issues such as riparian responsibilities, and land management, can be found online in Leaflet 1 Agricultural Runoff at http://www.floodtoolkit.com/pdfs/1%20Agricultural%20Run-off/1.Flooding-Agricultural-runoff.pdf. This guide sets out how to use Tribunals, Courts or Mediation to address and resolve these issues.
7. **ACTION PLAN**

7.1. The separate LFRMS Action Plan document highlights the key objectives of this Strategy and associated actions to achieve them. It also draws out previously identified actions within flood and water technical documents related to Northamptonshire, which have not yet been implemented.

7.2. For each of the actions the aim, timescales for completion, costs and potential funding sources are provided where this information is available. Any partners identified to support the delivery of the actions are outlined. The general approach to funding is set out in Objective 6.

7.3. The action plan also identifies a number of potential flood alleviation schemes. Most require further investigation to assess their viability, but have been compiled from information drawn from a number of different sources including: those submitted for government funding in the past but have been unsuccessful; schemes recommended within technical documents and potential improvement; and repair works identified by Northamptonshire Highways.

7.4. The Action Plan will be updated on an annual basis as and when new and improved information is provided.
8. STRATEGY MONITORING AND REVIEW

8.1. Continued monitoring, review and development of this Strategy are essential to ensure that local flood risk management is responsive to change. This ongoing monitoring and review will be undertaken through the Northamptonshire Flood and Water Management Framework by the Local Flood Risk Operational Group, and will be overseen by the Strategic Flood Risk Management Board.

8.2. Although there is no statutory deadline for the Strategy to be produced or updated, regular review will ensure that local flood risk management is based on the best and most up to date knowledge so that partners can successfully manage flood risk both now and in the future.

8.3. This Strategy will be updated every five years and the action plan will be updated annually. Key triggers may also require the update of specific sections of this Strategy more regularly, including if the following occur:

- Amendments to partner responsibilities;
- Updates to legislation;
- Alterations in the nature or understanding of local flood risk; and/or
- A significant flood event.

8.4. In these circumstances the triggers will be reviewed and a decision made as to whether this Strategy requires a full or partial review. If only minor changes are required these will be undertaken and this Strategy will be updated and placed on the Northamptonshire Flood Toolkit: www.floodtoolkit.com.

Monitoring

8.5. The purpose of monitoring is twofold, as monitoring needs to consider both beneficial and adverse effects. Firstly, to measure the actual significant effects of implementing the objectives and actions of this Strategy and measure contribution towards achievement of desired objectives. Secondly, it assists in identification of unforeseen adverse effects and the need to undertake appropriate action.

8.6. The approach taken to monitoring will be objective and target led. It is not necessary to monitor everything, or monitor an effect indefinitely; instead monitoring should be focused on significant effects. The associated action plan will be fed into the Directorate plan, which is regularly monitored and reviewed against key performance indicators, which are reported quarterly.

8.7. Monitoring should aim to ensure that the policies and actions contribute towards the strategies objectives, as well as the Strategic Environment Assessment objectives.
### APPENDIX 1: GLOSSARY

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breach</td>
<td>Flooding caused by the constructional failure of a flood defence or other structure that is acting as a flood defence.</td>
</tr>
<tr>
<td>Catchment Flood Management Plans (CFMP)</td>
<td>Catchment Flood Management Plans have been produced by the Environment Agency and are high-level planning tools that set out objectives for flood risk management for each river catchment and estuary. They also identify flood risk management policies that are economically practical, have a potential life of 50 to 100 years, and will aid partnership working to put them in place. CFMPs consider inland risk from rivers, surface water, groundwater and tidal flooding but do not consider sewer flooding. The CFMPs that cover Northamptonshire are: River Nene Catchment Flood Management Plan (December 2009), Thames Catchment Flood Management Plan (December 2009), Draft Great Ouse Catchment Flood Management Plan Summary Report – (April 2010) and the River Welland Catchment Flood Management Plan Summary Report (December 2009). Catchment Flood Management Plans have now been superseded by Flood Risk Management Plans.</td>
</tr>
<tr>
<td>Civil Contingencies Act (2004)</td>
<td>The Civil Contingencies Act establishes a framework for emergency planning and response to large scale emergencies, such as flooding. The Act defines the obligations of different organisations and provides additional powers for the Government during an emergency. The Act designates the County Council as a category one responder, meaning it has a legal responsibility to assess the risk of emergencies and put plans in place to manage them.</td>
</tr>
<tr>
<td>Climate Change</td>
<td>A long-term change in the statistical distribution of weather patterns over periods of time that range from decades to millions of years. It may be a change in the average weather conditions or a change in the distribution of weather events with respect to an average, for example, greater or fewer extreme weather events. Climate change may be limited to a specific region, or may occur across the whole planet.</td>
</tr>
<tr>
<td>Climate Change Act (2008)</td>
<td>An Act that requires a UK-wide climate change risk assessment every five years, accompanied by a national adaptation programme that is also reviewed every five years. It also requires public bodies and statutory organisations such as water companies to report on how they are adapting to climate change.</td>
</tr>
<tr>
<td>Commencement Order</td>
<td>An instruction that brings a defined aspect of legislation into force.</td>
</tr>
<tr>
<td>Conservation of Habitats and Species</td>
<td>An Act which transposed the Habitats Directive into UK law. The regulations aim to help maintain and enhance biodiversity throughout the EU, by conserving natural habitats, flora and fauna. The main way it does this is by establishing a coherent network of protected areas and strict protection measures for particularly rare and threatened species.</td>
</tr>
<tr>
<td>Regulations (2010)</td>
<td></td>
</tr>
</tbody>
</table>
Critical Infrastructure

A term used to describe the assets that are essential for the functioning of a society and economy. Most commonly associated with the term are facilities for: electricity generation, transmission and distribution; gas production, transport and distribution; oil and oil products production, transport and distribution; telecommunication; water supply (drinking water, waste water/sewage, stemming of surface water (e.g. dikes and sluices)); agriculture, food production and distribution; heating (e.g. natural gas, fuel oil, district heating); public health (hospitals, ambulances); transportation systems (fuel supply, railway network, airports, harbours, inland shipping); financial services (banking, clearing); and security services (police, military).

Culvert

A closed conduit or pipe used for the conveyance of water under a road, railway, canal, property, or other impediment.

Defence (Flood Defence)

A structure that alters the natural flow of water or flood water for the purposes of flood defence, thereby reducing the risk of flooding. A defence may be ‘formal’ (a structure built and maintained specifically for flood defence purposes) or ‘informal’/‘defacto’ (a structure that provides a flood defence function but has not been built and/or maintained for this purpose).

EC Floods Directive

A European Directive that has been transposed to UK law through the Flood Risk Regulations (2009).

Environment Agency

An Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs and an Assembly Sponsored Public Body responsible to the National Assembly for Wales. The Environment Agency’s principal aims are to protect and improve the environment, and to promote sustainable development. They play a central role in delivering the environmental priorities of central government and the Welsh Assembly Government through our functions and roles.

Flood

A flood is an overflow of an expanse of water that submerges land. Both the Flood and Water Management Act (2010) and the Flood Risk Regulations (2009) state that it doesn’t matter whether a flood is caused by: heavy rainfall; a river overflowing its banks of being breached; a dam overflowing or being breached; tidal waters; groundwater; or anything else including a combination of factors. However, both state that a ‘flood’ does not include: a flood caused from any part of a sewerage system, unless wholly or partly caused by an increase in the volume of rainwater (including snow and other precipitation) entering or otherwise affecting the system; or a flood caused by a burst water main.

Flood Map for Planning (rivers and sea)

A multi-layered map produced by the Environment Agency, which provides information on flooding from rivers and the sea for England and Wales, in the form of Flood Zones. The Flood Map also has information on flood defences and the areas benefiting from those flood defences. This map is intended for use as a planning tool. The Environment Agency has also published maps of the Risk of Flooding from Rivers and Seas, which includes the impact of any flood defences in the area.
Flood Map for Surface Water: The most recently produced data set developed by the Environment Agency. The Flood Map for Surface Water represents the mechanisms that cause surface water flooding.

Flood and Water Management Act (2010): The Act brings together the recommendations of the Pitt report and previous policies, to improve the management of water resources and create a more comprehensive and risk based regime for managing the risk of flooding from all sources. The Act reinforces the need to take an integrated approach to the management of flooding and places a number of roles and responsibilities on local authorities, such as the County Council, under the role of Lead Local Flood Authority.

Flood Hazard Map: A map that defines flood risk areas and shows: the likely extent (including water level or depth) of possible floods; the likely direction and speed of flow of possible floods; and whether the probability of each possible flood occurring is low, medium or high (in the opinion of the person preparing the map).

Flood Resilience: Actions taken which allow the ingress of flood water through a property but enable swift recovery after the flood event. Flood resilience measures may include (among others) flood-resistant construction materials, raised electricity sockets and water-resistant flooring.

Flood Resistance: Actions taken to prevent to ingress of flood water to a property. Flood Resistance measures may include flood barriers placed over doorways.

Flood Risk: Flood risk is a combination of two components: the chance (or probability) of a particular flood event occurring and the impact (or consequence) that the event would cause if it took place.

Flood Risk Map: A map showing: the number of people living in the area who are likely to be affected in the event of flooding; the type of economic activity likely to be affected in the event of flooding; any industrial activities in the area that may increase the risk of pollution in the event of flooding; any relevant protected areas that may be affected in the event of flooding; any areas of water subject to specified measures or protection for the purpose of maintaining the water quality that may be affected in the event of flooding; and any other effect on human health, economic activity or the environment (including cultural heritage).

Flood Risk Management Plans (FRMP): Flood Risk Management Plans (FRMPs) highlight the hazards and risks of flooding from rivers, the sea, surface water, groundwater and reservoirs, and set out how Risk Management Authorities (RMAs) work together with communities to manage flood risk. By law Environment Agency (EA) must produce flood risk management plans (FRMPs) for each River Basin District.
Flood Risk Management Authorities have a range of roles and responsibilities relating to flood risk management. These authorities include:
(a) the Environment Agency,
(b) a lead local flood authority,
(c) a district council for an area for which there is no unitary authority,
(d) an internal drainage board,
(e) a water company, and
(f) a highway authority.

The Flood Risk Regulations were enacted in December 2009 to implement the requirements of the EU Floods Directive, which aims to provide a consistent approach to managing flood risk across Europe. The regulations outline the roles and responsibilities of the various authorities consistent with the Flood and Water Management Act 2010 and provide for the delivery of the outputs required by the directive. The Directive requires Member States to develop and update a series of tools for managing all sources of flood risk.

Flood Zones
Nationally consistent delineation of ‘high’ and ‘medium’ flood risk, published on a quarterly basis by the Environment Agency

Flood Zone 1 Low Probability
Defined as an area only at risk of flooding from flood events with an Annual Exceedence Probability (AEP) of less than 0.1% (1 in 1000). The probability of flooding occurring in this area in any one year is less than 0.1%.

Flood Zone 2 Medium Probability
Defined as an area at risk of flooding from flood events with an Annual Exceedence Probability (AEP) of between 1% (1 in 100) and 0.1% (1 in 1000). The probability of flooding occurring in this area in any one year is between 1% and 0.1%.

Flood Zone 3a High probability
Defined as an area at risk of flooding from flood events with an Annual Exceedence Probability (AEP) of greater than 1% (1 in 100r). The probability of flooding occurring in this area in any one year is greater than 1%.

Flood Zone 3b Functional Floodplain
Defined as land where water has to flow or be stored in times of flood. Usually defined as areas at risk of flooding from flood events with an Annual Exceedence Probability (AEP) of greater than 5% (1 in 20) design event. The probability of flooding occurring in this area in any one year is greater than 5%.

Fluvial
The processes associated with rivers and streams and the deposits and landforms created by them.

GIS
Geographic Information System. GIS is any system which stores geographical data, such as elevations, location of buildings and extent of flood outlines.

Groundwater
Water located beneath the ground surface, either in soil pore spaces or fractures in rock.

Gully
An artificial channel serving as a gutter or drain.
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Drainage Act</td>
<td>The Land Drainage Act, enacted in December 1991, aimed to consolidate existing water legislation and outlined the duties and powers to manage land drainage for a number of bodies including internal drainage boards and local authorities.</td>
</tr>
<tr>
<td>Main River</td>
<td>All watercourses shown on the statutory main river maps held by the Environment Agency and the Department for Environment, Food and Rural Affairs. This can include any structure or for controlling or regulating the flow of water into, in or out of the channel. The Environment Agency has permissive power to carry out works of maintenance and improvement on these rivers.</td>
</tr>
<tr>
<td>Medium Term Plan</td>
<td>This Medium Term Plan shows flood and coastal management schemes which the Environment Agency Board has allocated Defra grant in aid and have been approved by the Regional Flood and Coastal Committees.</td>
</tr>
<tr>
<td>National Flood and Coastal Erosion Risk Management Strategy</td>
<td>The Environment Agency's National Strategy was published in May 2011 and provides an overview of how flood risk and the risk of coastal erosion will be managed across England. The aims and objectives of the National Strategy have been translated onto a local scale through this Local Strategy for the County Council.</td>
</tr>
<tr>
<td>National Planning Policy Framework (NPPF)</td>
<td>Sets out the Government's planning policies for England and how these are expected to be applied. It sets out the Government's requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.</td>
</tr>
<tr>
<td>National Planning Practice Guidance (NPPG)</td>
<td>On 6 March 2014 the Department for Communities and Local Government launched a planning practice guidance web-based resource. Planning practice guidance is available in one place rather than previously only published in separate documents. Links between the National Planning Policy Framework and relevant planning practice guidance are simple, as well as between different categories of guidance. The Planning Practice Guidance is updated regularly as required.</td>
</tr>
<tr>
<td>Ordinary Watercourse</td>
<td>Any section of watercourse not designated as a main river.</td>
</tr>
<tr>
<td>Pitt Review</td>
<td>Sir Michael Pitt carried out an independent review of the 2007 floods and made a number of recommendations for future flood risk management. In particular, he recommended that local authorities should play a more significant role in tackling local problems of flooding and coordinating all relevant agencies. Many of the recommendations of The Pitt Review have been enacted through the Flood and Water Management Act.</td>
</tr>
<tr>
<td>Pluvial</td>
<td>Direct runoff as a result of rainfall and the processes associated with it.</td>
</tr>
<tr>
<td>Precipitation</td>
<td>Describes rain, sleet, hail, snow and other forms of water falling from the sky.</td>
</tr>
</tbody>
</table>
The Preliminary Flood Risk Assessment (PFRA) is a process involving an assessment of past floods and the possible harmful consequences of future floods, leading to the identification of Areas of Significant Risk. All LLFAs must prepare a PFRA report in relation to flooding in the LLFA's area. The LLFA is not required to include information about flooding from the sea, main rivers and reservoirs unless the authority thinks that it may affect flooding from another source. The floods to be included are those which had significant harmful consequences for human health, economic activity or the environment (including cultural heritage), or which would have significant harmful consequences for those matters if they were to occur now. The report may ignore past floods of a kind that are not likely to occur now.

The roads within Northamptonshire have been prioritised for the purposes of gritting. Trunk/major roads (including M1, A14, A45, A5) are gritted by the Highways England. Other A roads together with certain B roads and other roads are called the Precautionary Network (P1). The Adverse Network (P2) covers certain links to villages not on the precautionary network as well as certain bus routes and industrial estates.

RFCCs were set up under the Floods and Water Management Act 2010. The committees have a chair appointed by the Minister, members from Lead Local Flood Authorities (allowing for local democratic input) and independent members recruited by the Environment Agency who have specialist skills or backgrounds. RFCCs play an important local role in guiding flood and coastal risk management activities within catchments and along the coast, advising on and approving programmes of work for their areas as well as raising local levies to fund local priority projects and works in partnership with others.

Artificial lake used to store water. Reservoirs may be created in river valleys by the construction of a dam or may be built by excavation in the ground or by conventional construction techniques such a brickwork or cast concrete. Reservoirs greater than 25,000m³ are governed by the Reservoirs Act.

The risk which remains after all risk avoidance, reduction and mitigation measures have been implemented.

The probability of a flood of a given magnitude occurring within any one year e.g. a 1% (1 in 100) Annual Exceedence Probability (AEP) flood event has a 1% probability of occurring once in any one year.

All landowners whose property is adjoining to a body of water have the right to make reasonable use of it and the responsibility to suitably maintain it.
River Basin Management Plans (RBMP)

River Basin Management Plans have been produced by the Environment Agency for the eleven river basin districts in England and Wales and are the central tool setting out the objectives and actions required to achieve the objectives of the Water Framework Directive. RBMPs describe the main issues for each river basin district and state the environmental objectives for the basin, explain the objectives selected to achieve good ecological status and summarise the actions needed to deliver those objectives. A River Basin District is: a river basin, or several river basins, and the river basin’s adjacent coastal waters.

Sequential Test

Informed by a SFRA, a planning authority applies the Sequential Test to demonstrate that there are no reasonably available sites in areas with less risk of flooding that would be appropriate to the type of development or land use proposed.

Sewer

A sewer is a pipe which carries and removes either rainwater (surface) or foul water (or a combination of both) from more than one property. A sewer can also be categorised as being a private or public sewer and can carry surface or foul water.

- A Private Sewer is solely the responsibility of the occupiers/owners of the properties that it serves.
- A Public Sewer is a sewer that has been adopted and maintained by a Sewerage Undertaker.

Sewer flooding

The consequence of sewer systems exceeding their capacity during a rainfall event. Sewer flooding can also occur due to structural or operational issues.

Strategic Flood Risk Assessment (SFRA)

An SFRA is used as a tool by a planning authority to assess flood risk for spatial planning, producing development briefs, setting constraints, informing sustainability appraisals and identifying locations of emergency planning measures and requirements for flood risk assessments. The purpose of a SFRA is to assess and map all forms of flood risk from groundwater, surface water, impounded water bodies, sewer and river sources, taking into account future climate change predictions, to allow planning authorities to use this as an evidence base to locate future development primarily in low flood risk areas. The outputs from an SFRA also assist in the production of sustainable policies for the long-term management of flood risk.

SuDS

Sustainable Drainage Systems. SuDS are drainage systems which are designed to reduce the impact of urbanisation on the hydrology of a river system.

Surface Runoff

Rainwater (including snow and other precipitation) which: is on the surface of the ground (whether or not it is moving); and has not entered a watercourse, drainage system or public sewer. Areas that suffer a depth of greater than 0.1m are considered to be at risk of surface water flooding. Flooding that is greater than 0.3m deep is classed as being at risk of deep surface water flooding.
Surface Water Management Plans (SWMP)

Surface Water Management Plans are produced by local authorities and are described as a framework through which key local partners with a responsibility for surface water and drainage in their area work together to understand the causes of surface water flooding and agree the most cost effective way of managing that risk. The purpose is to make sustainable surface water management decisions that are evidence based, risk based, future proofed and inclusive of stakeholder views. A SWMP should establish a long-term action plan to manage surface water in an area and should influence future capital investment, drainage maintenance, public engagement and understanding, land-use planning, emergency planning and future developments. The following benefits are achieved through undertaking a SWMP study:

- Increased understanding of the causes, probability and consequences of surface water flooding;
- Increased understanding of where surface water flooding will occur which can be used to inform spatial and emergency planning functions;
- A co-ordinated action plan, agreed by all partners and supported by an understanding of the costs and benefits, which partners will use to work together to identify measures to mitigate surface water flooding;
- Identifying opportunities where SuDS can play a more significant role in managing surface water flood risk;
- Increased awareness of the duties and responsibilities for managing flood risk of different partners and stakeholders;
- Improved public engagement and understanding of surface water flooding;
- Significant contribution made towards meeting the requirements of the Flood Risk Regulations (2009) and Flood and Water Management Act (2010).

The Water Framework Directive

The Water Framework Directive was introduced in December 2000 and became UK law in December 2003. The directive focuses on improving the ecology of our water ecosystems and aims to protect and enhance the quality of surface water, groundwater, estuaries and coastal waters. The Environment Agency are the lead authority responsible for the delivery of these targets, but must work closely with lead local flood authorities, such as the County Council, to ensure that targets are achieved.
### APPENDIX 2: ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning / Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEP</td>
<td>Annual Exceedence Probability</td>
</tr>
<tr>
<td>ABI</td>
<td>Association of British Insurers</td>
</tr>
<tr>
<td>AWS</td>
<td>Anglian Water Services</td>
</tr>
<tr>
<td>BAP</td>
<td>Biodiversity Action Plan</td>
</tr>
<tr>
<td>BCW</td>
<td>Borough Council of Wellingborough</td>
</tr>
<tr>
<td>BGS</td>
<td>British Geological Society</td>
</tr>
<tr>
<td>CBC</td>
<td>Corby Borough Council</td>
</tr>
<tr>
<td>CFMP</td>
<td>Catchment Flood Management Plan</td>
</tr>
<tr>
<td>DDC</td>
<td>Daventry District Council</td>
</tr>
<tr>
<td>Defra</td>
<td>The Department for Food and Rural Affairs</td>
</tr>
<tr>
<td>EA</td>
<td>Environment Agency</td>
</tr>
<tr>
<td>ENC</td>
<td>East Northamptonshire Council</td>
</tr>
<tr>
<td>F&amp;WMA</td>
<td>Flood and Water Management Act 2010</td>
</tr>
<tr>
<td>FCERM</td>
<td>Flood and Coastal Erosion Risk Management</td>
</tr>
<tr>
<td>FRM</td>
<td>Flood Risk Management</td>
</tr>
<tr>
<td>FRMP</td>
<td>Flood Risk Management Plan</td>
</tr>
<tr>
<td>FMfSW</td>
<td>Flood Map for Surface Water</td>
</tr>
<tr>
<td>FRA</td>
<td>Flood Risk Assessment</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographical Information System</td>
</tr>
<tr>
<td>IDB</td>
<td>Internal Drainage Board</td>
</tr>
<tr>
<td>JCS</td>
<td>Joint Core Strategy</td>
</tr>
<tr>
<td>KBC</td>
<td>Kettering Borough Council</td>
</tr>
<tr>
<td>LDF</td>
<td>Local Development Framework</td>
</tr>
<tr>
<td>LLFA</td>
<td>Lead Local Flood Authority</td>
</tr>
<tr>
<td>LPA</td>
<td>Local Planning Authority</td>
</tr>
<tr>
<td>LRF</td>
<td>Local Resilience Forum</td>
</tr>
<tr>
<td>MAFP</td>
<td>Multi Agency Flood Plan</td>
</tr>
<tr>
<td>MCA</td>
<td>Multiple Criteria Analysis</td>
</tr>
<tr>
<td>NBC</td>
<td>Northampton Borough Council</td>
</tr>
<tr>
<td>NCC</td>
<td>Northamptonshire County Council</td>
</tr>
<tr>
<td>NIA</td>
<td>Nature Improvement Area</td>
</tr>
<tr>
<td>NN JPU</td>
<td>North Northamptonshire Joint Planning Unit</td>
</tr>
<tr>
<td>NPPF</td>
<td>National Planning Policy Framework</td>
</tr>
<tr>
<td>PFRA</td>
<td>Preliminary Flood Risk Assessment</td>
</tr>
<tr>
<td>RBMP</td>
<td>River Basin Management Plan</td>
</tr>
<tr>
<td>RFCC</td>
<td>Regional Flood and Coastal Committee</td>
</tr>
<tr>
<td>SAB</td>
<td>SuDS Approval Body</td>
</tr>
<tr>
<td>SEA</td>
<td>Strategic Environmental Assessment</td>
</tr>
<tr>
<td>SFRA</td>
<td>Strategic Flood Risk Assessment</td>
</tr>
<tr>
<td>SNC</td>
<td>South Northamptonshire Council</td>
</tr>
<tr>
<td>SoP</td>
<td>Standard of Protection</td>
</tr>
<tr>
<td>SuDS</td>
<td>Sustainable Drainage Systems</td>
</tr>
<tr>
<td>SUE</td>
<td>Sustainable Urban Extension</td>
</tr>
<tr>
<td>SWMP</td>
<td>Surface Water Management Plan</td>
</tr>
<tr>
<td>WFD</td>
<td>Water Framework Directive</td>
</tr>
<tr>
<td>WCS</td>
<td>Water Cycle Study or Strategy</td>
</tr>
</tbody>
</table>
APPENDIX 3: MAPS

Map A 1: Water Company Boundaries

Legend
- NCC boundary
- Anglian Water Services
- Severn Trent Water
- Thames Water

NCC Local Flood Risk Management Strategy
Water Companies within Northamptonshire

Map A1

Drawn: RAL, Checked: JRB, Date: 12/02/2016.
© Crown copyright. All rights reserved.
Northamptonshire County Council. Licence No. 100019331.
Map A 2: Internal Drainage Board Boundary
Map A 3: District and Borough Boundaries
Map A 4: Ground Water Flood Risk
Map A 5: Risk of Flooding from Surface Water

Note: This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use at an individual property scale due to the method used.

Legend:
- NCC Boundary
- District/Borough Boundaries
- High - Greater than or equal to 1 in 30 chance in any given year
- Medium - Less than 1 in 20 but greater than or equal to 1 in 100 chance in any given year
- Low - Less than 1 in 1000 chance in any given year
Map A 7: Flood Map for Planning (Rivers and Sea)
Map A 8: Existing Biodiversity Action Plan Habitats

Northamptonshire Local Flood Risk Management Strategy (LFRMS) (November 2016) 78
Map A 9: Water Framework Directive Water Quality

NCC Local Flood Risk Management Strategy
Water Framework Directive Water Quality Status
Map A9

Legend
- NCC boundary
- WFD Current Ecological Status:
  - Bad
  - Poor
  - Moderate
  - Good
  - High

Drawn: TCM. Checked: JRB. Date: 16/02/2016
APPENDIX 4: FLOOD AND WATER RELATED STUDIES AND STRATEGIES

Northamptonshire-wide Related Work

- Northamptonshire Multi-Agency Flood Plan – procedures relating to support the multi-agency response to and recover from flooding. August 2011.
- Nene Flood Storage Study – reviews opportunities for additional flood storage areas within the River Nene catchment. August 2011.

North Northamptonshire Related Work

• North Northamptonshire Detailed Water Cycle Strategy - 2009
• http://www.nnjpu.org.uk/docs/WUNNHW_Tech003_rev2.0%20(Section%203%20-%20Water%20Resources).doc

West Northamptonshire Related Work
• Northampton Surface Water Management Plan – Expected completion end 2016

Flood Risk Management Plans

Catchment Flood Management Plans
• Thames Catchment Flood Management Plan (December 2009)
• Great Ouse Catchment Flood Management Plan Summary Report – (January 2011)
• River Welland Catchment Flood Management Plan Summary Report (December 2009)
• Severn Catchment Flood Management Plan Summary Report (December 2009)

River Basin Management Plans
• River Basin Management Plan: Anglian River Basin District (December 2009)
• River Basin Management Plan: Severn River Basin District (December 2009)
• River Basin Management Plan: Thames River Basin District (December 2009)

National
APPENDIX 5: LEGISLATIVE CONTEXT

Flood and Water Management Act 2010

The Flood and Water Management Act received Royal Assent in April 2010. It revises, modernises and consolidates significant elements of existing legislation covering flooding, land drainage, coastal erosion and reservoir safety. It also strengthens and extends existing flood and water legislation including implementing appropriate recommendations from the Pitt Review into the floods of 2007.

The key provisions of the Flood and Water Management Act 2010 include:

- Statutory responsibilities for managing flood risk – There are national strategies and guidance on managing flood risk in England and Wales. Unitary and county councils bring together the relevant bodies to develop local strategies for managing local flood risk;
- Protection of assets which help manage flood risk – The Environment Agency, local authorities and internal drainage boards are able to ensure that private assets which help manage the risks of floods cannot be altered without consent;
- Sustainable drainage – drainage systems for all new developments will need to be in line with the National Standards to help manage and reduce the flow of surface water;
- Powers to carry out environmental works – the Environment Agency, local authorities and internal drainage boards are able to manage water levels to deliver leisure, habitat and other environmental benefits;
- Reservoir safety – the public will be protected by a new risk-based regime for reservoir safety. It will reduce the burden on regulated reservoirs where people are not at risk, but introduce regulation for some potentially higher-risk reservoirs currently outside of the system;
- Transfer of private sewers – on 1st October 2011, water and sewerage companies in England and Wales became responsible for private sewers, which were previously the responsibility of property owners. Not all private sewers and lateral drains were included, for example property owners remain responsible for the sections of pipe between their property and the transferred private sewer or lateral drain. No new private sewers will be created after the completion of the private sewer transfer.
- New sewer standards – all sewers will be built to agreed standards in future so that they are adopted and maintained by the relevant sewerage company;
- Water company charges – protection can be offered against unaffordable charges for surface water drainage for community groups such as churches. Social tariffs can be provided for those who would otherwise face difficulty meeting their bills;
- Protection of water supplies – wider powers have been provided for water companies to control non-essential domestic uses of water in times of drought;
- Other protection for water company customers – new powers have been provided to reduce the level of debt, new arrangements are in place for managing very risky infrastructure projects which could be a threat to the ability of the water company to provide its services, and updated arrangements have been provided for administration of water companies should they get into difficulties.

The Flood and Water Management Act 2010 (the Act) creates clearer roles and responsibilities, which include the role of ‘Lead Local Flood Authority’ (LLFA) for county councils and unitary authorities in managing local flood risk (from surface water, ground water and ordinary watercourses) and a strategic overview role for all flood risk for the Environment Agency, which retains responsibility for main river (fluvial) flooding.

The Act requires the Environment Agency to ‘develop, maintain, apply and monitor a strategy for flood and coastal erosion risk management in England’. The Environment Agency’s National Flood and Coastal Erosion Risk Management Strategy was published in September 2011. The strategy describes at a high level what needs to be done by all organisations involved in flood and coastal erosion risk management. These include local authorities, internal drainage boards, water and sewerage companies, highways authorities, and the Environment Agency.
The National strategy sets out a statutory framework to help communities, the public sector and other organisations to work together to manage flood and coastal erosion risk. It supports local decision-making and engagement in flood risk management, making sure that risks are managed in a co-ordinated way across catchments. This includes the development of local flood risk management strategies by LLFAs, as well as the Environment Agency’s strategic overview of all sources of flooding and coastal erosion.

In carrying out its role as the LLFA, the Council’s key duties and responsibilities, once all elements of the Flood and Water Management Act (2010) have been enacted will include:

- To develop, maintain and apply in consultation with key stakeholders a Local Flood Risk Management Strategy for Northamptonshire (this document), which should include risks from surface water run-off, groundwater and ordinary watercourses i.e. those watercourses which do not fall under the of the Environment Agency;
- To establish local management and governance arrangements with other key stakeholders to ensure delivery of effective joined up management of flood risk;
- To fulfil the requirements of the EU Floods Directive in relation to sources of flood risk by completing preliminary flood risk assessments, the identification of Flood Risk Areas and preparing Surface Water Management Plans for areas of greatest risk;
- To approve, adopt and maintain Sustainable Drainage Systems (SuDS) that meet national standards for development (unlikely to be commenced);
- To establish and maintain a register of flood risk management assets with a record of each structure, together with details of ownership and state of repair, where known, and where appropriate designate such structures/features which may affect flood risk so they cannot be altered without consent. Assets can be designated by the LLFA and the Environment Agency;
- To investigate flooding incidents to understand their cause and ensure that appropriate agencies play their role in the effective management of flooding incidents and recovery;
- A power to undertake works to manage flood risk from surface water run-off, groundwater and ordinary water courses; and
- To plan for the emergency management of flooding as a key partner of the Local Resilience Forum (LRF).

**Flood Risk Regulations 2009**

The Flood Risk Regulations (2009) incorporate the requirements of the European Floods Directive into national law in England and Wales. As with most European Union law, the Directive was written for the benefit of many different countries. The Flood Risk Regulations are concerned with identifying and taking action in relation to areas with the most significant flood risks across the country. The first stage of implementing the Flood Risk Regulations, the Preliminary Flood Risk Assessment, was undertaken by the Council in June 2011 and has supported the preparation of this strategy.

The Regulations:

- Give responsibility to the Environment Agency to prepare Preliminary Flood Risk Assessments, flood risk maps, hazard maps and flood risk management plans for flood risk from the sea, main rivers and reservoirs;
- Give responsibility to LLFAs to do the same for all other forms of flooding (excluding sewer flooding), including surface runoff, groundwater and ordinary watercourses; and
- Require areas of nationally significant risk to be identified, and flood risk maps, hazard maps and management plans to be produced for those areas.

The Environment Agency supplied the core national datasets to undertake this work and guidance was provided on how to identify areas of nationally significant flood risk affecting more than 30,000 people in a 5km² area.

All of the documents under the Regulations are to be reviewed and if necessary updated every 6 years.

The Preliminary Flood Risk Assessment has shown that no areas in Northamptonshire meet the significant flood risk criteria as set out by the Flood Risk Regulations 2009. The National...
review confirmed that the assessment was compliant with the requirements of the Flood Risk Regulations and comprehensively covered the additional more discretionary aspects of the Environment Agency’s guidance.

Flood Risk Management Plans (FRMPs) explain the risk of flooding from rivers, the sea, surface water, groundwater and reservoirs. FRMPs set out how risk management authorities will manage flood and coastal erosion risk over the next 6 years.

Each EU member country must produce FRMPs as set out in the EU Floods Directive 2007. Each FRMP covers a specific river basin district. There are 11 river basin districts in England and Wales, as defined in the legislation. A river basin district is an area of land covering one or more river catchments. A river catchment is the area of land from which rainfall drains to a specific river. The FRMP of most relevance to Northamptonshire is the Anglian river basin district flood risk management plan, which was published in March 2016.

Each river basin district also has a River Basin Management Plan, which looks at how to protect and improve water quality and ecology, and use water in a sustainable way. FRMPs and river basin management plans work to a 6-year planning cycle. The current cycle is from 2015 to 2021. The Environment Agency has developed the Anglian FRMP alongside the Anglian river basin management plan.

Both flood risk management and river basin planning form an important part of a collaborative and integrated approach to catchment planning for water. Building on this essential work, and in the context of the Government’s 25-year environment plan.

As the Northamptonshire LF RMS was published in advance of the publication of the FRMPs, the information from the strategy has been used to inform the FRMP. In particular the entire NCC strategy action plan has been incorporated into the FRMP and this ensures consistency between the two documents.

FRMPs set out how risk management authorities and communities will work together to reduce the potential adverse consequences of flooding. The Environment Agency working in partnership with LLFAs and other risk management authorities to develop these plans at a catchment scale by pooling information from various existing plans such as Catchment Flood Management Plans and Reservoir Plans. The Environment Agency is working with LLFAs to pool information from LFRM Strategies and this information on local flood risk management will be set within the context of the broader catchment plan.

As part of the Environment Agency's strategic overview of all sources of flood risk, they have created a single surface water flood map for all of England and Wales. This will benefit all LLFAs by allowing them to focus on managing surface water flood risk, and will enable the public to better understand how the risk of surface water flooding may affect them.

**The Pitt Review 2007**

Following the 2007 severe flood events an independent review of the flood-related emergencies that occurred was undertaken by Sir Michael Pitt on behalf of the Government. The final published report entitled “Learning Lessons from the 2007 Floods” called for urgent and fundamental changes in the way the country was adapting to the likelihood of more frequent and intense periods of heavy rainfall.

The report included 92 recommendations, of which 21 specifically referred to local authorities. Of particular importance was the recommendation that local authorities should play a major role in the management of local flood risk, taking the lead in tackling local problems of flooding and co-ordinating all relevant agencies. The Act puts in place the recommendations by Sir Michael Pitt.

**Other Key Pieces of Legislation and Guidance**

The National Planning Policy Framework (March 2012 ) outlines the core planning principles taking flood risk management into consideration and highlights the need for the effective planning for flood risk infrastructure. The framework emphasises that flood risk should be included in the environmental assessment of development and that pre-application engagement and front-loading is essential for developers to understand what is required of them in relation to flood risk assessment, mitigation and water management. The framework also includes objectives to minimise the vulnerability to climate change and to manage the
risk of flooding. The Technical Guidance to the Framework provides additional advice to local planning authorities to ensure the effective implementation of planning policy on development in areas at risk of flooding.

The Localism Act (2011) requires LLFAs to make arrangements for overview and scrutiny committees to review and scrutinise risk management authorities. Risk management authorities are now under a duty to comply with a request made by an overview and scrutiny committee for information or a response to a report in relation to its flood or coastal erosion risk management functions.

Local authorities, the Environment Agency and other prescribed bodies are obliged to work together on certain strategic matters under the 'duty to cooperate' in the Localism Act in England. In particular, these organisations should cooperate across boundaries because flood risk often requires wider than local consideration.

The Government published the Water White Paper in 2011 to highlight that water is essential for economic growth and that the environment should be protected for future generations. It also:

- Outlines plans to modernise the rules which govern how we take water from our rivers;
- Explains how we will improve the condition of our rivers by encouraging local organisations to improve water quality and make sure we are extracting water from our environment in the least harmful way;
- Announces plans to reform the water industry and deregulate water markets to drive economic growth; and
- Enables business and public sector customers to negotiate better services from suppliers and cut their costs.

The Climate Change Act (2008) requires a UK-wide climate change risk assessment every five years, accompanied by a national adaptation programme that is also reviewed every five years. The Act has given the Government powers to require public bodies and statutory organisations such as water companies to report on how they are adapting to climate change.

Making Space for Water (July 2004) states that the Government will, over the 20-year lifetime of the strategy, implement a more holistic approach to managing flood and coastal erosion risks in England. The approach involves taking account of all sources of flooding, embedding flood and coastal risk management across a range of Government policies. The aim is to manage risks by employing integrated approaches which reflect both national and local priorities, so as to reduce the threat to people and their property and deliver the greatest environmental, social and economic benefit, consistent with the Government's sustainable development principles.

The Civil Contingencies Act (2004) aims to deliver a single framework for civil protection in the UK and sets out the actions that need to be taken in the event of a flood. The Act is separated into two substantive parts: local arrangements for civil protection (Part 1) and emergency powers (Part 2).

Responsibilities under part 1 of the Civil Contingencies Act include:

- Undertake risk assessments;
- Develop Emergency Plans;
- Develop Business Continuity Plans;
- Arrange to make information available to the public about civil protection matters and maintain arrangements to warn, inform and advise the public in the event of an emergency;
- Share information with other local responders to enable greater co-ordination;
- Co-operate with other local responders to enhance co-ordination and efficiency; and
- Provide advice and assistance to businesses and voluntary organisations about business continuity management.

The Strategic Environmental Assessment (SEA) Directive (2001) (EC Directive 2001/42/EC) is legislation which aims to increase the consideration of environmental issues during decision making related to strategic documents. The SEA identifies any significant
environmental effects that are likely to result due to the implementation of a plan, programme or strategy.

The Water Framework Directive (2000) (WFD) is the most substantial piece of EC water legislation to date and is designed to improve and integrate the way water bodies are managed throughout Europe. It came into force on 22 December 2000 and was transposed into UK law in 2003. Member States must aim to reach “good” chemical and ecological status in inland and coastal waters by 2015. It is designed to:

- Prevent deterioration of aquatic ecosystems, protect them and improve the ecological condition of waters;
- Aim to achieve at least good status for all waters. Where this is not possible, good status should be achieved by 2021 or 2027;
- Promote sustainable use of water as a natural resource;
- Conserve habitats and species that depend directly on water;
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants, and;
- Contribute to mitigating the effects of floods and droughts.

To address this, the Environment Agency is the coordinating authority and has produced river basin management plans to develop new and better ways of protecting and improving the water environment.

The Land Drainage Act (1991) outlines the duties and powers to manage land drainage for a number of bodies including the Environment Agency, Internal Drainage Boards, local authorities, navigation authorities and riparian owners. The Act has updated many parts of this legislation.

The powers and duties under this act can be summarised as:

- Duty on drainage board to exercise a general supervision over all matters relating to drainage of land;
- A general duty to the environment when exercising powers;
- Powers to maintain, improve and build new works required for drainage;
- Consenting and enforcement powers for ordinary watercourses and main rivers;
- Powers to make byelaws; and
- General powers of entry onto land for water level management so that statutory authorities can exercise flood risk management for the common good.
- The Natural Environment and Rural Communities Act (2006) makes local authorities and other public bodies statutorily obliged to take biodiversity into account when undertaking their functions.
APPENDIX 6: RIVER BASIN MANAGEMENT PLANS, WATER FRAMEWORK DIRECTIVE AND CATCHMENT FLOOD MANAGEMENT PLANS


Flood Risk Management activities are, like any other activities, subject to European Directives. The Water Framework Directive (WFD) requires local flood risk management strategies to take account of River Basin Management Plans (RBMPs). RBMPs are plans for protecting and improving the water environment and have been developed in consultation with organisations and individuals. They contain the main issues for the water environment and the actions we all need to take to address them. Northamptonshire is covered by three river basin districts, namely Anglian, Severn and Thames.

‘Flood protection’ is recognised in the WFD as one of the activities that may mean that the default target of ‘Good Ecological Status’ (GES) may not be achieved. The legacy of human intervention can often be great so that the necessary actions to achieve GES would be technically unfeasible or disproportionately costly to deliver.

An initial assessment has been undertaken at a strategic level to test the compliance of the Northamptonshire Local Flood Risk Management Strategy (LFRMS) with the requirements of the directive to ensure that the measure proposed do not cause deterioration to water bodies or prevent future improvements.

New schemes that affect the water environment may impact the biological, hydromorphological, physio-chemical and/or chemical quality elements of a watercourse. Any of these impacts could lead to deterioration and/or improvements to water bodies; therefore a preliminary assessment is required which should have regard to all of these matters. The Local Planning Authority as decision maker on these planning applications will likely secure via a condition(s) any measures identified that are required to achieve WFD requirements.

When the Project Appraisal for flood risk management projects, schemes and initiatives are undertaken, they will be expected to take account of the WFD, as all schemes, projects and measures will be subject to tests for WFD compliance at design stage and will need to demonstrate that proposals meet with the requirements of the Directive.

Water Framework Directive and the Local Flood Risk Management Strategy

The fundamental objective of the LFRMS, which relates to WFD is Objective 3 to:

‘Adopt a sustainable approach to reducing local flood risk, seeking to lessen the risk of localised flooding using mechanisms that are economically viable, deliver wider environmental benefits (water quality, climate change adaptation, habitat creation etc.) and promote the social wellbeing of local people’.

The LFRMS sets out long-term policy aims for sustainable flood risk management and considers the need to work with nature, as far as possible, and contribute to environmental improvement. Moreover, as the County Council progresses with the implementation of the action plan, the delivery of measures, which actively contribute to achieving the overall aims of the WFD, can be ensured.

Table A 1 Water Framework Directive Compliance check

<table>
<thead>
<tr>
<th>Article</th>
<th>Explanation</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1.a(i)</td>
<td>This article requires implementation of necessary measures to prevent deterioration of status of all surface water bodies.</td>
<td>The LFRMS presents policies for the long-term management of flood risk and operates at a strategic level. Prior to physical flood alleviation works being undertaken to implement the LFRMS objectives, further assessment and appraisal will consider the implication of achieving GES and on preventing deterioration. The objectives within the LFRMS need to be considered against the National Strategy objectives. Presence of flood defences, or other flood risk</td>
</tr>
<tr>
<td>4.1.a(ii)</td>
<td>This article requires protection, enhancement and restoration of all surface water bodies, other artificial and heavily modified water bodies with the aim of achieving good ecological status.</td>
<td></td>
</tr>
</tbody>
</table>

Northamptonshire Local Flood Risk Management Strategy (LFRMS) (November 2016) 88
<table>
<thead>
<tr>
<th>Article</th>
<th>Explanation</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1.a(iii)</td>
<td>This article requires protection and enhancement of artificial and heavily modified water bodies with aim of achieving good ecological potential (GEP) and good surface water status.</td>
<td>management activities, may result in continued or increased deterioration in ecological status, or the modification of water bodies. Conversely, flood risk management activities may result in the protection, enhancement and restoration of the ecological status of water bodies through, for example, enabling greater floodplain connectivity, reducing detrimental erosion and sedimentation, and reducing polluted run-off from land. These considerations will need to be reviewed and evaluated at design stage of specific schemes as actions are progressed or implemented.</td>
</tr>
<tr>
<td>4.1a(iv)</td>
<td>This article requires the implementation of measures to reduce pollution from priority substances and ceasing or phasing out emissions, discharges and losses of priority hazardous substances. FRM works should not compromise delivery of these.</td>
<td>Presence of flood defences may exacerbate erosion resulting from increases in flow and if eroded sediments contain any priority or hazardous substances, this could affect the ability to meet the requirements of the WFD. This will need to be reviewed as and when the LFRMS actions are progressed. The impact of potential individual schemes on erosion, and the possible consequences, will need to be reviewed on a case-by-case basis. Specific measures to reduce the risk of pollution, such as reducing misconnections of foul to surface water sewers and working with businesses to limit accidental spillages of pollutants, are being undertaken by partners including the Environment Agency and water companies, and are beyond the remit of the LFRMS.</td>
</tr>
<tr>
<td>4.1.b(i)</td>
<td>This article requires the implementation of measures to prevent or limit inputs of pollutants to groundwater, and to prevent the deterioration of status of groundwater bodies. FRM works should not compromise delivery of these.</td>
<td>The LFRMS will consider groundwater flooding. These impacts will routinely be assessed on a case-by-case basis. Specific measures to reduce the risk of pollution to groundwater are beyond the remit of the LFRMS. Land management methods such as Catchment Sensitive Farming, which reduce the risk of pollution of groundwater, are being promoted by the LFRMS.</td>
</tr>
<tr>
<td>4.1(c) and 4.2</td>
<td>Protected areas shall achieve compliance with the WFD objectives by 2015, unless otherwise specified in other legislation such as Habitats and Birds Directives.</td>
<td>For areas designated under the Habitats and Birds Directives, the LFRMS has satisfied the tests through habitats regulations assessment. Any future works will be subject to more detailed assessment.</td>
</tr>
<tr>
<td>Article</td>
<td>Explanation</td>
<td>Evidence</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td>4.4</td>
<td>This article allows for an extension of deadlines to achieve objectives, subject to conditions (relating to technical feasibility, cost and natural conditions).</td>
<td>The LFRMS could help deliver WFD requirements through ongoing implementation of good practice in construction and maintenance activities. Any future works will be subject to more detailed assessment and appraisal. The implementation of the LFRMS is sufficiently flexible to adapt to different scenarios.</td>
</tr>
<tr>
<td>4.5</td>
<td>This article allows for water bodies to be set less stringent environmental objectives where human activity requires it for reasons relating to technical feasibility and cost. There are conditions and a requirement to ensure that the benefits brought by the human activity cannot be achieved by any other means that are not disproportionately costly.</td>
<td>The LFRMS itself will not increase the risk as it is not leading to major increases in morphological pressure and neither is it compromising delivery of expected mitigation measures, which may be used to define GES. Any further works emanating from the LFRMS will be subject to more detailed assessment and appraisal, at which time the technical feasibility and cost of those proposals will be considered, alongside the need to achieve the environmental objectives set in the River Basin Management Plans (RBMPs).</td>
</tr>
<tr>
<td>4.6</td>
<td>Temporary deterioration in the status of water bodies shall not be a breach of requirements of the WFD. If this is the result of natural causes, which are exceptional and could not reasonably have been foreseen. Events such as extreme floods and prolonged droughts, are permitted. Conditions include the need to take practical steps to prevent further damage.</td>
<td>The effects of flooding on the environment (for example flooding of industrial premises leading to contamination of water) will be minimised where possible by the provision of warnings, and actions of emergency planning teams. The LFRMS establishes the policy intent for long term management of flood risk, which will see decreased risk in some areas and increases over time in others. As the County Council progressively prioritises resources and the need for and impact of its activities, it will actively plan to assess the environmental impact of future works. Emergency works may be required after an extreme flood event and where feasible, will have regard to WFD objectives.</td>
</tr>
</tbody>
</table>
4.7 | Failure to achieve GES is not a breach of the WFD if it is the result of new modifications to physical characteristics of the water body and the following conditions are met: All practical mitigation is undertaken. There is overriding public interest and/or the benefits for human health or safety or for sustainable human development outweigh the benefits to the environment and society of achieving WFD objectives. The beneficial objectives served by the modifications – in this case flood risk management – cannot for reasons of technical feasibility or disproportionate cost be achieved in a more environmentally sensitive way. | The LFRMS presents policies for the long-term management of flood risk and operates at strategic level. Prior to physical works being undertaken to implement the LFRMS objectives, further assessment and appraisal will consider the implication on achieving GES. Individual schemes could affect the physicochemical and hydromorphological status of a water body. This will need to be assessed on a case-by-case basis as and when further details of schemes are developed and appraised. The appraisal techniques used will be sufficiently robust to ensure the human health and societal benefits in providing flood risk management are balanced with the impacts on the environment, and that alternative approaches are also considered. The LFRMS is sufficiently flexible to adapt to future requirements. |

The examination of the LFRMS suggests that the plan is compliant with the requirements of the Directive and actively highlights opportunities for improvements to meet WFD objectives and improve ecological status. It highlights the need for further examination at future stages of site-specific scheme/project development and appraisal, which should be addressed by good practice in detailed appraisal. The LFRMS provides a sufficiently flexible approach to ensure that this is achieved.

**Catchment Flood Management Plans**

The Environment Agency developed Catchment Flood Management Plans (CFMPs) across the country within each main river catchment, with the aim of taking a broad view of flood risk at catchment level over the next 100 years. CFMPs help the Environment Agency to understand the scale and extent of flooding now and in the future and set policies for managing flood risk within the catchment. CFMPs are used to inform planning and decision making by key stakeholders. Factors such as climate change, future development and changes in land use and land management were taken into account in developing sustainable policies for managing flood risk in the future.

Northamptonshire is covered by four different Catchment Flood Management Plans, namely the ‘River Nene’ (64% of Northamptonshire), the ‘Great Ouse’ (14% of Northamptonshire), the ‘Thames’ (8% of Northamptonshire), the ‘River Severn’ (7% of Northamptonshire) and the ‘River Welland’ (7% of Northamptonshire).

The Environment Agency has also developed Flood risk management plans (FRMPs), which explain the risk of flooding from rivers, the sea, surface water, groundwater and reservoirs. FRMPs set out how risk management authorities will manage flood and coastal erosion risk over the next 6 years. Each FRMP covers a specific river basin district. There are 11 river basin districts in England and Wales, as defined in the legislation. The FRMP of most relevance to Northamptonshire is the Anglian river basin district flood risk management plan, which was published in March 2016.

The objectives and actions of the LFRMS have been assessed against the CFMP and FRMP policies to demonstrate compliance.

The objectives of the Anglian FRMPs are categorised into social, economic and environmental categories. This reflects the way the LFRMS has prioritised the communities in...
Northamptonshire. This assessment was based on the number of social, economic and environmental assets at risk of flooding. Therefore the methodologies used and the conclusions drawn are consistent.

The social objectives set out in the FRMP such as ‘Understanding flood risk and working in partnership’, ‘Community preparedness and resilience’, ‘Avoid inappropriate development in areas of flood and coastal erosion’ and ‘Continue river, watercourse and tidal defence maintenance’ are reflected in Objective 1 (Collaborative Approach), Objective 4 (Preparedness and Resilience) and Objective 5 (Flood Risk and Development) of the LFRMS.

The Economic objectives in the FRMP such as ‘Economic, regeneration and funding opportunities’ and ‘Understanding Flood Risk and Working in Partnership with landowners’ are reflected in Objective 6 (Economically Sustainable Approach) in the LFRMS.

The Environmental objectives of the FRMP such as ‘Contribute to achieving Water Framework Directive (WFD) objectives’, ‘Minimise the negative impacts of flooding to designated nature conservation sites’, and ‘Minimise the negative impacts of flooding to designated heritage sites’ are all supported by Objective 3 of the LFRMS.

There are 116 measures set out in the FRMPs which seek to manage flood risk across the Nene catchment and these are categorised into 4 key themes:

- Preventing risk
- Preparing for risk
- Protecting from risk
- Recovery and review of risk

These measures have been informed by the LFRMS action plan to ensure consistency between the two documents and the actions will ensure that the above objectives will be met and delivered.

Table A 2 CFMP Policy Compliance

<table>
<thead>
<tr>
<th>CFMP Policy</th>
<th>CFMP Policy Outline</th>
<th>CFMP Policy Detail</th>
<th>LFRMS Compliance with CFMP Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy 1</td>
<td>Areas of little or no flood risk where we will continue to monitor and advise</td>
<td>This policy will tend to be applied in those areas where there are very few properties at risk of flooding. It reflects a commitment to work with the natural flood processes as far as possible.</td>
<td>Under Objective 4 we will improve public awareness and understanding of flooding. We will also investigate flood incidents which occur and meet the thresholds set. Under Objective 3 we promote the use of natural methods for managing flood risk, such as tree planting and natural resilience.</td>
</tr>
<tr>
<td>Policy 2</td>
<td>Areas of low to moderate flood risk where we can generally reduce existing flood risk management actions</td>
<td>This policy will tend to be applied where the overall level of risk to people and property is low to moderate. It may no longer be value for money to focus on continuing current levels of maintenance of existing defences if the Environment Agency can use resources to reduce risk where there are more people at higher risk. The Environment Agency would therefore review the flood risk management actions being taken so that they are proportionate to the level of risk.</td>
<td>There are no areas within Northamptonshire where the LFRMS proposes to reduce existing flood risk management actions. However currently all works undertaken by the County Council are prioritised on a risk-based approach and therefore are not generally undertaken in areas where there is no risk.</td>
</tr>
<tr>
<td>CFMP Policy</td>
<td>CFMP Policy Outline</td>
<td>CFMP Policy Detail</td>
<td>LFRMS Compliance with CFMP Policy</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------</td>
<td>--------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Policy 3</td>
<td>Areas of low to moderate flood risk where we are generally managing existing flood risk effectively</td>
<td>This policy will tend to be applied where the risks are currently appropriately managed and where the risk of flooding is not expected to increase significantly in the future. However, the Environment Agency keep their approach under review, looking for improvements and responding to new challenges or information as they emerge. The Environment Agency may review their approach to managing flood defences and other flood risk management actions, to ensure that they are managing efficiently and taking the best approach to managing flood risk in the longer term.</td>
<td>The LFRMS sets out actions for improving the effectiveness of flood risk management across the County. It is not proposed to increase management where it is not required, nor is it proposed to reduce management where there is a demonstrated risk of flooding.</td>
</tr>
<tr>
<td>Policy 4</td>
<td>Areas of low, moderate or high flood risk where we are already managing the flood risk effectively but where we may need to take further actions to keep pace with climate change</td>
<td>This policy will tend to be applied where the risks are currently deemed to be appropriately-managed, but where the risk of flooding is expected to significantly rise in the future. In this case the Environment Agency would need to do more in the future to contain what would otherwise be increasing risk. Taking further action to reduce risk will require further appraisal to assess whether there are socially and environmentally sustainable, technically viable and economically justified options.</td>
<td>The associated prioritisation assessment reviewed the sensitivity of areas to the potential impacts of climate change. A number of actions are also proposed within the LFRMS to increase understanding of the flood risk and the impacts of climate change within the County. This will identify areas where further actions may be required to manage this increasing risk. Investigations into flood incidents which occur should also highlight areas where increased management is required.</td>
</tr>
<tr>
<td>Policy 5</td>
<td>Areas of moderate to high flood risk where we can generally take further action to reduce flood risk</td>
<td>This policy will tend to be applied to those areas where the case for further action to reduce flood risk is most compelling, for example where there are many people at high risk, or where changes in the environment have already increased risk. Taking further action to reduce risk will require additional appraisal to assess whether there are socially and environmentally sustainable, technically viable and economically justified options.</td>
<td>The associated prioritisation assessment has determined those areas which are considered to be at highest risk of flooding from a range of sources. In these areas, proactive actions are proposed to manage and reduce these risks where resources allow.</td>
</tr>
<tr>
<td>CFMP Policy</td>
<td>CFMP Policy Outline</td>
<td>CFMP Policy Detail</td>
<td>LFRMS Compliance with CFMP Policy</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------</td>
<td>--------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Policy 6</td>
<td>Areas of low to moderate flood risk where we will take action with others to store water or manage run-off in locations that provide overall flood risk reduction or environmental benefits</td>
<td>This policy will tend to be applied where there may be opportunities in some locations to reduce flood risk locally or more widely in a catchment by storing water or managing run-off. The policy has been applied to an area (where the potential to apply the policy exists), but would only be implemented in specific locations within the area, after more detailed appraisal and consultation.</td>
<td>A number of actions have been proposed within the LFRMS to promote the strategic management of flood risk, such as improved land management methods, strategic flood storage areas, and promotion of SuDS in development. In all work undertaken, opportunities for wider benefits, including environmental improvement, will be sought.</td>
</tr>
</tbody>
</table>

Map A 10: CFMP Policy Units
APPENDIX 7: FLOOD RISK MANAGEMENT FUNDING MECHANISMS

Funding can also be secured by businesses, individuals and communities, which is not always available to Local Authorities. The funding tool of the Flood Toolkit: http://www.floodtoolkit.com/risk/funding/, provides an overview of the type and source of funding available. The tool also provides a case study example of how the funding may have been used for similar purposes and how to apply for the funding.

It is important to identify what funding mechanisms are available to the County Council to fund the flood risk management measures that have been set out in this Strategy. A summary of different forms and sources of funding is provided below.

**European Funding**

LIFE+ initiative is a limited but focused funding programme providing specific support for the implementation of European environmental policy and legislation. The budget for the 2014-2020 period totals €3.4 billion and the programme comprises three strands:

- **LIFE+ Nature and Biodiversity**: supports environmental and nature conservation projects, which aim to protect birds and habitats and prevent the loss of biodiversity.
- **LIFE+ Environmental Policy and Governance**: aims to contribute to the implementation, updating and development of European Union environmental policy and legislation, including the integration of the environment into other policies, thereby contributing to sustainable development.
- **LIFE+ Information and Communication**: supports projects, which raise awareness of environmental, protection or biodiversity conservation issues. Projects include communication and awareness raising campaigns on environmental issues, which should be linked to the implementation, updating and development of EU environmental policy and legislation.

**INTERREG**: a collection of funds aimed at promoting inter-region cooperation across the EU. These funds focus on delivering the Gothenburg and Lisbon agendas through high quality projects in innovation, the environment, accessibility and sustainable and competitive communities.

**European Fisheries Fund**: primarily aimed at supporting the fishing industry, but will fund actions to protect and develop fish habitats under Axis 3 (funding for developments that will benefit groups, such as those working in the fishing industry).

**National Funding**

The amount of Government funding put towards flood and coastal erosion risk management projects is limited each year. Under Defra’s new partnership funding approach, relatively small amounts of local funding could make the difference between locally-important projects going ahead or not.

Under this approach, some schemes stand to be 100% grant funded by Defra and others partially funded. Defra states that if contributions can be raised from those benefitting from fully-funded schemes, any excess contribution can be retained by the risk management authority involved and used to help pay for lower scoring schemes in the area.

**Defra Grants**

Defra grants are either allocated directly to authorities to support the introduction of new legislation and practices, or made available for Local Authorities to submit grant applications for funding (such as the Early Action Fund).

The County Council will receive the following grant allocations for local flood risk management activities:

- 2016/17: £244,879 plus £18,759 for the Sustainable Drainage Systems statutory consultee role and £1,506 Section 31 grant;
- 2017/18: £249,452 plus £18,148 for the Sustainable Drainage Systems statutory consultee role and £35,056 Section 31 grant;
• 2018/19: £254,252 plus £17,507 for the Sustainable Drainage Systems statutory consultee role and £37,925 Section 31 grant; and
• 2019/20: £259,512 plus £17,507 for the Sustainable Drainage Systems statutory consultee role and £40,366 Section 31 grant.

**Flood Defence Grant in Aid**

Defra has the national policy responsibility for flood and coastal erosion risk management and provides funding through grant in aid to the Environment Agency, who then administer grant for capital projects to Local Authorities.

The new approach to funding capital maintenance and defence projects commenced in April 2012. It aims to encourage communities to take more responsibility for the flood risk that they face and aims to deliver more benefit by encouraging total investment to increase beyond the levels that Defra alone can afford. The new approach will see funding levels for each scheme (provided by Defra through Flood Defence Grant in Aid) relating directly to benefits, in terms of the number of households protected, the damages being prevented plus other scheme benefits such as environmental benefits, amenity improvement, agricultural productivity and benefits to business. Local contributions raised towards a project will help release the FCERM GIA. In addition to these elements, payment rates for protecting households in deprived areas will be higher so that schemes in these areas are more likely to be fully funded by the Government.

Under this system some schemes will receive complete funding, if the benefits significantly outweigh the costs, and for others partial funding would be available. It is hoped that this approach would encourage people to find cheaper ways to achieve positive outcomes and/or find other funding mechanisms to pay the remaining cost of the scheme.

**The Growing Places Fund**

The Growing Places Fund aims to enable targeted investment in pieces of infrastructure which unlock development, allowing places to realise development and enhance viability.

38 of the Local Enterprise Partnerships are able to apply for the funding and then take decisions about what to prioritise locally. Councils will support these plans with their technical and financial expertise.

The fund can be used to take forward a range of projects that can help facilitate economic growth, jobs and house building in the local area, providing returns which can be re-invested locally. Through this, Local Enterprise Partnerships will be able to offer secure funding to developers in their area, making it quicker for projects to get off the ground but also securing a return on that investment for the local area.

Types of projects include the provision of flood storage capacity to enable development of homes, employment space and retail space.

**Catchment Restoration Fund**

This is an Environment Agency administered fund open to third sector organisations. The fund aims to restore more natural features in and around waters and reduce the impact of small spread-out (diffuse) sources of pollution that arise from rural and urban land use.

**Regional Funding**

**Regional Flood and Coastal Committee and Local Levy**

This is an additional locally raised source of income raised by way of levy on local Authorities. The levy is used to support (with the approval of the Regional Flood and Coastal Committee) flood risk management projects that are not considered to be national priorities and hence do not attract national funding through Flood Defence Grant in Aid.

The county is covered by four Regional Flood and Coastal Committees (RFCCs). These are set out in Table A3 below along with the amount of local levy paid to each by the County Council:
### Table A.3 RFCC Areas and Levels of Levy

<table>
<thead>
<tr>
<th>Regional Flood and Coastal Committee</th>
<th>Amount of Levy (£) 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglian Northern</td>
<td>£595,992</td>
</tr>
<tr>
<td>Anglian Central</td>
<td>£31,677</td>
</tr>
<tr>
<td>Thames</td>
<td>£16,452</td>
</tr>
<tr>
<td>Severn and Wye</td>
<td>£5,016</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>£649,137</strong></td>
</tr>
</tbody>
</table>

---

**Northamptonshire Specific Local Sources of Funding**

### West Northamptonshire Infrastructure Delivery Plan

The [Infrastructure Delivery Plan](West Northamptonshire Joint Planning Unit - Infrastructure Delivery Plan Update 2015 (March 2016)) comprises a suite of documents which, together, provide evidence of the impact that the proposed growth for West Northamptonshire will have on its infrastructure up to 2026. Its purpose is to identify the infrastructure needed to deliver development, to provide the phasing, costs and timing for each item of infrastructure identified, and to assess the extent to which this infrastructure may impact on the delivery of development. In addition, it identifies responsibility for delivery, potential funding sources and, importantly, highlights any funding gaps, as well as suggesting ways in which any impacts may be overcome.

The study provides information on four aspects: flood attenuation, water supply, wastewater treatment, and the wastewater network.

Analysis of the Infrastructure Delivery Plan suggests that funding is in place for the majority of items required, and that many are only needed to service new development.

### Northamptonshire Strategic Infrastructure Programme

The development of the strategic infrastructure programme and delivery plan will identify the imminent priorities in detail and will:

- Feed into the Core Spatial Strategies and run to the same timetables;
- Be robust and complete enough to feed into CIL charging schedules that will need to be created by the district and borough councils;
- Run alongside and influence The County Council’s capital programme and priorities;
- Identify a list of project priorities which can be used to plan and align funding streams making the best possible use of government grants, 106 (developer) funding and any other opportunities that become available. These schemes will be strategic in nature and hence should equate to £50,000 and above.

The development of a strategic infrastructure programme and delivery plan for the county will identify imminent priorities in detail by summer 2012, and will develop a business case for the new infrastructure programme, making the best use of existing assets.

### A Stronger and Greener Economy Initiative

Northamptonshire Enterprise Partnership will be working with the County Council to explore the role Tax Incremental Finance could play in delivering new infrastructure schemes, including transport projects, which would help to create new jobs.

The localism agenda and financial constraints on the public sector mean that the County Council will need to explore innovative forms of funding for the infrastructure needed to deliver and release economic and housing growth and create new jobs. Whether this is for road improvements, rapid transit, superfast broadband, flood prevention or other infrastructure investment.
Other sources of potential funding

Private funding: an important funding mechanism will come from local fundraising from the local communities and businesses that would benefit from flood defence Schemes.

Water Company investment: funds can be raised through the price review process to support investment in water and wastewater infrastructure. This will include action taken to reduce sewer flooding and increase asset resilience. Water companies are able to invest in some types of surface water management and may be increasingly willing to invest in order to protect their assets and customers.

Community Infrastructure Levy: this is a locally agreed sum levied upon developers and large sums could potentially be raised over time. It is flexible in its approach as local authorities can adjust spending plans to meet priorities. It is estimated that the introduction of the levy has the potential to raise around £1 billion a year of funding for local infrastructure by 2016. Local authorities are required to use this funding for infrastructure needed to support the development; it can be used to construct new infrastructure, increase the capacity of existing infrastructure or repair failing existing infrastructure including flood defences.

Section 106 (Town and Country Planning Act 1990): this is a contribution from developers, linked to specific developments and the infrastructure required to make them acceptable in planning terms. It can be very specific to the issue being addressed and is negotiated separately for each development. It can be used to pay for defences that specific developments need in order to be safe and so acceptable in planning terms.

One of the recommendations of ‘Making Space for Water’ was that local planning authorities should make more use of Section 106 agreements to ensure that there is a strong planning policy to manage flood risk. This means that any flood risk which is caused by, or increased by, new development should be resolved and funded by the developer.

Business Rate Retention: this looks at the option to enable councils to retain their locally raised business rates. Such an approach could help local councils from their dependency on central government funding and could provide incentives, through the business rates system, for them to promote economic growth.

New Homes Bonus: this is a financial incentive to build new housing. It may help fund any additional local infrastructure needed. It should not lead to inappropriate development in areas at flood risk but should be used in cases where a particular development is dependent on flood risk management.

Communities Fund: various distributor bodies such as Biffawards, CEMEX, SITA Trust and Wren all seek to fund biodiversity projects located within various distances of their operations (usually 10 miles).

Big Lottery Fund (Communities Living Sustainably): this will fund partnerships that bring together the public, private, voluntary and community sectors to build sustainable and resilient communities to help deal with the potential impact of climate change. The programme will invest up to £10,000 to develop a project delivery plan that details the environmental, economic and social challenges affecting the community and how they can be addressed, and will provide grants of between £500,000 and £1 million for up to five years for a range of activities and initiatives within a local community.
APPENDIX 8: CIVIL CONTINGENCIES AND COMMUNITY RESILIENCE

Defra Ministers have overall responsibility for national level flood emergency planning. The Civil Contingencies Act (2004) places a number of duties on local authorities, the emergency services and other organisations (including the Environment Agency) involved in responding to flooding. The Act lists local authorities, the Environment Agency and emergency services as ‘Category 1’ responders to emergencies. It places duties on these organisations to:

- Undertake risk assessments;
- Manage business continuity and promote this to local businesses;
- Carry out emergency planning;
- Share information and cooperate with other responders; and
- Warn and advise the public during times of flooding.

Local Resilience Forums (LRFs) bring together Category 1 and Category 2 responders within a local police area, and are responsible for developing multi-agency flood plans. These plans allow all responding parties to work together on an agreed and coordinated response to flooding.

Multi Agency Flood Plan

The Northamptonshire Multi Agency Flood Plan is produced by Northamptonshire County Council on behalf of the Northamptonshire Local Resilience Forum.

The Northamptonshire MAFP addresses river, coastal and surface water flood risk (as defined in Community Risk Register) and the associated emergency response arrangements. The plan does not include flood risks from foul sewage, burst water mains, canals and private lakes, or reservoir dam failure. The plan is supported by the accompanying document “Northamptonshire Community Flood Risk Summary” which includes details of the areas more susceptible to flooding and the impact this may have.

The plan has been developed to provide a framework that enables responders to provide an effective, coordinated multi-agency response to the threat of/or incidence of flooding in Northamptonshire. The plan:

- Defines the roles and responsibilities of organisations that respond to flooding;
- Documents the planned and coordinated response of these organisations to a flood incident by:
  - Outlining the arrangements that have been put into place to mitigate and minimise the effects of a flooding incident;
  - Identifying other procedures and sources of further information to enable an effective response;
  - Outlining tactical options for the response to likely flood scenarios.
- Provides brief guidance to support the management of and recovery from incidence of flooding.

The Plan has been prepared as part of a complimentary set of emergency plans. There are a number of plans in existence many of which become relevant when an incident progresses in a particular way. The key plans that would be relevant to a flood event are listed in Table A4 below:

Table A4 Key Plans

<table>
<thead>
<tr>
<th>Plan</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northamptonshire Local Resilience Forum Major Incident Manual</td>
<td>This document sets out the core arrangements for responding to a major incident in Northamptonshire and all plans, including this one should be consistent with the principles outlined</td>
</tr>
<tr>
<td>Northamptonshire Flood Risk Summary</td>
<td>This document contains information and maps relating to the flood risk within Northamptonshire assessed on a ward basis. The information includes impact details and provides substantial information which may support decision making during a flood event</td>
</tr>
</tbody>
</table>
**Plan** | **Description**
--- | ---
Northamptonshire Multi-agency media emergency plan | This plan details the arrangements by which the different responder organisations will coordinate efforts in relation to public information and the media, including how the lead agency will be supported in managing media demand.
Northamptonshire Local Resilience Forum Recovery Plan | This document contains information and guidance to support the management of the recovery process following an incident.
Northamptonshire Local Resilience Forum Evacuation & Shelter Manual | This manual details how to plan and organise the evacuation of an area together with the process for providing a safe location from which to look after people (reception centres).
Environment Agency Northamptonshire Local Flood Warning Plan | This plan contains the procedures that the Environment Agency will use to issue flood warnings to partner agencies.

The Plan defines the key actions, roles and responsibilities of all partners before, during and after flood events, as summarised in **Table A5** below:

**Table A5 Actions, Roles and Responsibilities of Partners**

<table>
<thead>
<tr>
<th>Partner</th>
<th>Actions, roles and responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglian Water</td>
<td>Respond to flood warnings, historical field intelligence, internal telemetry intelligence and customer generated calls, in order to maintain water and wastewater services to their customers. Have site-specific emergency plans for their critical functions.</td>
</tr>
<tr>
<td>Canal and River Trust</td>
<td>The Trust is a navigation authority, which inspects, maintains and operates the water control structures within its ownership primarily to meet its statutory obligation to maintain navigation. By local agreement, the Trust may provide specific assistance in the event of a flood incident. Typically this would be in consultation with Silver Command and/or the Environment Agency.</td>
</tr>
<tr>
<td>District and Borough Councils</td>
<td>Set up a call centre if required. Provide accommodation for those unable to return home. Provide assistance to those remaining at home, in particular vulnerable persons and those without power etc. Repair any Local Authority owned damaged roads. Lead or assist the Recovery Working Group with the County Council.</td>
</tr>
<tr>
<td>East Midlands Ambulance Service</td>
<td>Assist in the evacuation of vulnerable persons with medical conditions. Provide paramedical and ambulance cover to those individuals requiring treatment and transfer to hospitals. Provide medical cover to other 999 services.</td>
</tr>
<tr>
<td>Highways England</td>
<td>Monitor impact of flooding on strategic road network, maintain operation of drainage assets, manage network incidents as required, and provide information to motorists through media, traffic radio, VMS and web site. Reinstate / repair damaged infrastructure.</td>
</tr>
<tr>
<td>Health Protection Agency</td>
<td>Provide health protection information, public health risk assessment, support and advice to NHS organisations, particularly PCTs and Regional DsPH (Directors of Public Health), and also other agencies involved in the response and recovery at local, regional and national level as well as advice to the public.</td>
</tr>
<tr>
<td>Kettering General Hospital NHS Foundation Trust</td>
<td>Deal with casualties of the incident and work with partner agencies to accelerate discharges and transfers.</td>
</tr>
<tr>
<td>Partner</td>
<td>Actions, roles and responsibilities</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Northamptonshire Fire and Rescue Service</td>
<td>To save lives and rescue trapped persons; contain and extinguish fires; prevent, contain and make safe spillage or release of chemicals, radioactive materials or other hazardous substances; removal of large quantities of floodwater; assist other relevant agencies to minimise the effects of major flooding on the community</td>
</tr>
<tr>
<td>NHS Northamptonshire</td>
<td>Coordinate the local health response to the incident; facilitate the deployment of the most appropriate local healthcare resources in response to the incident. Coordinate the collation of information on vulnerable people from partner health trusts</td>
</tr>
<tr>
<td>NHS Northamptonshire Provider Services</td>
<td>Maintain community based healthcare services; provide staff to deliver urgent healthcare to evacuees at reception centres</td>
</tr>
<tr>
<td>Northampton General Hospital Trust</td>
<td>Deal with casualties of the incident and work with partner agencies to accelerate discharges and transfers</td>
</tr>
<tr>
<td>Northamptonshire County Council as LLFA</td>
<td>Prepare and maintain plans such as the Northamptonshire Local Flood Management Strategy; advise on development proposals; oversee maintenance of ordinary watercourse capacity; maintain flood management structures; undertake prevention works; create register of flood risk assets; work closely with emergency planning; investigate flooding incidents</td>
</tr>
<tr>
<td>Northamptonshire County Council as Emergency Planning Unit</td>
<td>Coordinate the Local Authority response. Notify, liaise and coordinate voluntary agencies; liaise and assist the Emergency Services; set up Emergency Reception Centres; set up and operate Information Centres for affected communities</td>
</tr>
<tr>
<td>Northamptonshire Healthcare NHS Foundation Trust</td>
<td>Maintain community based healthcare services; provide staff to deliver urgent healthcare to evacuees at reception centres</td>
</tr>
<tr>
<td>Northamptonshire Police</td>
<td>Coordinate and facilitate operations within the affected areas; establish and maintain cordons; assist with lifesaving activities; assist in the provision of information to the public: body recovery</td>
</tr>
</tbody>
</table>

### Flood Warnings

The Environment Agency has a responsibility under the Civil Contingencies Act to provide flood warnings to those at risk from flooding from rivers and the sea. Using the latest available technology, rainfall, river levels and sea conditions are monitored 24 hours a day and this information is used to forecast the possibility of flooding. The Environment Agency provides warnings to the public, media, emergency services and local Authorities.

The Environment Agency uses nationally standardised flood warning codes for this alerting. These codes are:

**Flood Alert**

This means “**Flooding is possible. Be prepared**”. The Environment Agency issue Flood Alerts for targeted specific locations that are at risk of flooding. It will indicate that flooding is possible and that people should make some low impact preparations (e.g. move small valuable items upstairs, check travel plans) and remain vigilant.

![Flood Alert](image)

**Flood Warning**

This means that “**Flooding is expected. Immediate action required**”. The Environment Agency mainly target Flood Warnings at specific communities that are at risk from flooding. Some Flood Warnings may apply to stretches of coast and river. It will indicate that flooding is expected and that people should take more direct impact actions e.g. move belongings upstairs.

![Flood Warning](image)
This means “Severe Flooding. Danger to life”. All customers who receive a Flood Warning will receive a Severe Flood Warning if conditions are met. It will be used in extreme conditions to tell people that flooding is posing significant risk to life or significant disruption to communities which could also cause risk to life. Depending on the circumstance it would indicate that people should evacuate the area or take shelter within safe buildings.

Flood warnings no longer in force
The Environment Agency issues a message to tell people that the flood threat has passed and includes useful advice on what to do next.

Property Level Flood Resilience and Resistance Measures

Resilience and Resistance for Existing Properties

Buildings and contents insurance may protect homeowners for the costs incurred through flood damage but no insurance policy will be able to replace items with significant personal meaning or sentimental value, or be able to spare some homeowners the inconvenience and disruption of being forced from their homes during and immediately after a flood. Whilst it is not feasible to provide strategic flood defences to protect all of these dwellings from flooding, there are measures that can be put in place that can minimise the damage as a result of flooding and speed up the repair time following a flood event. Therefore the onus is on all homeowners who live in flood risk areas to take action to protect their properties from flood damage as far as they can.

Flood protection designed to keep water out of the building are referred to as flood resistance products. Temporary flood resistance products are those that need deploying (fitting or activating) prior to flooding arriving whereas permanent flood resistance products do not need activating. Flood resilience refers to measures that reduce flood damage to buildings in situations where water is allowed to enter.

The benefits of flood resilient alterations to existing properties include:

- Reducing the damage and disruption caused by a flood
- Reducing the time before which homeowners can return to their home
- Reducing the cost of repairs following a flood
- Assisting homeowners in getting property insurance
- Increased peace of mind

The Flood Toolkit provides a great deal of advice and guidance for individual homeowners, communities and businesses: http://www.flood toolkit.com/risk/prevention/

Flood Warning and Evacuation Plan

For properties located in high fluvial flood risk areas, it is recommended that the owners/occupiers sign up to ‘Floodline Warnings Direct’, a service operated by the Environment Agency where the area is designated to receive flood warnings. For more information about the service and to find out how to sign up please see the Flood Toolkit at: http://www.flood toolkit.com/warnings/

Northamptonshire Sand Bag Policy

It is the responsibility of all homeowners / residents to protect their own property. Residents who are aware that their homes are at a high risk of flooding, for example as a result of the close proximity of a watercourse, are recommended to obtain their own sandbags to enable early preparation before floods happen. These may be purchased from a local DIY store or builders’ merchant.

The County Council does not provide sandbags. However, additional support and equipment may be available from your local District or Borough Council or Parish Council, but this will depend on the area you live in.
APPENDIX 9: PROTOCOLS FOR DATA MANAGEMENT

Section 14 of the Flood and Water Management Act gives the County Council, as Lead Local Flood Authority, the power to request information in connection with its flood risk management functions. It also states that information requested must be provided in the manner and within the period specified in the request.

The Information can cover any data, documents or facts recorded in any form and can include paper files, notes, reports, databases, spreadsheets, drawings and plans, photographs and videos, electronic documents, emails, etc. There is a vast amount of data, in these different forms, held by a number of different risk management authorities within Northamptonshire.

Data Register

The Act requires LLFAs to gather and maintain records associated with local flood risk management and this will require a commitment towards the appropriate gathering, storing and dissemination of data. Similarly, risks associated with local flooding will need to be understood and this will require a commitment towards creating and enhancing information and recognising that there are aspects of local flood risk that are currently not well known.

Protocol for Requesting and Sharing Information

Section 13 and 14 of the F&WMA 2010 relates to the co-operation and sharing of information between flood risk authorities. It states that:

(1) A relevant authority must co-operate with other relevant authorities in the exercise of their flood and coastal erosion risk management functions.

(2) A relevant authority may share information with another relevant authority for the purpose of discharging its duty under subsection (1).

The County Council has sought to work within established partnerships to gather information that may be required to exercise its risk management functions.

All data collected has been catalogued and stored on the County Council’s computer network system, access to which is restricted at a departmental level. All data has been collected to the highest possible quality however, the quality of individual datasets provided is highly variable.

Confidentiality agreements

Confidentially agreements have been entered into with each of the three water companies: Anglian Water, Severn Trent and Thames that cover the geographic area of Northamptonshire. Certain sources of data provided by the Environment Agency are also subject to data restrictions.