Cheshire East Council

Local Flood Risk Management Strategy 2017 – Draft for Public Consultation

Notice

This document has been produced solely for the purpose of how we will manage flood risk across the borough of Cheshire East. It is has an ongoing review process and will be fully revised at six year intervals in-line with the Cheshire East Preliminary Flood Risk Assessment.

Amendments

Reviewer		Date	Description
MT	Matt Tandy	18/09/13	Removal of section texts
MT/PR	Matt Tandy Paul Reeves		Restructure and update of Strategy by Jacobs
PR	Scrutiny Committee	24/04/14	Presentation and approval by the Community Safety Scrutiny Committee
	Cheshire & Mid Mersey FRMA's	24/04/14	Circulation to Strategic Partners
	Paul Reeves	16/05/14	Incorporation of comments and completion of missing data by Jacobs
		30/05/14	Final draft for submission
PR	Scrutiny Committee	05/03/15	Presentation to Environment Overview and Scrutiny Committee – no comments received
AB/FK	Adrian Bratby Freideriki Karvouni	10/03/16	Final review before submission and addition of maps
PR	Scrutiny Committee	24/03/16	Presentation to Environment Overview and Scrutiny Committee – no comments received
AB/VV	Adrian Bratby Vicky Venn	10/10/16	Amendments following client review 07/10/2016
AB	Adrian Bratby	24/11/16	Revisions to Appendices 7 and 8
VV	Vicky Venn	19/01/17	Final comments prior to submission to cabinet 19/01/2017
SP	Stuart Penny	31/01/17	Updated with regards to emerging Local Plan
AF	Adrian Fisher	09/03/17	Update on emerging Local Plan checked

Foreword

This is the first Strategy for Flood Risk Management in Cheshire East. The strategy will help to ensure that the Council, the Environment Agency, United Utilities, neighbouring and other authorities work together to protect homes, businesses and other infrastructure from flooding, whilst ensuring all other relevant considerations are taken into account. It considers how various measures or activities can help to manage flood risk, from better planning of new development to ensuring emergency responders understand which locations are at greatest risk.

The driving force behind this strategy is the duty outlined in the Flood and Water Management Act 2010 to produce a Local Strategy to tackle local and cross boundary issues affecting the Borough. This Act was introduced in reference to climate change developments and the major flood events that affected the UK in 2000 and 2007.

This Local Flood Risk Management Strategy focuses on “local flood risk”. That is flooding which is caused by surface runoff, groundwater and ordinary watercourses (streams and ditches etc.). However it is not the source of flooding that’s most important, it is the effect it has in the Borough. We are keen to make sure that flooding from all sources can be managed together and addressed according to the level of risk.

Managing flood risk locally requires co-operation from all public agencies, businesses and households. Hence it is vital that, in addition to organisations working more collaboratively with each other, we engage with the local communities who are affected by flooding. The strategy set outs the roles and responsibilities of all major stakeholders, including households and community groups, so that there is clarity and understanding about when the different stakeholders need to be involved. We have a strong tradition of partnership working in Cheshire East and we intend to extend this into managing flood risk.

Taking effective steps to reduce flood risk requires an evidence based assessment to ensure that efforts and resources are appropriately focused. We have already taken measures to reduce flood risk and this strategy identifies what has been done and what we plan to do in the future.

With more development and increasingly uncertain weather patterns, flooding may occur in places where it has not been experienced before. Sometimes this involves looking for measures that can reduce the likelihood and/or the impact of flooding. Management of the flood risk may not necessarily protect all households from flooding, but may include practical measures that allow households to be prepared and capable to cope in the event of flooding.

This Strategy is our statement of intent as to how we will manage flood risk in Cheshire East. We hope it will help you become better informed of everyone’s responsibilities, how to find out your flood risk and what we can do to help you become safer.

Councillor David Brown
Cabinet Member for Highways and Infrastructure

Contents

Part A: Setting the scene and context for the Cheshire East

Local Flood Risk Management Strategy

A1 Introduction

This Local Flood Risk Management Strategy (LFRMS), referred to from now as the strategy, sets out a framework for managing the risk of local flooding. Local Flooding is defined by the Flood and Water Management Act 2010 as flooding from:

- Surface Water
- Groundwater
- Ordinary Watercourses
- Canals

Other authorities also have a role in managing these local flood risks. There are other sources of flood risk but these are managed through other strategies and plans.

Section 9[1]. Effect of national and local strategies: England

(1) A lead local flood authority for an area in England must develop, maintain, apply and monitor a strategy for local flood risk management in its area (a "local flood risk management strategy").

With its new statutory responsibilities as a Lead Local Flood Authority (LLFA), Cheshire East Council has developed this Local Flood Risk Management Strategy to set out how the Council intends to manage local flood risk through measures across the Borough. The strategy however will not contain everything needed to understand the risks. Cheshire East Council is well placed to co-ordinate flood risk management through its other statutory functions as the Local Highway Authority, Local Planning Authority and as a Category 1 Responder under the Civil Contingencies Act 2004. There is a well-developed network of partners by virtue of our historical operational and strategic practices.

Inland flooding and storms are the dominant natural hazards in the UK, having significant effects on both economic and insurance losses. The series of flooding events experienced in 2007 resulted in the UK registering the highest economic losses from flooding within Europe in the decade to 2009. Two thirds of the total damage cost of the 2007 floods was estimated to be due to flooding sources other than Main River or the sea.

More recently, severe flooding was experienced in 2012, which was one of the wettest years on record. Flooding from all sources poses a risk to life and this was illustrated in 2012 when people in the UK lost their lives. The disruption and trauma caused by flooding to homes, businesses, land and transport infrastructure can be life changing and the costs significant.

Cheshire East has experienced flooding of homes, businesses, agricultural land, road railways and public services. Flooding occurred on three occasions in Cheshire East during 2012. The most severe event occurred on 25th and 26th September 2012, when 90mm of rain fell in 48hours. This was equivalent to a 1 in 30 year rainfall event.

In June 2016 Cheshire East experienced flooding again, when an estimated 46mm of rain fell in Poynton in just two hours. It is known that in excess of 80 households were affected by this storm which is currently estimated to be equivalent to a 1 in 510 year return period.

Our changing climate is predicted to increase flood risk in the future through changing patterns of rainfall, greater flood flows in rivers and increased risks from water runoff.

A2 Structure of the document

This document forms Cheshire East Council's Flood Risk Management Strategy. It comprises two parts, A and B, which are structured as follows:

Part A provides background and context to the strategy, why it is needed, who it is for and how a catchment approach has been adopted. It sets out the roles and responsibilities bestowed on Cheshire East Council via the Flooding Water Management Act (2010). It introduces Cheshire East Council's strategic aims and five objectives for flood risk management.

Part B is structured around the strategy objectives with each objective presented in its own section. It takes account of the historical flooding problems, data collected and analysed as part of previous studies and existing management arrangements. It sets out the further actions or measures that need to be carried out to effectively manage flood risk in Cheshire East. It also acknowledges other organisations that have flood risk management responsibilities and the need to work in partnership to achieve the aims and objectives of this strategy.

A3 Objectives of the Cheshire East Local Flood Risk Management Strategy

[1] Flood and Water Management Act (2010)

The strategy formalises and develops our partnerships in respect of flood risk and takes account of the high level screening which was introduced in the Preliminary Flood Risk Assessment (PFRA), as required under the Flood Risk Regulations 2009. The PFRA showed that Cheshire East had no flooding issues that were nationally significant.

However, local flooding is on the increase. The years 2010 and 2011 experienced one of the most prolonged dry periods since 1953. It was followed by the summer of 2012 which was one of the wettest on record. This resulted in repeated flood events within the Borough at locations that have not experienced flooding before. The weather patterns are changing and we are facing a future of erratic, unseasonable and extreme weather. Flooding is now one of the highest risks facing the Borough.

A4 Who is the strategy for?

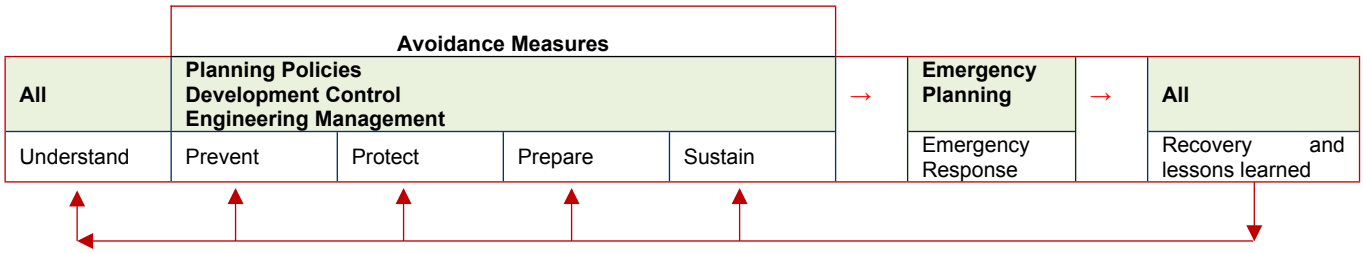
This document sets out the links between Cheshire East Council and the other risk management authorities who also have responsibilities for dealing with flooding. It shows how Cheshire East Council has responsibility as LLFA to manage flood risk in its local area and to develop a strategy setting out how it will do this. There are many who will have, or need to have, awareness, knowledge, experience or expertise in respect of flooding. The challenge for any LLFA is to now establish how to coordinate these groups to develop a wider understanding of the flood risk and to guide and influence them by defining a strategy that will reduce the risk of flooding to those who live and work in Cheshire East area.

Groups	Details
Our Community	That may be at risk of flooding
Infrastructure Providers	Community providers, Highway Authority, Network Rail United Utilities, Scottish Power and Transco etc.
Organisations responsible for managing land	Property, cultural heritage and the natural environment land areas where the responsibility lies with people such as landowners, farmers and the Forestry Commission.
Non-government organisations	Royal Society for the Protection of Birds, Country Land and Business Association, National Farmers Union, Wildlife Trusts, National Flood Forum, Association of British Insurers and economic development organisations.

A5 Principles of Local Flood Risk Management

Flooding cannot be prevented; however with effective local management it may be possible to reduce the consequences of flooding and/or reduce the probability of flooding occurring. By developing a local flood risk management strategy LLFAs can be active in helping their own local communities and implement measures to mitigate risk in their own area.

The following diagram sets out the series of steps that are needed to manage flood risk. This shows how risk can be managed at different times through the many processes. Flood risk management needs to go on continuously and that the appropriate measures will need to be adapted as circumstances change.



A6 Aims, Objectives and Measures

Cheshire East Local Flood Risk Management Strategy Aim:

To produce coherent plans to demonstrate how the Council will work with individuals, the community and organisations to holistically manage local flood risk in a sustainable manner through a range of risk management measures.

In developing its local flood risk management strategy Cheshire East Council has a clear aim as shown above. The Council has developed the following objectives to manage the various forms of local flooding in the Borough and to be consistent with the Environment Agency's National Flood and Coastal Protection Strategy. Each of these objectives led to a series of measures that have been, or will be, implemented as part of this strategy. The numbers associated with each of the measures reflect the section number where the measure is described in this strategy document.

Aims		Objectives	Section	Measures
To produce coherent plans to demonstrate how the Council will work with individuals, the community and organisations to holistically manage local flood risk in a sustainable manner through a range of risk management measures.	1	To clearly set out the different types of flooding, who is responsible and the Governance arrangements	B1.1 – B1.7	Legislation
			B1.8 – B1.9	Roles and Responsibilities
			B1.10 – 1.11	Structure and Partnerships
	2	To assess the total risk of flooding from all sources in Cheshire East	B2.1	The Strategy Study Area
			B2.2	Availability of Data
			B2.3	Summary of Identified Flood Risk
			B2.4	Potential Future Flood Risk from all Sources
			B2.5	Effects of Climate Change
			B2.6	Improving Risk Understanding
			B2.7	Surface Water Management Plans
	3	To manage flood risk and where appropriate reduce the risk and consequences of flooding through a range of activities and by effective management.	B3.1	Flood Risk Management Measures
			B3.2	Partnership Co-ordination
			B3.3	Spatial Planning
			B3.4	Sustainable Drainage Systems
			B3.5	Enforcement and Consenting
			B3.6	Works powers
			B3.7	Land Acquisition and Compulsory Purchase Powers
			B3.8	Asset Management
			B3.9	Designation of Features
			B3.10	Investigations and Flood Reporting
			B3.11	Communications and Public Engagement
			B3.12	Preparedness and Emergency Response
	4	To develop actions and interventions to reduce flood risk where appropriate.	B4.1	Overview
			B4.2	Work to Mitigate or Reduce Flood Risk
			B4.3	Maintenance
			B4.4	Community Information Provision
			B4.5	Funding
	5	To undertake flood risk management in a sustainable manner.	B5.1	Environmental Objectives
			B5.2	Contribution to Improved Environment
			B5.3	Strategic Environmental Assessment
			B5.4	Sustaining Effective Flood Risk Management

A7 Catchment Approach

This strategy will set out a framework for managing flood risk in a holistic and sustainable way and will help Cheshire East Council as the Lead Local Flood Authority decide what we and our partners need to do to manage local risks. The Cheshire and Mid Mersey (CMM) group of Lead Local Flood Risk Authorities have developed Local Flood Risk Management Strategies together on a catchment wide basis with local measures and flood risk assessments.

A8 Responsibilities

Cheshire East Council has a duty to protect the health of local residents as part of its Public Health responsibilities. It also has a responsibility for recovery following major incidents of flooding. Flooding can have a devastating impact on people's lives. It can have a high economic impact on the Borough in damaging properties and business. It brings the risk of drowning and injury and if water is contaminated it can increase the risk of infection. More commonly it causes significant disruption and distress to people's lives as they deal with the aftermath of flooding in their home or business. Relocating, clearing up, and dealing with the consequences of flooding can cause anxiety and stress over many months and may exacerbate existing mental health conditions. Decreasing the risk of flooding and building resilience meets both these responsibilities.

A9 Powers and Duties

The Flood and Water Management Act 2010 places a number of new duties on the Council through either amending existing Acts such as the Land Drainage Act 1991 or through the FWMA itself. The responsibilities defined in the Act are summarised below, with Section 3 setting out how the Council will develop these duties to manage flood risk.

Responsibility		Details
Preparation of an Asset Register	Section 21	Cheshire East has a duty to maintain a register of structures or features, which are considered to have an effect on a flood risk. This includes details of ownership and condition as a minimum.
Power to designate flood risk management structures	Schedule 1 Section 30	Cheshire East, as well other flood management authorities, have powers to designate structures and features that affect flooding or coastal erosion in order to safeguard assets that are relied upon for flood or coastal erosion risk management.
Investigation of flood incidents	Section 19	Cheshire East has a duty to co-ordinate the investigation and recording of significant flood events within its area. This duty includes identifying which authorities have flood risk management functions and what they have done or intend to do with respect to the incident, notifying risk management authorities where necessary and publishing the results of any investigation carried out.
Prepare a Local Strategy for Flood Risk Management	Section 9	Cheshire East is required to develop, maintain, apply and monitor a local strategy for flood risk management in its area. The local strategy will build upon information such as national risk assessment and will use consistent risk based approaches across different local authority areas and catchments.
SuDs Approval Body*	Schedule 3	Cheshire East is designated as the SuDS Approval Body (SAB) for any new drainage system and therefore must approve, adopt and maintain any new sustainable drainage systems (SuDS) within their area.
Works powers	(Amendment to Land Drainage Act 1991, s14)	LLFAs have powers, consistent with the local flood risk management strategy for that area, to undertake works to manage flood risk from surface runoff and groundwater.
Consenting work affecting Ordinary Watercourses	Section 21	If riparian owners wish to build a culvert/structure or make any alteration likely to affect the flow of an ordinary watercourse, land drainage consent is required from Cheshire East Council as an LLFA.
Powers to Create Byelaws	(Amendment to Land Drainage Act 1991, s66)	The Council may make such byelaws as they consider necessary for securing the efficient working of the drainage system within its administrative area. At present, byelaws are being progressed by the partners within the Cheshire and Mid Mersey group.

* At the time of writing, the SuDS aspects of the FWMA have not been fully implemented.

A10 Documents that Contribute to the Strategy

There are a number of existing documents relating to flood risk and planning policy that form the basis of this strategy:

Documents Contributing to this Strategy:

- Local Flood Response Plan 2012
- Cheshire East Multi Agency Flood Plan
- Mid-Mersey Water Cycle Study (Outline Phase) 2011
- Preliminary Flood Risk Assessment (PFRA) 2011
- Cheshire East Council Climate Change Action Plan 2010
- Saved policies in five legacy Local Plans
- Level one Strategic Flood Risk Assessment (SFRA1) 2009
- Mersey Catchment Flood Management Plan (CFMP) 2008
- Cheshire East Local Plan (being produced in three parts) in progress to supersede existing statutory Development Plan
- Cheshire East Surface Water Management Plan – Level 1 Assessment Report 2012;
- Level two Strategic Flood Risk Assessment (SFRA2) 2013

Part B: The objectives and measures for the Cheshire East Local Flood Risk Management Strategy

B1: Risk Management Authorities and Responsibilities

Objective 1:

Clearly set out the different types of flooding, who is responsible and the Governance arrangements.

Section 9. Local flood risk management strategies: England

(4) The strategy must specify – (a) the risk management authorities in the authority's area.

B1.1 National Context

The Flood and Water Management Act identifies certain organisations as 'Risk Management Authorities'. These have management responsibilities around flooding, which include new responsibilities from the Flood and Water Management Act and existing ones from previous legislation.

B1.2 Background Legislation

The development and responsibility for flood risk management has evolved in recent years. It was the responsibility of the Local River Authorities until 1989, when a new Water Act was passed in Parliament, which privatised the Water and Sewerage functions across the country. The flood risk functions were then transferred to the National Rivers Authority in 1991 when several pieces of legislation where enacted. This legislation aimed to consolidate the existing powers including the Land Drainage Act, Water Resources Act, Statutory Water Companies Act and Water (Consequential Provisions) Act and addressed the roles and responsibilities of the Authorities.

The Environment Agency was then established in 1995, replacing the National Rivers Authority and took over the flood warning duties from the Police. Cheshire East is based within the EA's North West Region, which has its regional head office based in neighbouring authority of Warrington. The release of the Planning Policy Guidance 25 (PPG25) in 2001 was in response to major flood events in 1998 and 2000, to strengthen flood risk planning. This was superseded by the Planning Policy Statement 25 (PPS25) in 2006 for sustainable surface water management and recently superseded again by the current National Planning Policy Framework (NPPF), which rationalises development legislation and processes.

B1.3 Current Legislation

Following the 2007 Floods, the Pitt Review (2008) led to the overhaul of flood risk legislation within England and Wales. This emphasised greater responsibility, particularly for surface water issues for upper tier Authorities such as Cheshire East Council. These responsibilities where brought about with the enactment of the Flood and Water Management Act (2010). A summary of the relevant documents is as follows:

Legislation	Details
The Pitt Review (2008)	Sir Michael Pitt carried out a review of flood risk management practices after the widespread floods of 2007, in which over 50,000 households were affected and damages exceeded £4billion. The Pitt Review called for urgent and fundamental changes to the way flood risk was being managed. The report contained 92 recommendations for the Government, which were based around the concept of local authorities playing a major role in the management of local flood risk.
The Flood and Water Management Act (2010)	The Flood and Water Management Act 2010 (FWMA) provides legislation for the management of risks associated with flooding and coastal erosion. Many of the recommendations contained in the Pitt Review have been enacted through the Flood and Water Management Act 2010. The Act places a number of roles and responsibilities on risk management authorities such as Cheshire East Council, designating it a Lead Local Flood Authority. The preparation of this Local Flood Risk Management Strategy is brought about by this piece of legislation.

Legislation	Details
The Flood Risk Regulations (2009) (1) Preliminary Flood Risk Assessment (PFRA) (2) Flood Hazard and Flood Risk Maps (3) Flood Risk Management Plans	The Flood Risk Regulations 2009 transposes the EU Floods Directive into law for England and Wales. The Flood Risk Regulations require three main pieces of work: The collecting of information on past and future floods from surface water, groundwater and small watercourses, assembling the information into a PFRA report and identifying Indicative Flood Risk Areas. The PFRA for Cheshire East Council has been completed and available on the Council website. Following the identification of Flood Risk Areas, the Environment Agency and Cheshire East Council were required to produce hazard and risk maps for the 2011 PFRA. These have been completed and are available on the Council website. The final stage is for Cheshire East Council to produce a Flood Risk Management Plan for the Indicative Flood Risk Areas. Cheshire East Council's Local Flood Response Plan and Cheshire East's Multi Agency Flood Plan (Cheshire Resilience Forum) will contribute significantly to the preparation of Flood Risk Management Plan. Cheshire East Council Flood Risk Management Information web page is available at: http://www.cheshireeasthighways.org/Flood-Risk-Management.aspx
National Planning Policy Framework (2012)	The National Planning Policy Framework is a new document developed by the Department for Communities and Local Government (CLG). It is designed to streamline planning policy by substantially reducing the amount of planning guidance by bringing it all together in one coherent document. It is available from the national planning portal at http://planningguidance.planningportal.gov.uk

B1.4 National Flood and Coastal Erosion Risk Management Strategy

Section 11. Effect of National and Local Strategies: England

(1) In exercising its flood and coastal erosion risk management functions, an English risk management authority must

(a) act in a manner which is consistent with the national strategy and guidance, and;
(b) except in the case of a water company, act in a manner which is consistent with the local strategies and guidance.

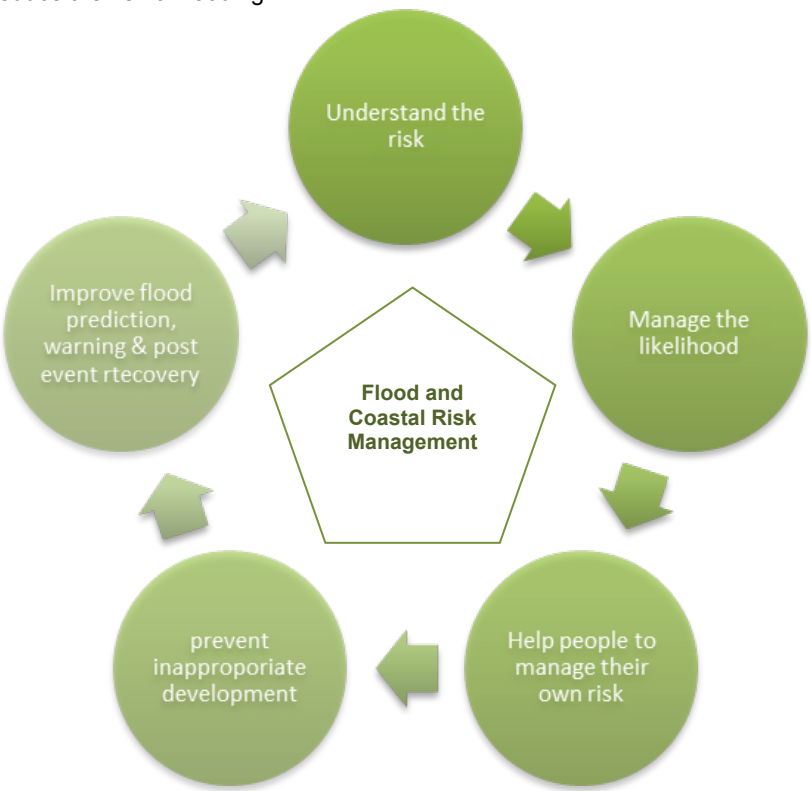
The Environment Agency and the Department for Environment, Food and Rural Affairs (Defra) have published a National Flood and Coastal Erosion Risk Management Strategy for England to ensure that the government, Environment Agency, local authorities, water companies, internal drainage boards and other organisations that have a role in Flood and Coastal Erosion Risk Management (FCERM) understand each other's roles and co-ordinate how they manage these risks. This fulfils a requirement in the Flood and Water Management Act 2010. The Act gives the Environment Agency a 'strategic overview' of Flood and Coastal Erosion Risk Management and in turn takes forward recommendations from Sir Michael Pitt's inquiry into the 2007 floods.

The National Strategy for Flood and Coastal Erosion Risk Management provides the overarching framework for future action by all Risk Management Authorities to tackle flood and coastal erosion in England. It has been prepared by the Environment Agency with input from Defra, to ensure it reflects government policy. Localism is at the heart of the new strategy recognizing that there is a limit to what Government and national bodies can achieve alone, and that national priorities are only part of the picture.

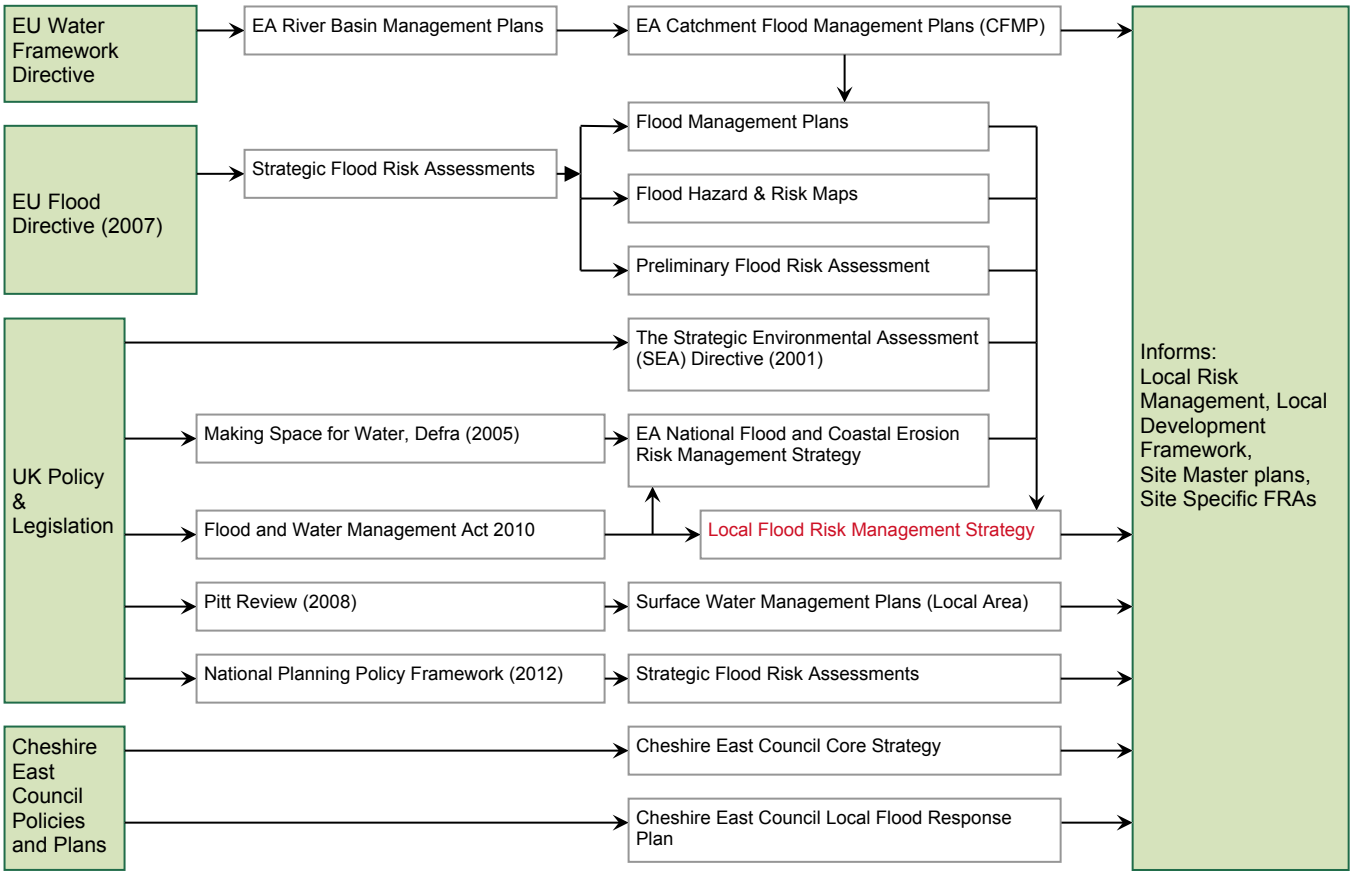
The National Strategy encourages more effective risk management by enabling people, communities, business, infrastructure operators and the public sector to work together. It sets out what needs to be done to manage these risks by improving our understanding of them, reducing the likelihood of incidents happening, as well as managing the potential consequences to people, businesses, infrastructure and services. The National Strategy addresses these aims and shares them with the local level to:

- respond better to flood incidents and recovery;
- encourage local innovations and solutions;
- help households, businesses and communities better understand and manage the flood risks they face;
- manage the risk of flooding to people and their property and where possible, to improve standards of protection;
- invest in actions that benefit public who face the greatest risk, but who are least able to afford to help themselves;
- put sustainability at the heart of the actions we take, work with nature to benefit the environment, people and economy; and
- move the focus from national government-funded activities towards an approach that gives more power to local people, at individual, community or local authority level.

The following diagram, taken from the National Strategy, demonstrates how the objectives have been set and measures have been identified to reduce the risk of flooding.



B1.5 Overview of legislation contributing to current flood risk management



B1.6 Localism Act

Localism Act 2011

The Localism Act identifies a duty to cooperate in joint planning, in particular where sustainable development or use of land has, or would have, a significant impact on a minimum of two planning areas. This includes land and infrastructure that is strategic, or within sites of special scientific interests and Green Belt land.

Linking with the Flood and Water Management Act 2010, the Localism Act brings the possibility or discretion to share data and cooperate. As stated in the Act it becomes a defined legal duty, thus strengthening the position of LLFAs in dealing with the upcoming SAB and SuDS* duties. The Localism Act gives communities and local government greater powers and freedom from Whitehall. The five key measures in the Localism Act intended to decentralise power are:

- community rights;
- neighbourhood planning;
- housing;
- general power of competence; and
- empowering cities and other local areas.

* At the time of writing, the SuDS aspects of the FWMA have not been fully implemented.

B1.7 Other Relevant Legislation

There is a wide range of other relevant legislation and guidance contributing to Flood Risk Management including (but not limited to):

- The Climate Change Act (2008)
- The Conservation of Habitats and Species Regulations (2010)
- The Civil Contingencies Act (2004)
- The Strategic Environmental Assessment (SEA) Directive (2001)
- The Land Drainage Act (1991)
- The Water Framework Directive (2007)
- Wildlife and Countryside Act (1981);
- Countryside and Rights of Way Act (2000)
- Public Health Act (1936)
- Highways Act (1980)
- Reservoirs Act (1975)
- Land Drainage Act (1998)
- Defra: National flood and coastal erosion risk management strategy for England
- Defra: Co-operation and requesting information in flood and coastal erosion risk management
- Defra: Making Space for Water
- Defra: Understanding the risks, empowering communities, building resistance
- Local Government Group: Framework to assist the development of the Local Strategy for Flood Risk Management
- Biodiversity Action Plan
- Cheshire East Local Plan Core Strategy
- The Conservation of Habitats and species Regulations (2010)
- Catchment Management Plans & River Basin Management Plans

B1.8 Responsibility for each type of Flooding

The following describes a variety of types and sources of flooding. Responsibility for managing flood risk rests with different authorities and is dependent upon the type of flooding experienced. The flood risk management authorities that operate within Cheshire East are:

	Flooding Type	Details	Risk Management Authority
Natural	River flooding (Fluvial)	This occurs when a river or stream cannot cope with the water draining into it from the surrounding land – for example, when heavy rain falls on ground that is already water logged.	Ordinary Watercourse – Cheshire East Council Main River – Environment Agency
	Surface water flooding (Pluvial)	This occurs, for example, when rainwater does not drain away through the normal drainage system, or soaks into the ground, but lies on or flows over the ground instead. This type of flooding can be difficult to predict and pinpoint, much more so than river or coastal flooding.	Cheshire East Council

	Flooding Type	Details	Risk Management Authority
	Groundwater Flooding	This occurs when levels of water in the ground rise above the surface. It is most likely to happen in areas where the ground contains aquifers. These are permeable rocks that water can soak into or pass through.	Cheshire East Council
Joined	Highway Flooding	Flooding is caused by heavy rainfall or overflowing from blocked drains and gullies causing water to pond within the highway network.	Cheshire East Council
Unnatural	Sewer Flooding	This can happen when sewers are overwhelmed by heavy rainfall or when they become blocked. The chance of flooding depends on the capacity of the local sewage system and amount of rain that falls. Land and property can be flooded with water contaminated with raw sewage as a result. Sewers that overflow can also pollute rivers.	United Utilities
	Water Supply Flooding	When flooding occurs from a result of manmade water supply, for example a burst water mains resulting in flooding in a residential area.	United Utilities
	Reservoir flooding	Reservoirs hold large volumes of water above ground level, contained by walls or dams. Although the safety record for reservoirs in England is excellent, it is still possible that a dam could fail.	Canal and River Trust Environment Agency United Utilities Cheshire East Council
	Canal	Canals are rivers or manmade channels that have been developed for use in industry. Canal flooding occurs when the canal cannot cope with the water draining into it from the surrounding land.	Canal and River Trust

B1.9 Risk Management Authorities and Responsibilities

The Flood and Water Management Act identifies certain organisations as 'Risk Management Authorities', which have responsibilities around flooding, both new ones from the Flood and Water Management Act and longstanding ones from previous legislation.

As LLFA, Cheshire East Council coordinates all local Flood Risk Management activities. The Cheshire East Flood Risk Management team lies within Cheshire East Highways. Flood Risk Management is connected to relevant other council functions including Planning, Sustainability and Transportation which means that management of flooding is considered as an integral part of managing the local area.

The responsibilities and activities of the Risk Management Authorities operating with Cheshire East are summarised as follows:

Authority	Responsible For	Activity
Government (Defra)	Defra develops FCERM policy and is the lead Government department for flood risk management in England.	New or revised policies are prepared with other parts of Government such as the Treasury, the Cabinet Office (for emergency response planning) and the Department for Communities and Local Government (land-use and planning policy). These national policies form the basis of the Environment Agency's work.
Environment Agency	As national co-coordinator, the Environment Agency has a strategic overview of all sources of flooding and coastal erosion (as defined in the Flood and Water Management Act 2010). It is also responsible for flood and coastal erosion risk management activities on main rivers and the coast, regulating reservoir safety, and working in partnership with the Met Office to provide flood forecasts and warnings. ➢ Main rivers ➢ Raised reservoirs over 10,000m³	Developing long-term approaches to FCERM. This includes working with others to prepare and carry out sustainable Catchment Flood Management Plans (CFMPs) to address flood risk in each river catchment. Shoreline Management Plans (SMPs) assess the risks of coastal flooding and erosion and propose ways to manage them. The Environment Agency also collates and reviews assessments, maps and plans for local flood risk management (normally undertaken by Lead Local Flood Authorities). Providing evidence and advice to support others. This includes national flood risk information, data and tools to help other risk management authorities and inform government policy, and advice on planning and development issues. Working with others to share knowledge and the best ways of working. This includes work to develop FCERM skills and resources. Monitoring and reporting on flood and coastal erosion risk management. This includes reporting on how the national FCERM strategy is having an impact across the country. The Environment Agency brings together local authorities and communities to share our combined knowledge, and develop a sustainable framework so that the right actions are decided for each community.

Authority	Responsible For	Activity
Cheshire East Council (LLFA)	As local coordinators, the Flood and Water Management Act directs LLFAs to manage flooding from: ➢ Surface Water ➢ Highway Drainage ➢ Groundwater ➢ Ordinary Watercourses Providing and managing highway drainage and roadside ditches under the Highways Act 1980.	Prepare and maintain a strategy for local flood risk management in their areas, coordinating views and activity with other local bodies and communities through public consultation and scrutiny, and planning. Maintain a register of assets – these are physical features that have a significant effect on flooding in their area, Issue consents for altering, removing or replacing certain structures or features on ordinary watercourses. Establish approval bodies for design, building and operation of SuDS*; Play a lead role in emergency planning and recovery after a flood event. Set land use policy and manage development in relation to policy * At the time of writing, the SuDS aspects of the FWMA have not been fully implemented. The owners of land adjoining a highway also have a common-law duty to maintain ditches to prevent them causing a nuisance to road users. To manage these risks as set out in the national strategy, authorities will need to work effectively with the Environment Agency.
United Utilities	Work with flood authorities to co-ordinate the management of water supply and sewage systems. Ensure their systems have the appropriate level of resilience to flooding, and maintain essential services during emergencies. Maintain and manage their water supply and sewerage systems to manage the impact of flooding and pollution to the environment.	United Utilities is responsible for the management of urban drainage system throughout Cheshire East, including surface water and foul sewerage. United Utilities take the issue of surface water and foul water flooding very seriously and have invested £52 million over recent years to reduce flooding from these sources in the North West.
Police/ Cheshire Fire and Rescue Service	Police and Fire and Rescue Service can identify locations at which they have been involved in flood incident management. Work with flood authorities to co-ordinate flood response or in emergency situations take the lead in the overall management.	
Private Sewer Ownership	Since the 1st October, 2011 property owners have been no longer responsible for certain sewer pipes that connect their homes to public sewers.	New legislation has transferred responsibility for these pipes, called private sewers and lateral drains, to United Utilities. Since the private sewer transfer there are public sewers owned and maintained by United Utilities and private drains. This has removed confusion for responsibility and helped flood management. Private pumping stations will not be transferred until October 2016.
Residents and Business	Riparian Land Owners are responsible for the maintenance and upkeep of watercourses if they are located within their landownership. Householders and businesses are responsible for the protection of their own properties.	

Floodwater is viewed as a common enemy of all. This means that everyone has the responsibility to protect their properties from flooding. Whatever steps an individual takes to protect their property from flooding, they must be carried out with due care. A property owner must ensure that they do not cause harm to their neighbours or their property through their actions to reduce their own flood risk.

B1.10 LLFA Structure

Section 13 Co-operation and arrangements

(1) A relevant authority must co-operate with other relevant authorities in the exercise of their flood risk management functions.
(2) A relevant authority may share information with another relevant authority for the purpose of discharging its duty under sub-section (4) A risk management authority may arrange for a flood risk management function to be exercised on its behalf by:
(a) another risk management authority, or
(b) a navigation authority (within the meaning given by section 219 of the Water Industry Act 1991).

Much of the local knowledge and technical expertise necessary for Cheshire East Council to fulfil its duties as LLFA lies with the Council and other partner organisations. It is crucial that the Council works alongside these partners as they undertake their responsibilities to ensure effective and consistent management of local flood risk. These working arrangements have been formalised to ensure clear lines of communication. The structure is shown on the following page.

B1.11 Catchment Partners

Cheshire East has taken a whole catchment view of flood risk management. The Council's administrative area is situated amongst others within the Upper Mersey and Lower Dee catchment areas therefore the Council has established a strong liaison link with neighbouring Lead Local Flood Authorities due to the general topography and drainage characteristics of the area.

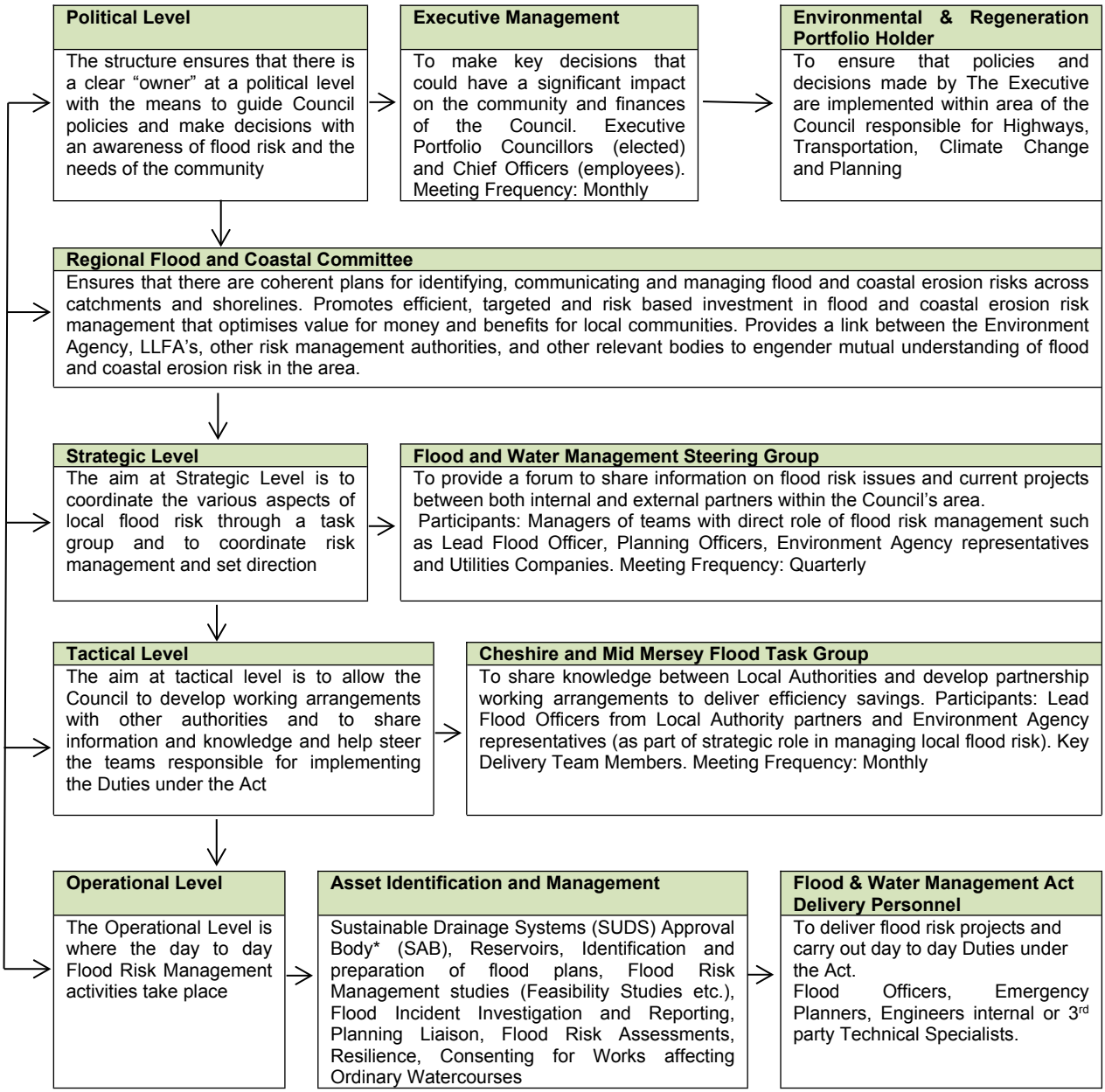
For the purpose of flood risk management Cheshire East Council is part of the wider Cheshire and Mid-Mersey (CMM) sub-regional LLFA working group. The group has agreed to follow the same principles in producing each respective Local Flood Risk Management Strategy. This will ensure the LLFAs work on a catchment wide basis whilst engaging with their local communities and approaching flood risk management using the same broad range of measures.

The catchment partners in the CMM group are Cheshire East Council, Cheshire West and Chester Council, Halton Borough Council, St Helens Metropolitan Borough Council and Warrington Borough Council.

In addition, Cheshire East and Staffordshire LLFA are working in partnership to develop a Surface Water Management Plan for Kidsgrove and Church Lawton.

ACTION:

Continue to develop links with partner organisations and gain agreement to this draft LFRMS for Cheshire East



* At the time of writing, the SuDS aspects of the FWMA have not been fully implemented.

B2: Assessment of flood risk in Cheshire East

Objective 2:

Assess the total risk of flooding from all sources in Cheshire East

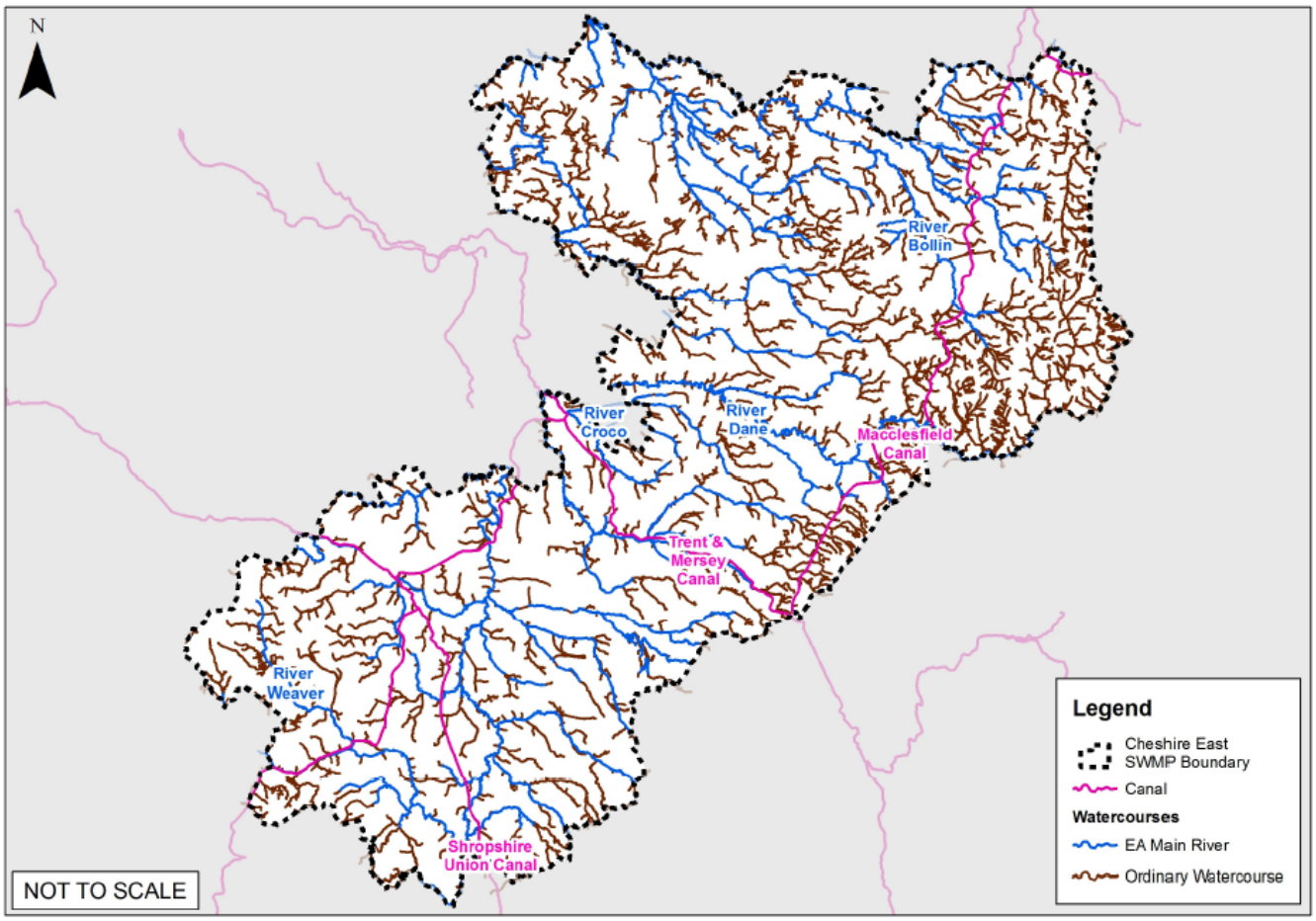
The assessment of flood risk in Cheshire East will be developed by researching the area to identify flooding issues and produce Risk Assessments. The Risk Assessments are produced using a range of internal and external datasets and documentation, local knowledge and Environment Agency mapping and modelling as listed in Section 2.2.

Section 9 Local Flood Risk Management Strategies: England

(g) the assessment of local flood risk for the purpose of the strategy

B2.1 The Strategy Study Area

The area for this strategy is defined by the boundary of Cheshire East Council. The geographical extent of the study area is illustrated below. The Borough of Cheshire East covers approximately 111,600 hectares, is predominately rural and contains the railway town of Crewe, the old mill towns of Macclesfield, Bollington and Congleton and the market towns of Nantwich, Knutsford and Sandbach, as well as Middlewich, Wilmslow, and other important settlements such as Poynton, Alderley Edge, Holmes Chapel and Prestbury. At the time of the 2010-year estimate, the population of Cheshire East was approximately 363,800.



The majority of the Borough lies within the catchments of the River Weaver, River Gowy and River Mersey. Other major watercourses in the Borough include the River Bollin, River Dane and River Croco. There are a number of large tributaries of these rivers which flow from west to east through the Borough. These major watercourses are classified by Defra as Main Rivers which are the responsibility of the Environment Agency who assesses their risk of flooding and holds permissive powers to undertake flood management works. There are also a number of large canals running through the Borough of

Cheshire East. The Canal and River Trust, formerly British Waterways, is responsible for managing and maintaining these canals.

Cheshire East Key Facts:

- Flooding Incidents (16 months to Jan 2017)
  - Flooding – 4540
  - Ditches – 28
  - Gully/ Drainage – 12,516
- Planning applications per year – 1000
- Estimated number of Section 23 consents per year – up to 60
- River lengths
  - Main river – 665 km
  - Ordinary watercourses (including canals) – 1596 km
- Canals
  - Macclesfield
  - Trent & Mersey
  - Shropshire Union
  - Llangollen and
  - Peak Forest
- Reservoirs - Approximately 20 within the Borough
- Road Network – 2674km
- Gullies – 85,000
- Highway structures >1.5m span – 690
- Highway structure < 1.5 m span (including bridges, culverts and pipes) – 471
- Highway retaining walls (mostly >1.5m retained height) – 129
- PROW Bridges (footpaths, bridleway, BOATS and RUPPS) – 63
- Formal District Council Bridges (not on highway network) – 41
- Third party bridges on highway network (Network Rail, Rail Properties Ltd, Canal & River Trust) – 154

Given its location at the top of the Weaver Gowy Catchment, Cheshire East generally has a low flood risk rating with few historical, significant events. However, there are local hotspots and in the future cumulative effects of new developments and the unpredictability of climate change will have an effect on flood risk. Past flood events are useful backgrounds in understanding the current and future flood risk. The Preliminary Flood Risk Assessment (PFRA) produced in June 2011 concluded that compared to the National defined threshold there were no historically significant and/or harmful consequences of flooding. This was based on the following definition of significant flooding.

Cheshire East PFRA definition of significant flooding:

- More than 80 houses (equivalent to 200 people); or
- 5 non-residential properties; or
- 1 piece of critical infrastructure

It is often difficult to forecast where storms will hit and how severe their impact will be. In some cases storms may materialise without any forecast. However, the September 2012 event was forecast accurately. Erratic, unseasonal and extreme weather seems to be increasing with flooding becoming a high risk for the Borough. It is against this dynamic and unpredictable background that the assessment of flood risk is made.

Cheshire East Recent flood events:

The years 2010 and 2011 experienced one of the most prolonged dry periods since 1953. They also had one of the worst winters for 100 years. In 2012 many parts of the country experienced early drought orders, however, from June the weather patterns changed drastically. The summer of 2012 was one of the wettest for 100 years, nationally recording rainfall of 200% above average.

The Borough experienced 3 flood events over the summer of 2012 that affected properties. The most severe flooding occurred on the 25th and 26th September when 90 mm of rain fell in 48 hours. Normal September average rainfall is 73.44 mm for the entire month. This occurred because the deepest low pressure weather system for 30 years stationed itself over the north of the UK.

The floods of September 2012 were eclipsed by a flood event in Poynton in June 2016. This event equated to rainfall intensity of a 1 in 510 year event. Cheshire East Council does receive extreme weather warnings from the Met Office. However, as witnessed during the summer of 2016, these warnings have sometimes proved inaccurate. Summer storms can be highly localised, of short duration and of high intensity.

B2.2 Availability of Data

The understanding of flood risk is based on a number of data sets. The following table shows the data that is available within Cheshire East. It defines the datasets referred to, the source of the data and describes the nature of the data included.

Authority	Dataset	Description
Environment Agency	Flood Map (Rivers and the Sea)	Shows the extent of flooding from rivers with a Catchment of more than 3km² and from the sea.
	Flood Map for Surface Water (FMfSW)	Includes two flood events (with a 1 in 30 and a 1 in 200 chance of occurring) and two depth bandings (greater than 0.1m and greater than 0.3m). (Makes allowance for some drainage).
	Areas Susceptible to Surface Water Flooding (AStSWF)	The first generation national mapping, outlining areas of risk from surface water flooding across the country with three susceptibility bandings (less, intermediate and more). (Makes no allowance for drainage).
	Areas Susceptible to Groundwater Flooding (AStGWF)	Coarse scale national mapping showing which areas are susceptible to groundwater flooding.
	National Receptors Dataset (NRD)	A national dataset of social, economic, environment and cultural receptors including residential properties, schools, hospitals, transport infrastructure and electricity substations.
	Indicative Flood Risk Areas	Nationally identified Flood Risk Areas, based on the definition of 'significant' flood risk described by Defra and WAG.
	Historic Flood Map	Attributed spatial flood extent data for flooding, from all sources.
	Upper Mersey and Weaver Gowy Catchment Flood Management Plans	CFMPs consider all types of inland flooding, from rivers, groundwater, and surface water and tidal flooding and are used to plan and agree the most effective way to manage flood risk in the future.
Cheshire East Council	Strategic Flood Risk Assessment (SFRA);	SFRA contain useful information on historic flooding, including local sources of flooding from surface water, groundwater and flooding from canals. SFRA applies a sequential analysis in respect of development.
	Preliminary Flood Risk Assessment (PFRA)	Preliminary Flood Risk Assessment (PFRA) Details on historical past flooding records and possible future flooding areas. The document also contains the level of significant flooding.
	Historical flooding records	Historical records of flooding from surface water, groundwater and Ordinary Watercourses.
	Anecdotal information relating to local flood history and risk; Basic Anecdotal information	Anecdotal information from authority members regarding areas known to be susceptible to flooding from excessive surface water, groundwater or flooding from Ordinary Watercourses. Anecdotal information: flood risk, flood history and local flood hotspots.
	Highways Flooding Reports	Highways Flooding Reports for a number of locations within Cheshire East, including analysis of the flood risk at each location.
	Structures, Defence, Parks, Sewer flooding register	Anecdotal information on structures and open spaces relating directly/indirectly to flooding protection and incidents Record of all sewer flooding incidents
	Desk Top Culvert Inundation Study	A desk top study to provide initial culvert locations and inundation flood model.
	Updated Flood Map for Surface Water (uFMfSW)	The latest and most detailed national scale surface water mapping for England and Wales. It provides an indication of broad areas likely to be at risk of surface water flooding
Police / Fire & Rescue	Police, Fire & Rescue Anecdotal information	Anecdotal information regarding local flood risk hotspots are reported/logged to the Council on an on-going basis (Data to be collected for the next review).
United Utilities	Wastewater Incident Register System (WIRS) & Sewerage Incident Register System (SIRS)	Extracts from United Utilities Sewerage Incident database Record of all sewer flooding incidents.
	DG5 Register	It is a register of properties/areas that have flooded as a result of under capacity of the sewerage system which has been reported to United Utilities. It is not a true risk register.

B2.3 Summary of Identified Flood Risk

Type of Flooding	Overview	Record
Flooding from Ordinary Watercourses (Fluvial)	Ordinary Watercourses are any watercourses that are not designated as a 'Main River' by the Environment Agency and therefore come under the powers of Cheshire East Council. These watercourses can vary in size considerably and can range from drains and open ditches, to streams, brooks and small rivers. Like many watercourse systems the network has many culverts and of various sizes throughout the Borough.	The PFRA concluded that there were nineteen flooding incidents due to fluvial flooding, two of which were significant. Historic fluvial flooding incidents have been identified using the Environment Agency's Detailed River Network (DRN) and are indicated in **Appendix 1 Figure 6b.**
Surface Water Flooding (Pluvial)	Surface water flooding in this context is defined as surface water runoff as a result of high intensity rainfall when water is ponding or flowing over the ground surface before entering the underground drainage network or watercourse, or cannot enter it because the network is full or at capacity, thus causing flooding. Pluvial flooding also includes overland flows from the urban/rural fringe entering a built up area. Whilst pluvial flooding from heavy rainfall can occur anywhere across the Borough, there are certain locations where these mechanisms are more prominent. This is due to the urban nature of the catchment, complex hydraulic interactions between watercourses and surface water and combined sewer systems.	The Level 1 SWMP identified three high risk areas for further detailed investigation. The SWMP recommended actions including Detailed/ Intermediate Risk Assessment, coordination with partners, maintenance works, and screen replacement. Significant surface water flooding was a result of interacting hydraulic mechanisms. See **Appendix 1 Figure 6a**. In the 16 months from Jan13 over 9000 reports of flooding/drainage problems have been recorded on CEC's CONFIRM incident register.
Groundwater Flooding	Groundwater flooding is caused by the emergence of water from underground either at point or diffuse locations. The occurrence of groundwater flooding is usually very local and unlike flooding from rivers and the sea, does not generally pose a significant risk to life due to the slow rate at which the water level rises. However, groundwater flooding can cause significant damage to property, especially in urban areas, and can pose further risks to the environment and ground stability. There are several mechanisms, which produce groundwater flooding including: High in-bank river levels; artificial structures; prolonged rainfall; and groundwater rebound (which occurs when abstraction, typically for drinking water, industrial or mine dewatering purposes; stops and water levels return to pre-abstraction levels).	Map information was taken from the EA dataset for areas susceptible to groundwater flooding. See **Appendix 1 Figure 2.** During the flooding in September 2012 one incident of groundwater flooding was recorded at Bollington. Further liaison with EA is needed to determine the scope of investigation required in to groundwater flooding.
Highway Drainage Networks and Sewers	Flooding from artificial drainage systems occurs when flow entering a system, such as an urban storm water drainage system, exceeds its discharge capacity. The system either becomes blocked or it cannot discharge due to a high water level in the receiving watercourse. A sewer flood is often caused by surface water discharging into the surface water or combined sewer systems. The sewer capacity is exceeded in large rainfall events causing the backing up of floodwaters within properties or discharging through manholes. The management of flood risk from public sewers is the responsibility of the sewage undertaker which is United Utilities (UU) across the Borough of Cheshire East.	Records show that flooding has occurred mainly in areas around Congleton, Crewe and Macclesfield with a handful of incidents in the smaller localities of Middlewich, Poynton and Sandbach. Sewer flooding records have been indicated in **Appendix 1 Figure 6c.**
Flooding from Canals	The risk of flooding from canals is dependent upon a number of factors. Canals are manmade structures and heavily controlled therefore they do not respond with the same characteristics as an open watercourse would during a heavy rainfall events. Canal flooding is likely to be caused by: erosion of canal lining, collapse of carrying structures, overtopping of banks and blockage or collapse of culverts. The risk associated with canal flooding is also dependent upon the failure consequences, e.g. infrastructure affected and the impact it would have on the local community. Consequences of canal flooding are heavily influenced by the pond length of canal because this will determine the flow period of flood water.	Macclesfield, Trent & Mersey, Llangollen, Peak Forest and Shropshire Canals flow through Cheshire East. Incidents of Historic Canal Breaches and Overtopping Events are listed in **Appendix 1 Figure 6d.**
Flooding from Reservoirs	Flooding from Reservoirs can occur when there is failure of the retention structure or outlet mechanisms. Areas within Cheshire East may be at risk from failure of reservoirs outside the Borough.	There are no recorded incidents of flooding from reservoirs in Cheshire East. The Environment Agency has produced inundation maps showing the area at risk of flooding in the event of large reservoir failure.

ACTION:

Compile a register of all flood risk management infrastructure in Borough and a register of flooding incidents reported to the Council

B2.4 Potential Future Flood Risk from all Sources

Even though areas may not have experienced flooding in the past, this does not mean that they are not at risk. This section aims to identify the likely risk of flooding across Cheshire East by looking at predictive flood risk information including hydraulic flood modelling data at both local and national scales and comparing these to known historical flood events.

The definitions for future significant flood risk are as follows:

- Causes internal flooding to a property used for residential or commercial purposes
- Poses, or could pose, a risk to human health
- Adversely affects the functioning of critical infrastructure
- Results in major disruption to the flow of traffic for 12 hours or more
- Causes harmful impacts to environmentally and socially important assets

B2.4.1 Flooding from Ordinary Watercourses (Fluvial)

There are known significant future flood risks identified from Ordinary Watercourses across Cheshire East. Flooding from ordinary watercourses can occur when main rivers and urban drainage systems back up. Particular attention should be given to urban areas of population and key infrastructure.

ACTION:

Develop the understanding of flood risk from ordinary watercourses through local investigations to identify watercourses and structures which could pose a significant risk. Include the outputs from these studies in database/GIS maps as part of the Council's suite of risk maps and asset management data.

B2.4.2 Flooding from Main River

The main source of fluvial flood risk through the Borough of Cheshire East has been identified as flooding from the River Bollin and the River Dane and their tributaries. The Environment Agency Catchment Flood Management Plan for the Weaver Gowy and the Mersey indicate possible numbers of properties at fluvial flood risk. Flooding from Main River is the prime responsibility of the Environment Agency.

Plan	River	Properties at risk of Fluvial flooding
Weaver Gowy Catchment Flood Management Plan	Dane	160
Mersey Catchment Flood Management Plan	Bollin	1000

ACTION:

Liaise and act in partnership with the Environment Agency to manage risks relating to fluvial flooding from main rivers where possible.

B2.4.3 Surface Water Flooding (Overland Flow)

The Environment Agency (EA) has produced a national assessment of surface water flood risk in the form of a national mapping dataset 'Areas Susceptible to Surface Water Flooding (AStSWF)'. This contains three susceptibility bandings for a rainfall event with a 1 in 200 chance of occurring. For the Preliminary Flood Risk Assessment (2011) Cheshire East has used the Environment Agency dataset 'Flood Map for Surface Water' (FMfSW). The FMfSW categories of 0.1m and 0.3m deep for the 1 in 200 year rainfall event were used because they were considered to best reflect the Council's practical working knowledge.

	Estimated number at risk of surface water flooding in Cheshire East from an event with a 1 in 200 annual chance	
Depth	**All Properties**	**Residential Properties**
0.1m	34,200	25,900
0.3m	15,776	11,431
Appendix 1, Figure F.3a and **Figure F.3b** show the Flood Map for Surface Water for the area of Cheshire East. This table summarises the number of properties potentially affected by surface water. This data has been analysed further to consider the clustering at a micro level.		

The EA undertook a national assessment of surface water flood risk in 2009. This identified forty 1km^2 national grid squares across the study areas which were above 'Flood Risk Thresholds'. This identified small clusters of blocks which largely could be seen in urban areas. The most significant cluster was located in Macclesfield. It should be noted that this national assessment is broadly indicative and not a precise study. These can be seen in **Appendix 1 Figure 4.** An initial review of this mapping suggests that there is a high potential risk from surface water flooding across the study area. The broad scale nature of the modelling used to produce Flood Map for Surface Water does not typically represent features such as culverts and narrow channels which are common in built-up areas.

Inspection of watercourses and topography within the Borough indicates that there are many channels and culverts running through Cheshire East. It can also be assumed due to the age of many of these assets and the extent of development in the Borough there may be significantly under capacity. These assets may not be capable of dealing with the flows generated in a 1 in 30 (3.3%) year annual probability flood event. The extents of surface water flooding could therefore be significantly greater than the national assessment suggests. It is also likely that areas affected by surface water flooding risk are complex and therefore an action to reduce surface water flood risk in one area could have both positive and negative impacts on other areas.

ACTION:

Undertake a study to identify culverts and narrow channels and assess how these may affect the surface water risk identified on the Flood Map for Surface Water. Determine whether more detailed studies are required to identify the risk at individual locations.

B2.4.4 Groundwater Flooding

Environment Agency national datasets provide an assessment of groundwater risk in terms of percentage likelihood in a given 1km national grid square. This is defined as the Areas Susceptible to Groundwater Flooding (AStGwF); the future risk is shown in **Appendix 1 Figure 2** illustrating the distribution of groundwater flooding. The flat areas in the Borough, which are susceptible to groundwater flooding, are at low risk according to the Environment Agency maps. The extent of groundwater flooding is likely to be limited and occupy areas similar to the fluvial floodplain. It is considered that the probability of flooding with significant harmful consequences is low.

ACTION:

Continue to work collaboratively with partner organisations such as the Environment Agency to improve knowledge and data on groundwater risks in known susceptible risk areas.

B2.4.5 Canal Flooding

Potential flood risk from canals was considered in the SFRA. The SFRA considered the type and location of canal assets and defined canal hazards zones for Congleton and Nantwich. The Canal and River Trust has completed a further study to better understand the future flood risk from canals. The outcomes of this study have been sent to Defra and discussions are currently being held about sharing the data. Cheshire East Council will continue working collaboratively with the Canal and River Trust across the Borough.

Historical canal flood records are included in **Appendix 1 Figure 6d.** These show there have been four canal breaching incidents and one incident of canal overtopping. This suggested that with an ageing navigation network and limited funds for maintenance there will be an increasing risk of failure due to deterioration and hence associated flooding.

ACTION:

Continue to work collaboratively with the Canal and River Trust across the Borough to identify the flood risk presented by the canal network and to agree actions to mitigate these risks.

B2.4.6 Reservoirs

The Flood and Water Management Act 2010 covers a number of areas that address the threat of flooding and water scarcity. The Act updates the Reservoirs Act 1975 and reflects a more risk-based approach to reservoir regulation:

- Reducing the capacity at which a reservoir will be regulated from 25,000m³ to 10,000m³;
- Ensuring that only those reservoirs assessed as a higher risk are subject to regulation;
- All undertakers with reservoirs over 10,000m³ must register their reservoirs with the Environment Agency;
- Inspecting Engineers must provide a report on their inspection within 6 months;
- All Undertakers must prepare a reservoir flood plan; and
- All incidents at reservoirs must be reported.

High risk reservoirs will be those reservoirs where human life would be endangered if there were an uncontrolled release of water from the reservoir. Owners of 'high risk' reservoirs will need to comply with all the requirements of the Act. Owners of reservoirs that are not designated as 'high risk' will still need to register, but will not need to comply with the inspection and supervision requirements of the Act. Registering the reservoirs means that in case of maintenance or flood risk incidents clear communication lines can be set up.

The Environment Agency has published maps showing the risk of flooding from reservoirs for all large reservoirs that it regulates under the Reservoirs Act 1975 (reservoirs that hold over 25,000 cubic metres of water). There are approximately 20 large reservoirs in the Borough. The Flood and Water Management Act 2010 covers many more bodies of water as the Act requires Reservoirs holding more than 10,000 m³ to be regulated. The number of reservoirs regulated in the Borough is anticipated to rise and hence increase the identified flood risk.

ACTION:

Liaise with the Environment Agency to determine the number of Reservoirs registered in Cheshire East.

- Identify how many of these are high risk;
- Determine if further actions are required:
- Identify if maintenance or capital works are required;
- Make any necessary changes to emergency plans; and
- Communicate risk to emergency responders.

B2.5 The Effects of Climate Change on Future Flood Risk

Over the last few years the frequency of flooding incidents reflecting unseasonable erratic weather patterns has increased across the area of Cheshire East. The LLFA's approach to flood risk management reflects the impact of climate change. There is clear scientific evidence that global climate change is happening. Greenhouse gas (GHG) levels in the atmosphere are likely to cause higher rainfall in future. If emissions follow a medium future scenario, UKCP09 projected changes by the 2050s relative to the recent past are:

Anticipated Effect of Climate Change

- Winter precipitation increase of around 14% (very likely to be between 4 and 28%)
- Precipitation on the wettest day in winter up by around 11% (very unlikely to be more than 25%)
- Relative sea level at Morecambe very likely to be up between 6 and 36cm from 1990 levels (not including extra potential rises from polar ice sheet loss)
- Peak river flows in a typical catchment likely to increase between 11 and 18%. Increase in rainfall is projected to be greater near the coast than inland.

Climate change can affect local flood risk in several ways. Impacts will depend on local conditions and vulnerability. Wetter winters and high intensity rain falling in wetter periods of the year may increase river flooding especially in steep, rapidly responding catchments. More intense rainfall causes more surface runoff, increasing localised flooding and erosion. In turn, this may increase pressure on drains, sewers and water quality. It appears that storm intensities in summer have increased in recent years. This has provided an indication of the type of conditions that might be expected in the future.

The National Planning Policy Framework (NPPF) sets out how the planning system should help minimise vulnerability and provide resilience to the impacts of climate change. NPPF and supporting planning practice guidance on Flood Risk and Coastal Change explain when and how flood risk assessments should be used. This includes demonstrating how flood risk will be managed now and over the development's lifetime, taking climate change into account.

On 19 February 2016 the climate change allowances that support NPPF were updated. The Environment Agency has produced this new advice at the request of the Government.

The updated climate change allowances are predictions of anticipated change for peak river flow by river basin district, peak rainfall intensity, sea level rise, offshore wind speed and extreme wave height. They are based on climate change projections and different scenarios of carbon dioxide emissions to the atmosphere. There are different allowances for different epochs or periods of time over the next century.

ACTION:

Prepare for climate change by understanding the current and future vulnerability to flooding, by developing plans for increased resilience and by building the capacity to adapt. Monitor the UKCIP climate change outputs and update the climate change mitigation output scenarios for the Borough. Regular review and adherence to these plans to achieving long-term, sustainable benefits. Continue to monitor and correlate weather patterns to increase our understanding.

B2.6 Improving Risk Understanding

Historically, flooding incidents in Cheshire East have been focused around built up areas where they are intersected by main rivers. Through the SWMP process it can also be seen that there are numerous areas around the Borough which are subject to local flooding. This is largely due to increased flows due to increased development, lack of maintenance activity and lack of understanding of the factors that contribute to flooding. By combining our local knowledge we believe that we can improve our understanding and provide a better local response to events by closer integration with the established monitoring and warning systems provided by the Environment Agency. We can better understand the risks by further interrogating existing data, undertaking further studies, liaising with other risk management authorities and following up reports of flooding.

ACTION:

Seek to develop improved links to live information. Continue to monitor flood events in association with Environment Agency and Met Office forecasts, main river gauge records, rainfall data and actual flood extents and compare to predictive mapping. This combination of analysis will over time:

- Refine risk models
- Monitor recorded flood incidents
- Target areas for intervention through capital works and maintenance
- Implement residual risk management measures
- Improve and localise community advice and response
- Ultimately reduce the risk of flooding for the Borough.

B2.7 Surface Water Management Plans

It was recommended in The Pitt Review that Surface Water Management Plans (SWMPs) should form the basis for management of all local flood risks. However the guidance also states that there may be alternative and more appropriate ways to manage flood risk in some areas depending on circumstances and the flood history.

In addition, area-wide modelling to identify the risk to individual and small clusters of properties would be inefficient, as the time and resources required to investigate the potential problems would be disproportionately high compared to the probable level of risk. Widespread modelling across the study area would not be able to precisely identify the level of risk or specific flooding mechanisms, unless it was carried out in considerable detail. A high level systematic approach was undertaken through the level 1 SWMP to identify the locations vulnerable to flooding. Through a risk based approach those locations requiring further investigation and more detailed assessment will be prioritised, the next steps identified and agreed as necessary.

Sites identified by SWMP Level 1

Risk Classification	No of sites at risk
High	3
Medium	24
Low	28

ACTION:

Carry out CCTV investigations and site surveys to increase knowledge and understanding to access the risk in greater detail. Identify which of these sites are likely to be shortlisted for future funding bids to the Environment Agency for detailed assessments including hydraulic modelling.

B3: Managing Local Flood Risk

Objective 3:

Manage flood risk and where appropriate reduce the risk and consequences of flooding through a range of activities and by effective management

B3.1 Flood Risk Management Measures

Cheshire East Council as the Lead Local Flood Risk Authority will coordinate and manage flood risk and where appropriate to reduce the risk through a range of activities, across internal departments and external partners.

	Measure	Contribution to Risk Management
1	Partnership Coordination	Community Resilience. Localism Act 2011.
2	Spatial Planning	Setting policy and future land use through the Local Plan.
3	Development Management	Assessing planning applications in respect of flood risk.
4	Sustainable Drainage Approval Body* (SAB)	Assessing and approving applications (subject to enactment of the relevant legislation).
5	Enforcement and Consenting	Enforcement and consenting in respect of ordinary watercourses. Development and enforcement of Cheshire East Byelaws.
6	Works Powers	Power to carry out works in respect of reducing flood risk.
7	Asset Management	Identifying and managing drainage assets. Works and operations.
8	Reservoir Management	Managing and Inspecting.
9	Designation of Features	Identifying critical assets and designation to protect.
10	Investigations and Flood Reporting	Undertaking investigations and resolution of flooding incidents. Maintaining register of flooding incidents and enquiries.
11	Communication, Community and Member Engagement	Ensuring the community is aware of flood risk and prepared. Communicate with Council Members regarding flooding issues.
12	Emergency Preparedness and Response	Preparing and responding to flood incidents. Working with Emergency Planning department to review and adapt Cheshire East Council's Multi Agency Flood Plan.
13	Delivery of Capital Works	Compile and support funding bids for flood alleviation schemes. Ensure delivery of works to provide local communities with a level of protection from flooding.

* At the time of writing, the SuDS aspects of the FWMA have not been fully implemented.

B3.2 Partnership Coordination

People who live and work in flood risk areas have a critical role in managing the risks they and their communities face. Cheshire East Council and other risk management authorities will support this role. This section identifies some of the key areas that the strategy will promote. The consultation with partners is summarised in **Appendix 4**. Key measures are described below.

B3.2.1 Responsibilities

Communities and individuals in areas at risk of flooding should take responsibility for understanding the risks and, where appropriate, take steps to protect themselves. A series of examples of how this can be achieved is listed below. All of these can be incorporated within a Community Action Plan that can be supported by the Emergency Planning department.

- signing up to the Environment Agency's flood warning system in the designated areas;
- preparing a flood plan for their household or business;
- creating or joining a local flood action group, and;
- taking steps to protect their property and others, particularly those more vulnerable groups and individuals.

B3.2.2 Partnering

Cheshire East will work with partners together to make community and individuals more aware of flood risks. The aim of this work is to help communities participate as far as possible in local flood risk management. To do this, the Council will work with partners to publish up to date information on risks and liaise with those groups who may be better placed to provide links with communities.

B3.2.3 Communities

Communities, led by Cheshire East will plan for the future and take appropriate steps to adapt to changing flood risks. Defra, the Environment Agency, the Council and others will support community adaptation by working with them to develop understanding of how they can adapt to change, defining the costs and benefits of different approaches and by providing practical approaches and examples that can be shared. In particular, these will focus on community adaptation planning and engagement and implementing long term multiple benefit, innovative adaptive solutions such as land use management change.

B3.2.4 Householders

Householders and businesses at risk of flooding should take the appropriate steps to better protect their properties through property-level resistance and resilience measures. Cheshire East will support this work by raising awareness and understanding and, in some cases, supporting wider take up of flood resistance and resilience measures to reduce damage to buildings.

B3.2.5 Insurance

Cheshire East will publicise the importance of insurance as a means of protection. Affordable and widely available flood insurance is a means of sharing the risk between individuals, businesses, and insurance companies. Flood risk has long been included as standard in most building and contents insurance policies. The Government and insurance industry both aim to support the wide availability of insurance beyond the expiry of the Statement of Principles in 2013 with the introduction of Flood Reinsurance, while recognising that policy terms are likely to reflect local risk, therefore this should take account of any actions taken at a property or community level to reduce it.

B3.2.6 Localism Act

There is a duty to cooperate in joint planning with other authorities under the Act on matter of sustainable development, land use and other significant impacts. In making decisions the priority given to any strategic issue will be dependent upon local circumstances.

B3.3 Spatial Planning

Spatial planning plays a key role in helping shape places to minimise vulnerability and provide resilience to flood risk, as well as contributing to reducing flood risk itself. Spatial planning in Cheshire East, with the exception of the area in the Peak District National Park, is the responsibility of Cheshire East Council as the Local Planning Authority (LPA). It therefore allows for close working arrangements with the Council's other statutory functions as Lead Local Flood Authority.

The Planning and Compulsory Purchase Act 2004, the Localism Act 2011 and accompanying regulations require LPAs to produce spatial plans in the form of Local Planning Frameworks. Together these documents will form the statutory development plans against which planning applications must be determined, unless material considerations indicate otherwise. Statutory development plans should reflect the Government's policies for sustainable development as promoted by the Department for Communities and Local Government.

The Cheshire East Local Plan is the statutory Development Plan for Cheshire East and is the basis for determining planning applications. A new Local Plan is being developed in three parts which will guide development up to 2030.
Cheshire East Council submitted its 'Local Plan Strategy' (LPS) to the Secretary of State in May 2014 for public examination. This is the first part of the new Cheshire East Local Plan. It sets strategic priorities for the development of the

area, along with planning policies and development sites to guide development up to 2030. The LPS is currently being examined by an independent Planning Inspector appointed by the Secretary of State. Examination hearing sessions were held in 2014 and 2015. Following these sessions, a number of changes were made to the Submitted LPS and the Council carried out full public consultation on the Revised LPS in March and April 2016. After the consultation, further hearing sessions were held later in 2016. After considering the issues raised through the Examination process, the Inspector issued his views on the further modifications needed to the LPS. The Proposed Main Modifications to the Revised LPS are considered necessary to make the Plan sound and capable of adoption. These are expected to be subject to consultation in early 2017 with the LPS being adopted by the Council in the summer of 2017.
Spatial planning creates a policy framework within which all those engaged in the planning process can actively contribute to a more sustainable approach to managing flood risk. This will provide opportunities to:

- Adopt a catchment-wide approach;
- Develop integrated sustainable developments, which deliver multiple benefits;
- Factor flood risk into planning decisions from the outset of the spatial planning process;
- Develop local authority, developer and community-led initiatives to reduce flood risk/enhance the environment;
- Ensure that both the direct/cumulative impacts of development on flood risk are acknowledged and mitigated;
- Ensure that these decisions fully consider the implications of climate change and provide greater clarity and certainty to developers regarding which sites are suitable for developments of different types.

In respect of flood risk the following documents will inform the Local Plan:

- Catchment Flood Management Plan (CFMP)
- Cheshire East Level 1 Strategic Flood Risk Assessment (SFRA) 2009
- Cheshire East Level 2 Strategic Flood Risk Assessment (SFRA) 2013
- Cheshire East Preliminary Flood Risk Assessment (PFRA) 2011
- National Planning Policy Framework (NPPF)

B3.3.1 Local Plan Policy

The following policies are included in the current Statutory Development Plan or are proposed within the Local Plan Strategy:

Current Local Plan Policy

- ENV 30: Drainage is the central policy
- ENV22: Cheshire East Canals: Seeks, Protection, Restoration
- GEN 1: Primacy of the Development Plan, Parts (v), (vi) and (vii)
- Strategic (Part 1), Policy S7: Sustainable Development / Part 2 Policies
- REC 7: Water Features seeks the protection of water features, from a recreational perspective

Cheshire East Local Plan Strategy Policy SE 13

- Part 4(vii) is also relevant as it seeks the efficient use of water
- Part 3(iii): Environmental Quality including the SFRA and SuDS aspects
- Flooding is addressed in the Core Strategy, principally by Strategic Objective
- Policy CP1 Ensuring Quality Development in Cheshire East is a specific policy
- O2.2: To mitigate the effects of, and minimise the impact of, development on climate change
- All PPSs (including PPS 25) have been superseded by the NPPF. Flooding is covered in Planning for Places
- Policy CQL 1 Part 5 requires new development to contribute to the expansion and/or improvement of green infrastructure

SFRAs and the appropriate Local Plan policies are important as they apply a sequential, risk-based approach to the location of development. The proposed Flooding and Drainage Supplementary Planning Document (SPD), as well as the Core Strategy, are going to be vital policy components.

ACTION:

Develop a Flooding and Drainage Supplementary Planning Document (SPD).

B3.3.2 Development and Flood Risk

The Environment Agency advises that LPAs and developers should carry out assessments of surface water flooding in line with Government planning policy detailed within the NPPF. Cheshire East, as LLFA, has reviewed, discussed, agreed and recorded with the Environment Agency, United Utilities and other interested parties what surface water flood data best represents local conditions. This is known as **locally agreed surface water information**. The Flood Map for Surface Water has been reviewed against a local scoping study, local historic data and local knowledge. This knowledge base will continue to develop through the newly established arrangements that will capture and record surface water flood information to validate any assumptions made.

The locally agreed surface water information will be taken into account in the preparation of Local Plans and may be material to decisions on individual planning applications. In land use planning locally agreed surface water flood risk information can be used to highlight where a more detailed study of surface water flooding may be necessary, for example, within a strategic flood risk assessment. The Environment Agency surface water flood maps are not appropriate to use as the sole evidence for any specific planning decisions without further supporting studies or evidence. Proving the model on the ground and other available data, such as locations of historic surface water flooding should be used alongside the Environment Agency surface water flood maps.

The locally agreed surface water flood risk information is most appropriate for use at this level of the development planning system where it will provide the greatest benefit in terms of the identification, management and avoidance of surface water flooding. The locally agreed surface water flood risk information will act as a starting point to highlight areas where the potential for surface water flooding needs particular assessment and review within Strategic Flood Risk Assessments and in Surface Water Management Plans (SWMPs). The output from these assessments can then be used to inform development allocations within the LDP and outline the requirements for site level flood risk assessments to be carried out by developers.

B3.3.3 Development Management

Cheshire East Council, as Local Planning Authority, has responsibility for regulating planned development. Through close working arrangements the Council's other statutory functions, such as Lead Local Flood Authority, Cheshire East can produce statutory development plans against which planning applications must be determined. Spatial planning policy creates a framework within which all those engaged in the planning process can actively contribute to a more sustainable approach to managing flood risk.

Sequential and Exceptions Test

Cheshire East will use the Sequential Test, as advised by the NPPF where applicable, in allocating sites for development, or determining planning applications. In using the sequential test, sites are "zoned" in order of preference according to the flood risk probability, identified by the SFRA. Appropriate land uses for each flood zone are also listed to provide guidance for LPAs when they are considering appropriate use of sites within each zone.

ACTION:

Strategic developments will be approached through planning the appropriate location for future development and adopting design principles that can contribute to reducing the risk of flooding, including:

- reference to the LLFA developments affecting ordinary watercourses;
- application of property and location specific flood protection measures;
- in liaison with the LLFA carry out enforcement in respect of unauthorised development;
- encouraging the application of SuDS techniques with new developments (subject to national legislation);and
- identifying river corridors and the natural flood plain for potential riverside flood storage and urban river corridors in built up areas.

In summary, the Preliminary Flood Risk Assessment (PFRA) along with the SFRA and Upper Mersey Estuary CFMP will inform the Local Development Framework (LDF). Development will be assessed against these. Strategic development will be approached through planning and development, appropriate design, situation and location of future development, all of which can contribute to reducing the risk of flooding.

Surface Water Flood Risk Maps and Land Use Planning

The Environment Agency's surface water flood maps give an indication of the broad areas likely to be at risk of surface water flooding. However, Environment Agency surface water flood maps are not suitable for identifying whether an individual property will flood. This is because the modelling only gives an indication of broad areas at risk, and because there is no information held on floor levels, construction characteristics or designs of properties. This would be required

along with other detailed information to be able to decide whether flooding of certain depth would enter into an individual property and cause damage.

The maps may be suitable for identifying where properties are in areas at risk of flooding for locations where surface water flooding is strongly influenced by topography. Each map can only give an indication of areas at risk from surface water flooding from a national assessment. They cannot provide detail on individual properties. Therefore, the information should not be interpreted as showing that the location of interested will or will not actually flood but only that it is in or not in an area shown at risk on the maps.

ACTION:

Review planning applications in line with the guidance document "Using Surface Water Flood Risk Information" published by the Environment Agency for use by Lead Local Flood Authorities and the findings from Surface Water Management Plans.

Those undertaking an assessment should satisfy themselves that flood risk from surface water flooding has been adequately managed in line with NPPF requirements. In all instances developers and planning officers are encouraged to consult with the Local Authority in their role as drainage authority. Further investigation into surface water flooding should to be undertaken where the site in question is within or immediately adjacent to an affected area or the site in question is outside an affected area but where planning policy/guidance dictates that an assessment of flood risk from all sources is required.

Further investigations should be carried out in line with the requirements of the Council in its role as the LLFA and would typically comprise a check of historic records in the first instance. If historic records of flooding exist then further consideration will be necessary to determine if more detailed assessment and modelling is required. For example, assessing how well local conditions experienced at the site (for example buildings and topography) compare with those modelled in the Environment Agency surface water flood maps

Appraising Risk for Allocating Sites for Development

The LPAs are required to do this by appraising risk, managing risk, reducing risk and using a partnership approach of these requirements. Appraising the risk is the key, and is to be undertaken by:

- Identifying land at risk,
- Defining the degree of risk of flooding from river, sea and other sources;
- Preparing Strategic Flood Risk Assessments (SFRAs) as freestanding assessments that contribute to the sustainability appraisals of Development Plan Documents (DPDs).

Local Policies

Paving of Private Driveways:

Amendments to the General Permitted Development Order 2008, stipulate that the paving over of driveways or gardens with non-permeable materials requires planning permission. Conversely, permeable paving techniques are now deemed as permitted development.

Verge Removal:

Cheshire East Council now resists requests for removal of roadside verges. A sequential exception test is applied. The Highway Authority encourages increased 'soft' areas when developing Section 38 Agreements.

Highway Gully Cleaning:

In response to increased surface water runoff and the outcomes of the PFRA, Cheshire East Council Highway Authority has introduced a new risk based approach to cleaning and repair of drainage assets.

Culverting:

Environment Agency policy is that no watercourse should be culverted unless there is an overriding need to do so. Cheshire East Council will adhere to this policy and to actively restore culverted channels to natural watercourses for which it is responsible for, as the LLFA. 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);
- 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).

A blockage in a culvert can be very difficult to remove and likely to result in a severe flood risk. For these reasons the provision of a screen at the entrance to the culvert is often considered. Such a screen reduces the risk of a blockage inside a culvert, but introduces a significant maintenance obligation which far exceeds the typical maintenance requirements of an open watercourse.

B3.4 Sustainable Drainage Systems (SuDS)

B3.4.1 Introducing SuDS

Many existing urban drainage systems can cause problems such as flooding, pollution or damage to the environment and are not proven to be sustainable in the long term. As an alternative to conventional piped means of managing surface water, the Council will promote the use of sustainable drainage systems or SuDS. SuDS are a range of techniques that aim to mimic the way rainfall drains within natural systems.

Section 27 Sustainable development

(1) In exercising a flood or coastal erosion risk management function, an authority listed in subsection (3) must aim to make a contribution towards the achievement of sustainable development.
Schedule 3 - "Sustainable drainage"

(2) "Sustainable drainage" means managing rainwater (including snow and other precipitation) with the aim of:
(a) reducing damage from flooding, (b) improving water quality, (c) protecting and improving the environment, (d) protecting health and safety, and (e) ensuring the stability and durability of drainage systems.

B3.4.2 SuDS Approval Body* (SAB)

The SuDS Approval Body (SAB) was originally envisaged to be an organisation within Cheshire East specifically established to deal with the design, approval and adoption of sustainable drainage systems within any development consisting of two or more properties. As the SAB Cheshire East would have been responsible for:

- Approving drainage systems for managing SuDS before construction begins;
- Producing design guidance documents and approval/ adoption procedures;
- Adopting and maintaining approved SuDS that serve more than one property, where the SuDS function/structure is built in accordance with approved detail; and
- Engaging with statutory consultees including sewerage undertakers, Environment Agency, Highways Authority and the Canal and River Trust

In addition the Secretary of State must publish national standards for the design, approval, construction and maintenance of SuDS. The Water Act 1991 has been amended to make the right to connect surface runoff to public sewers conditional upon the drainage system being approved by the LPA on the advice of the LLFA. Under the Water Framework Directive the UK must achieve a rating of "good" for all our watercourses by 2015.

As SuDS and site layouts are integrated it is envisaged that in Cheshire East the process will be Flood Risk Management and Planning led, with policies set through the planning core strategy and development approval through the development planning process. The following shows the resources within Cheshire which can be called upon to assist the LLFA and LPA:
.
* At the time of writing, the SuDS aspects of the FWMA will not be implemented.

SuDS Management:

- Flood Risk Management have expertise in SuDS
- Development Management are the first point of contact for developers and they would be consulted on SuDs as required
- Engineering Asset Management have expertise in adopting developments and in operational drainage management
- Environmental and biodiversity expertise is available within the Environment Team but particularly the Merseyside Environmental Advisory Service (MEAS)

There are many types of SuDs that can be incorporated into urban drainage systems and various publications on the subject. The following shows some recognised publications that provide guidance on SuDS.

SuDS Guidance:

- CIRIA C365 Designing for Exceedance in Urban Drainage – Good Practice
- CIRIA C753 The SuDS Manual
- Anglian Water Services Ltd. Sustainable Drainage Systems Adoptions Manual
- SCOTS SuDS for Roads/CIRIA C753 SuDS Manual/CIRIA 168 Culvert Design

B3.4.3 SAB Commencement

There are four draft statutory instruments that deal with approval and adoption; enforcement of the requirements for SAB approval; procedural matters relating to approval and adoption; and appeals against SAB decisions. The requirement for a SAB is still a prospective part of the Flood and Water Management Act (2010). However, changes in other related legislation means that the LLFA is a statutory consultee to the LPA and the SAB is no longer required.

B3.5 Enforcement and Consenting

Flood and Water Management Act: Amendments to the Land Drainage Act 1991

Land Drainage Act 1991: Section 23, Section 24 and Section 25*

* Details of this legislation are provided in **Appendix 11**

'Regulation' is the management of activities undertaken on watercourses. It involves giving consent for acceptable work to be carried out and taking enforcement action if work is unacceptable. Consenting is by virtue of an amendment to sections 23, 24 and 25 of the Land Drainage Act 1991 and by virtue of Schedule 2 paragraph 32 (6) of the Flood and Water Management Act 2010, which changes consenting from the EA to an LLFA for ordinary watercourses. Below are listings of new powers amending consenting and enforcement within Flood Risk Regulations and the Flood and Water Management Act 2010.

This is very important as work that is carried out without consent has the potential to increase flood risk to people and property, including those unconnected with the works. Activities on ordinary watercourses that require consent are those likely to cause an obstruction to flow or restrict storage and include culverting, bridges, weirs etc. Cheshire East Council will develop a Permit to Work process. These powers will be used in deciding whether to permit works by third parties that may affect water flows on ordinary watercourses. Cheshire East Council is also required to ensure that all works on watercourses it is responsible for have the appropriate consent and that the consented works are constructed according to the agreed design.

Section 23 Land Drainage Act 1991 – No person shall:

(a) Erect any mill dam, weir or other like obstruction to the flow of any ordinary watercourse or raise or otherwise alter any such obstruction: or

(b) erect any culvert that would be likely to affect flow of any ordinary watercourse or alter any culvert in a manner that would be likely to affect any such flow, without the consent in writing of the drainage board concerned.

Section 23 also includes references to the application fee (£50), that consent won't be unreasonably withheld, the two-month determination period, arbitration and exemptions.

Removal of Environment Agency supervision

Schedule 2 paragraph 30, repeals section 17 of the Land Drainage Act so removing the direct supervisory capacity of the Environment Agency over the local authorities in relation to the carrying out of their flood risk management and drainage works powers. Instead, local authorities are required to exercise their powers in accordance with the local FRM strategy.

New consenting role

Section 23 Land Drainage Act 1991 prohibits the construction of certain kinds of obstructions in ordinary watercourses without the prior consent of the drainage board concerned. Schedule 2 paragraph 32 (6) amends the meaning of the reference to "drainage board concerned" used in sections 23 and 24 so that the Environment Agencies role as a drainage board for ordinary watercourses outside an internal drainage district is taken over by lead local flood authorities.

Power to require works for maintaining flow

Section 25 of the Land Drainage Act provides powers to require works for maintaining the flow of a watercourse. Schedule 2 paragraph 33 amends this section to give the powers of the Environment Agency to Lead Local Flood Authorities (Section 26, is repealed by Schedule 2 paragraph 34 as it is no longer necessary given the changes to section 25).

B3.5.1 Procedure

Formal consents will be approved and issued by the Flood Risk Management department. Upon receipt of a complete application form and fee, the proposed works will be assessed to determine suitability and effected flood risk for the area. The Environment Agency will be consulted to utilise, adapt existing systems and keep a consent register.

ACTION:

The Flood Risk Management department of Cheshire East Council will approve and issue formal consents.

The Environment Agency will retain an overview role. Lead Local Flood Authorities must consult the Environment Agency when they are consenting work that they are themselves proposing. This is to minimise the potential for conflict of interest. The Environment Agency may also issue guidance on how the consenting function should be exercised. Currently, the Environment Agency does not intend to issue formal guidance but has produced an information pack to assist LLFAs taking over this function.

B3.5.2 Local Byelaws

Cheshire East will be introducing a set Land Drainage Byelaws based on the Defra recommended template. The purpose of these are to apply detail to the Enforcement and Consenting powers to ensure the basic powers within the Land Drainage Act 1991 are strengthened and provide effective flood risk action at the local level. Cheshire East has developed its own Land Drainage Byelaws.

ACTION:

Enact and Publish a set of Land Drainage Byelaws for Cheshire East Council

B3.6 Power to Carry out Works

Schedule 2 Section 32

(6) For subsection (8)(b) substitute –

"(b) in relation to a watercourse in an area outside an internal drainage district, are references to the lead local flood authority for the area."

Permissive works powers are extended to ordinary watercourses by the Act as amended under schedule 2 paragraph 32 (6) to allow for work to be undertaken that reduces flooding. To undertake works, on land owned by others, facilitating powers (powers of entry, compensation and compulsory purchase) are provided.

Powers of entry are needed to get access to Land. Compensation Powers are needed if damage occurs when carrying out works, for example it may be necessary to move heavy equipment across a garden damaging the lawn and flowerbeds. Sometimes it may be necessary for the risk management authority to own the land in order to carry out and maintain works. If the land cannot be bought by agreement, a compulsory purchase order could be applied as a last resort.

Land Drainage Act 1991. Section 64.

Powers of entry for internal drainage boards and local authorities

B3.7 Land Acquisition and Compulsory Purchase Powers

Section 62 of the Land Drainage Act 1991

Powers to acquire and dispose of land, including compulsorily

Powers to acquire and dispose of land, including compulsorily, are provided at section 62 of the Land Drainage Act 1991. These powers are not altered by FWMA and the powers in section 62 are available for use with the new flood risk management works powers, as section 14A is inserted into the Land Drainage Act 1991. Where such powers may be needed, for example in section 39, they are provided for within the Act. Section 39 (12) requires the Minister of State to apply compensation provisions, together with powers of entry and compulsory purchase provisions, to the incidental flooding or coastal erosion powers, section 39 of the Act. The Minister must use the Water Resources Act 1991 provisions but may amend them. The Water Resources Act provisions are slightly different from those found in the Land Drainage Act.

B3.8 Asset Management

B3.8.1 Asset Register

Section 21 Lead local authorities: duty to maintain a register

(1) A lead local flood authority must establish and maintain -
(a) A register of structures or features which, in the opinion of the authority, are likely to have a significant effect on a flood risk in its area, and
(b) A record of information about each of those structures or features, including information about ownership and state of repair.
(3) The lead local flood authority must arrange for the register to be available for inspection at all reasonable times.

Creation of the asset register is nearly in completion, with continual development and maintenance expected. Cheshire East Council will initially make the register available by appointment at any reasonable time, but in the longer term the aspiration is to make this available on the Council's website. Cheshire East keeps a register of "features" which are likely to have a significant effect on flood risk in its area and which conforms to the following criteria:

Criteria for Cheshire East Register of Features

- Listed on the Asset Register.
- Posed, or could have posed, a risk to human health.
- Resulted in major disruption to the flow of traffic for 12 hours or more.
- Adversely affected the functioning of critical infrastructure.
- Caused internal flooding to a property used for residential or commercial purposes.
- Caused harmful impacts to environmentally and socially important assets.

The register will include information about ownership, state of repair and where appropriate, maintenance regimes. These features will be either a structure, natural or man-made feature of the environment, e.g. sluices, channels, culverts, walls, embankments, bridges, highway gullies, SuDs systems, grillages and screens. By collating information and mapping flood risk assets, the Council will eventually be able to:

ACTION:

- Develop informed maintenance regimes with partners where appropriate, which can take account of assets important for managing flood risk, particularly in high-risk areas.
- Establish where the entire surface water drainage and watercourse systems occur, allowing for quicker identification of the responsible authority in incidences of flooding.
- Produce and publish a maintenance schedule for the assets as well as providing guidance to riparian owners as to how they should maintain their assets.

Collating all asset information is an enormous undertaking that would require considerable resources. It is therefore envisaged that initial data collection exercises to populate the register will be risk-based and related to the requirement to record structures, which have a significant effect on flood risk management and are not part of the main river system. It will therefore commence with the information contained in the Preliminary Flood Risk Assessment (PFRA) and the desk study already undertaken to identify culverts of high risk.

The registers will therefore be populated with those structures or features, which are most significant first then related to ordinary watercourses and surface water flooding. It is intended that the information contained within the registers will build up over time as flood incidents are dealt with, investigations are conducted, maintenance works are carried out and third party developments are adopted. A substantial amount of information is readily available from a variety of sources.

Information sources within Cheshire East

- All the highway network road gullies
- Records held by the Council's Bridges and Structures Section
- Collected field information held by the Council's Drainage Engineers
- Contemporary records held by the Council's Parks and Open Spaces Manager
- A register of watercourses and drainage assets created by the Council
- A study of potential culvert locations

The collation and entering of this information onto the register or digitising hand drawn maps was the primary task. The detail in records is proportionate and related to how the register and record will be used to support the wider LLFA role. Where existing good practice approaches to recording state of repair or other information are available, these will be recorded and the record will be developed over time as inspections or investigations are undertaken. The register will utilise templates supplied by Defra and substantial liaison will be made with Environment Agency Asset Database. Records are held on GIS and on the Council's asset management system. Inspections will be undertaken following the established Environment Agency assessment template.

Evaluation of the optimum software and hardware for asset recording in relation to flood management is in progress with investment in additional asset software licenses, field data recording hardware and system training. Main River assets are recorded by the Environment Agency; however it is important that Cheshire East local system has a relationship with the Environment Agency's National Flood and Coastal Defence Database (NFCDD). This contains details of Main River and Non Main River and coastal flood risk assets, including current inspected condition. This data is continuously updated following review or inspection of assets.

This information was utilised in developing the Cheshire East register, which includes main river assets (particularly where the Council is riparian land owner) for completeness in the efficient management of investigations. The Environment Agency has undertaken a project called Creating Asset Management Capacity (CAMC) to replace NFCDD with an upgraded and improved database (AIMS).

B3.8.2 Asset Maintenance and Draft Works Programme

The following sets out the asset maintenance responsibilities

Responsibility	Main River	Ordinary Watercourse	Surface Water	Groundwater
Environment Agency	Overall management of main river network and flood warning service. Enforcement in respect of riparian owners.			
Cheshire East Council	Inspection and maintenance of assets on Council owned land.	Maintenance of assets on Council owned land. Advice to land owners on management.	Maintenance of highway drainage and watercourses on Council owned land.	Management on Council owned land.
		Permissive intervention for maintenance of riparian owned assets as deemed appropriate.	Advice or enforcement of private land owners causing flood discharge.	Advice to riparian land owners.
		Enforcement on respect of riparian owners where integrity of watercourse is compromised.	Permissive intervention for maintenance of riparian owned assets as deemed appropriate.	
United Utilities			Maintenance of adopted surface water sewers and combined sewers.	
Riparian Land Owners	Maintenance of private assets to prevent flooding. Responsibility to accept flow, except groundwater.	Maintenance of private assets to prevent flooding. Responsibility to accept flow.	Preventing of surface water discharge from private land.	Management on privately owned land.

The approach to developing capital works and revenue programmes in respect of reducing flood risk will therefore be undertaken as follows:

- Work closely with the Environment Agency to identify, fund and implement schemes in regard to fluvial flooding from main river;
- Consider managing residual risk where it is not economically feasible to undertake works through property resilience and flood warning site telemetry ;
- Identify as far as possible responsible riparian owners;
- Consider long term sustainable solutions encompassing leisure and habitat creation, and;
- Develop risk based maintenance programmes proportionate to financial resources.

See **Appendix 8** for further details

B3.9 Designation of Features

Section 30 Designation of features
Schedule 1 (designation of features) shall have effect.

Effect of designation
5(1) A person may not alter, remove or replace a designated structure or feature without the consent of the responsible authority. (2) A designation is a local land charge.

Designation prohibits a person from altering, removing, or replacing a designated structure or feature without the permission of the LLFA. If a person contravenes this requirement, the LLFA may take enforcement action. Once a feature is designated, the owner must seek consent from the authority to alter, remove, or replace it.

An individual may appeal against a designation notice, refusal of consent, conditions placed on consent or an enforcement notice. In addition to garden walls and other structures, many sustainable drainage systems (SuDS) may be designated and will be issued with a Provisional Designation Notice Procedure. The provisional designation notice must provide important information about the provisional designation.

As a minimum the notice will set out:

- The feature in question;
- Why the feature is being provisionally designated;
- The period in which representations may be made;
- The date from which the feature is provisionally designated, and;
- How the owner of the feature may make representation to the LLFA in respect of the notice.

During the period of notice, the owner has the right to make representations to the designating authority on the provisional designation, which the authority must consider before confirming a designation by means of a designation notice. The LLFA may cancel a designation (including a provisional designation). It may do so at the owner's request or where it thinks it appropriate for another reason, for example if a new flood defence system has come on line that negates the need for the designation.

The owner will be able to maintain the feature if they wish provided that they are maintaining it in the state it was when it was designated. An owner may appeal if their request for a cancellation is denied. There is no obligation on the riparian landowner to maintain a designated feature. For this reason Cheshire East will act with due diligence before designating any such features as the maintenance liability could fall to the Council. Consideration for designation of any critical features will follow as the Asset Register develops.

B3.10 Investigations and Flood Reporting

Section 19 - Local Authorities: investigations

1) On becoming aware of a flood in its area, a Lead Local Flood Authority must, to the extent that it considers it necessary or appropriate, investigate
   (a) Which risk management authorities have relevant flood risk management functions, and
   (b) Whether each of these risks management authorities has exercised, or is proposing to exercise, those functions in response to the flood.

2) Where an authority carries out an investigation under subsection (1) it must publish the results of its investigation, and notify any relevant risk management authorities.

The Cheshire East Investigation Policy is divided into three main sections:

Phase A	Incident Capture	Where the incident is reported by the public/business and logged.
Phase B	Post Incident Review	Where the significance of the incident is assessed and the requirements for investigating the incident are determined.
Phase C	Formal Investigation	Where an investigation is undertaken if considered necessary.

B3.10.1 Flood Incident Investigation and Reporting Policy

Cheshire East will, on becoming aware of a flooding incident in its area, carry out a Post Incident Review to determine the consequences of the flooding incident. The Post Incident Review will determine the likely cause of the flooding and what was flooded during the incident. If a flood event is deemed to have had a significant consequence, then a Formal Investigation of the flooding incident will be undertaken.

A flood event with significant consequences is one that has had, or could have had if action had not been taken, one or more of the following impacts:

- Resulted in major disruption to the flow of traffic for 12 hours or more.
- Posed, or could have posed, a risk to human health.
- Adversely affected the functioning of critical infrastructure.
- Caused harmful impacts to environmentally and socially important assets.
- Caused internal flooding to a property used for residential or commercial purposes.

B3.10.2 Local Investigation Targets

Cheshire East has identified the following timescales as targets which it will aim to achieve in responding to report of local flooding.

Activity	Timescale*
Ascertaining responsibility	1 week following event
Agree with responsible actions and timescales	One month
Final report	Two months

*Timescales are subject to the scale of incidents being investigated and available resources.

B3.10.3 Reporting

All instances of flooding will be investigated by the Council and recorded internally. A published Formal Investigation will be initiated for every flood event captured and reported to the Flood Officer, which meets the above criteria. Therefore, it is essential that the threshold for triggering a Formal Investigation should recognise the actual significance of the flooding incident with any repeated events also recorded but not published. All events will be reviewed at the quarterly External Partner Group Meetings Continual mapping of flood incidents and the results of investigation will inform future work programmes and maintenance regimes.

B3.11 Communications and Public Engagement

B3.11.1 Communications Objectives

Group	Internal Strategic Group	External Partner Group	External Sub Regional Flood Task group Cheshire	External Sub Regional Flood Task group Merseyside	Consents	Sustainable Drainage Approval SAB
Meeting Frequency	**Quarterly**	**Quarterly**	**Monthly**	**Monthly**	**By Referral**	**TBA**
Remit	To provide a forum to share information on flood risk issues, planning liaison and development between internal partners.	To provide a forum to share information on flood risk issues and current projects between external partners within the Council's area.	To share knowledge between Local Authorities and develop partnership working arrangements to deliver efficiency savings.	To share knowledge between Local Authorities and develop partnership working arrangements to deliver efficiency savings.	To approve applications.	To approve applications, monitor process adopt and maintain. The LLFA is a statutory consultee to the LPA and the SAB is no longer required.
Lead Flood Officer	√	√	√	√	√	√
Asset Manager	√	√	√	√	√	√
GIS Coordinator	√	√	√	√		√
Operations Lead	√	√				
Civic and Open Spaces Manager	√					
Development Plan Manager	√					
Development Control Manager	√				√	√
Building Control Manager	√					√
Environment Team Leader	√	√				√
Emergency Planning	√					
United Utilities		√				Consultee if connected to public sewer.
Environment Agency		√	√	√		
Warrington Council			√			
Halton Council			√			
Cheshire East Council			√			
Cheshire West & Cheshire			√			
St. Helens Council			√			

Communications are based around internal partners, external partners and our community. The purpose of the communications and engagement for the LFRM is to:

- Ensure understanding of the roles and responsibilities of the flood risk partners (Cheshire East Council, EA, UU);
- Manage expectations and be clear about what we can and cannot achieve;
- Build a greater awareness of flood risk and ownership of the problem at a local level;
- Generate a culture of personal responsibility for being prepared for flooding, and;
- Coordinate with the Council's Emergency Plan.

ACTION:

Develop a Communications and Engagement Plan for Cheshire Local Flood Risk Management Strategy

B3.11.2 Internal and External Flood Risk Management Coordination

The above objectives have been set to guide our communications within our community and with our stakeholders. The following shows the cross references between the flood management working groups and external partner organisations.

B3.11.3 External Community Communications

The following objectives have been set to guide our communications with our community and stakeholders:

- Areas that may have been identified as potentially at risk of surface water flooding.
- Managing risks together - we can provide practical solutions but there are ways the community can help, too.
- Community Resilience initiatives with Emergency Planning department.

ACTION:

Undertake external consultation on the Draft Local Flood Risk Management Strategy and the Strategic Environmental Assessment.

B3.11.4 Key messages

The key message that Cheshire East needs to be communicate as we engage with the public are as follows:

Communication Objectives	Key messages
Listen to stakeholder and community concerns and build long term relationships	➢ To listen to and understand people's issues and concerns. ➢ To provide responses to concerns. ➢ To build long term relationships with stakeholders and communities.
Educate, explain and ensure understanding	➢ To make people aware of the flood risk areas. ➢ To help people understand and react to the level of risk by being prepared for flood events. ➢ To be honest and show people the long term risks. ➢ To explain what LFRM is and how the work we are doing sits alongside other flood management policies and plans in the area. ➢ To educate and inform residents of the solutions for best managing flood risk. ➢ To keep stakeholders and communities updated through regular communication to eliminate surprises.
Manage expectations	➢ To make stakeholders and communities aware of the limits (what we can and cannot do). ➢ To make clear how people can meaningfully participate in the process and how we will use that information.
Encourage involvement and participation	➢ To stimulate public debate on issues around providing sustainable defences. ➢ To encourage participation in engagement events from all stakeholders and interested parties. ➢ To encourage stakeholder 'buy-in' and public support for our recommended management options and to avoid adverse reactions ➢ To engender ownership of the levels of flood risk and the selected management options. ➢ Provide feedback at appropriate stages to demonstrate how we have taken or not taken views on board with explanations.

B3.11.5 Consultation - Stakeholder identification

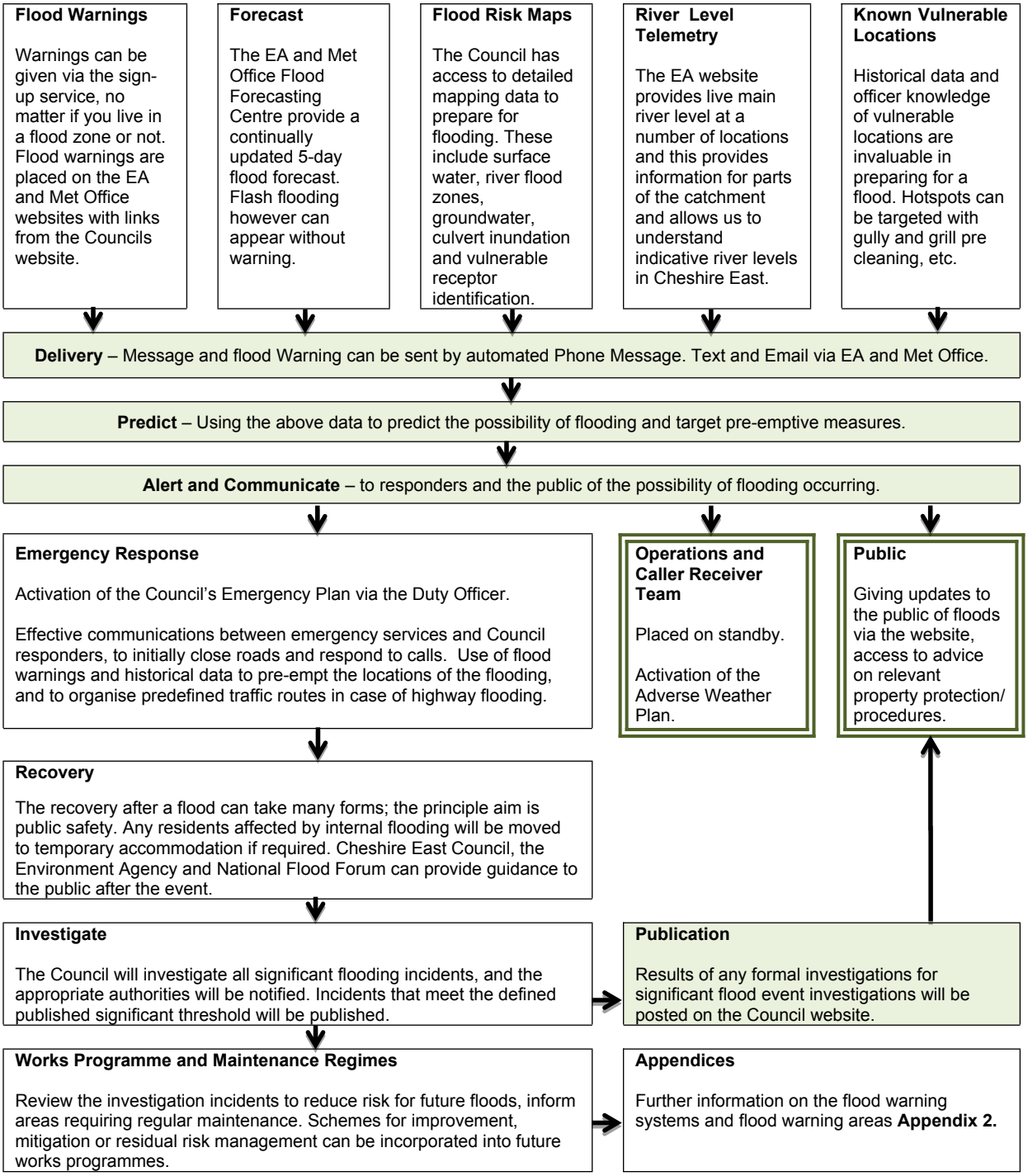
Potential Consultees have been identified and grouped as follows

Consultation Group	Consultees
Local Authorities and Partners	➢ Cheshire West and Chester Council ➢ Warrington Borough Council ➢ Halton Borough Council ➢ United Utilities ➢ Environment Agency ➢ Canal and River Trust
Political stakeholders	➢ MPs and MEPs ➢ Portfolio heads ➢ Ward members ➢ Parish councillors ➢ Neighbouring authorities
Transport and infrastructure	➢ Highways Agency ➢ Planning ➢ Other utility companies - i.e. Gas, Electricity and Telecommunications ➢ Transport operators
Environmental stakeholders	➢ Natural England ➢ MEAS ➢ RSPB ➢ NFU
Emergency services	➢ Fire service ➢ All other blue light services ➢ Police Community Support Officers ➢ Resilience forum
Business and industry	➢ Cheshire East Chamber ➢ Local businesses ➢ Business forums ➢ Employees ➢ Landowners where known
Communities and individuals	➢ Resident association groups ➢ Faith centres ➢ Doctors and community services ➢ Landlords and housing associations ➢ Recreation groups - Friends of Parks, Cycling groups, Ramblers Association, etc. ➢ Local flood resilience groups ➢ Hospitals ➢ Schools ➢ Local press ➢ CEN ➢ CVS ➢ Anglers ➢ SCARS

B3.12 Preparedness and Emergency Response

B3.12.1 Preparedness

Flooding is a part of nature. It is neither technically feasible nor economically affordable to prevent all properties from flooding. Cheshire East Council's aim is to reduce flood risk and minimise the harm caused by flooding. A risk-based approach is followed to achieve the best results possible using the budget and resources available. Work will continue to reduce both the likelihood of flooding and the impacts of a flood when it happens. Informing people a flood is about to happen is vital, as it gives them time to prepare. People in risk areas are encouraged to make a flood plan, so that they are ready when the warning comes. The Council prepares for potential flood emergencies as follows:



B3.12.2 Responding

The Civil Contingencies Act 2004 is one of the most relevant pieces of legislation in relation to emergency planning for flooding. It formalises a number of duties on Local Authorities, the emergency services and other organisations involved in responding to any emergency. Amongst these are contingency planning and risk assessment for emergencies at the local level, including flooding.

Civil Contingencies Act 2004

Places response duties on statutory authorities and services for flood events.

The Environment Agency is the Lead Responder for provision of flood warnings and information to the public, However, all Category One responders have a role to play in communicating to the public and will either lead or play a significant part at

some stage in a flood event, e.g. Police (public safety announcements and information in the consequent management phase), the Council (recovery phase), etc.

The principal method of warning the public of flood risk in Cheshire East is via the Environment Agency's Flood Line Warnings Direct system, and messages that the EA issues via local media. It is the property owner's responsibility under the law to protect their own property from flooding. However the EA, Cheshire East Council and the Emergency services where possible will offer assistance in the event of a flood. A summary of warning types is included in **Appendix 2.**

Emergency Plans allow all responding parties to work together on an agreed coordinated response to flooding. LRFAs bring together Category 1 and 2 responders within a local police area for the purpose of cooperation in fulfilling their duties under the Civil Contingencies Act.

Cheshire East, the emergency services and other agencies have worked closely to develop emergency response arrangements for any incidents that arise. Through Integrated Emergency Management they will develop flexible plans that will enable all responding organisations to deal with a major (Criteria 1: Risk to Life) or serious incident (Criteria 2: Widespread Flooding) at any time. Details can be found at http://www.cheshireeast.gov.uk/environment/community_safety/emergency_planning/emergency_planning.aspx

Criteria 1: Risk to Life	**Criteria 2: Widespread Flooding**
Significant risk to life caused by: ➢ deep and fast flowing water (e.g. caused by significant overtopping of defences or sudden onset flooding from dam/defence failure); ➢ rapid onset of flooding; ➢ presence of debris in the water that could cause death or injury; ➢ potential/observed collapse of buildings/ structures; ➢ the vulnerability of the population or their surroundings (e.g. deep/fast flowing water through a caravan park).	Significant disruption to communities: ➢ likely to affect whole community; ➢ community isolated by floodwaters with no obvious means of escape; ➢ critical resources/infrastructure for communities affected (e.g. no access to food, water, electricity); ➢ emergency services and authorities unable to cope with large volumes of evacuees and rest centres at full capacity; ➢ mutual aid/military support necessary or called upon.

Cheshire East Council has an Emergency Plan that revolves around a single point contact number; it has been designed to enable the Council to:

- Receive notification of emergency incidents via 24/7 contact facility;
- Respond to initial requests for assistance via the Duty Officer mechanism;
- Activate and facilitate the Emergency Headquarters and the Crisis Management Team for direct incident response.

ACTION:

The Council will respond and advise on the following:

- Surface water, groundwater flooding, flooding from Non-Main Rivers and coordinate the response with other Flood Management Authorities for main river;
- Work with the other Category 1 and 2 responders as part of the multi-agency response to floods;
- Coordinate emergency support from the voluntary sector;
- Liaise with Government departments and with essential service providers;
- Manage the local transport and traffic networks initially on safety grounds followed by signing and diversionary routes;
- Mobilise trained emergency social workers and emergency assistance;
- Deal with environmental health issues, such as contamination and pollution, and;
- Coordinate the recovery process.

If serious flooding involves people having to be evacuated, the Council may be able to offer temporary shelter in the form of Rest Centres where basic practical support can be provided such as refreshments, access to information and other support services where available. Emergency Services (Fire, Police, Ambulance and the Army) will help to evacuate people who are stranded or in danger. Where required, these bodies will also provide medical assistance and emergency lifesaving treatment.

It is important to understand that although these bodies can assist at the time of flooding, they are not required by law to protect your home or other properties from flooding. That responsibility rests with the property holder.

B3.12.3 Communications during an Emergency

During a pending or ongoing emergency communications are vital. This is an area that will be continually refined as forecasting techniques and information technology develops particularly in the use of social media networks. As a source of information the Council's web pages have proved the most effective and accessed media as a source of information at times of flooding. Information will therefore be published on a regular basis as well as through traditional news media channels.

When appropriate, the Council's network of highway variable message sign will be used to inform of road closures. The Council will continue to work with its partners at the Environment Agency to raise awareness of the flood warning service in the designated high-risk zones. All partners are committed to continually improving our joint capacity to predict and respond.

B3.12.4 Cheshire East Flood Mitigation Policy

The Council recognises that the primary responsibility for protecting property from the risk of flooding rests with the property owner. It is also aware of the considerable efforts made by the Environment Agency to notify property owners in flood risk areas of the risks they face and encourage them to plan their own arrangements to protect themselves and their properties.

The Council supports this approach and urges those living within areas identified as being at risk from flooding to follow the advice of the Environment Agency. The Council is concerned that, in the event of the threat of flooding to a large number of properties in the Borough, it may not have the resources to protect every property and that priorities will have to be made. This could inevitably lead to some flooding to properties that, with some pre planned preventative measures by the occupant, could have been avoided or minimised.

However, as a responsible authority, the Council recognises that the level of individual preparedness will vary enormously and it is prudent to plan for some additional support to the local community. With this in mind the Council has developed the following policy:

In the event of deteriorating weather leading to the issuing of severe weather warning alerts that could potentially affect any part of the Cheshire East administrative area, Council Officers will monitor the threat.

Risk assessments will be undertaken and regularly updated. These assessments could be wide area or site specific. They could include information obtained from site visits by Council Officers or other Professional Partners. The Council may make sandbags available if the Council's risk assessment for a defined area identifies the use of sandbags so as to minimise or mitigate the risk of flooding to residential, utility or commercial properties.

Council staff will assess the flood risk and identify where the use of sandbags is appropriate. Subject to availability the Council may make sandbags available. The Council will assist those who do not have the physical ability to use sandbags providing that there is sufficient available manpower. Refer to the Flood Mitigation Policy, Appendix 13.

The allocation of sandbags to individuals will depend upon a number of factors including the total number of sandbags available, an assessment of the viability of protecting the particular property with sandbags, demands from other emergency flood defence measures involving the use of sandbags that would protect a greater number of properties. The need to protect infrastructure assets e.g. Roads, Energy Distribution Sites, Communication Network Sites, Hospitals and the Council's own Public Buildings etc. are also likely to make demands on the Council's limited resources.

Occupants of properties where protection by sandbags is assessed as viable but lack physical ability e.g. elderly or infirm may, subject to availability of manpower and the assessed priorities at the time, be provided with assistance from the Council.

Road closures and disruption to the road network can impact on the Council`s ability to distribute sandbags. Flash flooding can occur in an overwhelming manner and recede quickly. In these circumstances, it is impossible to respond in the timeframe of the event.

It must be emphasised that residents of Cheshire East who live in identified flood risk areas should not rely upon the Council to respond to a threat of flooding to their property but should have their own flood protection plan in place.

B4: Actions and Interventions to Reduce Flood Risk

Objective 4:

Develop actions and interventions to reduce flood risk where appropriate.

B4.1 Overview

The Council believes it is important to use every approach available to manage risk and this strategy reflects this thinking throughout from prevention to intervention. In considering interventions and works the emphasis will be on supporting individuals, businesses, and communities.

The Council will work with a wide range of partner organisations and communities so that where appropriate it can identify sustainable measures to reduce the risk of flooding. Sustainable infrastructure solutions will be employed catchment wide to maximise community or environmental benefits. Where appropriate, a range of opportunities should be identified, when added together, provide a significant environmental improvement. This could range from better management of current infrastructure, such as regular blockage removal from river channels, to adaption of small areas of land along a river valley, to hold flood water.

The main emphasis will be on managing the social and economic elements of urban areas. Flood defences have been provided in a piecemeal way in many urban areas. A key challenge is to work with partners to improve standards where failures are occurring and provide complementary flood warning arrangements.

In rural areas the emphasis will be on working with natural processes and promoting biodiversity. This may allow undeveloped flood plains to be used to store water and reduce peak flows downstream. During 2012 complete saturation of rural land contributed significantly to repeat flooding in lower areas of land. Any increase in floodplain may reduce this type of flooding in the future.

The approach to developing maintenance and intervention measures in respect of reducing flood risk will therefore be undertaken as follows:

ACTION:

- Work closely with the Environment Agency to identify, fund and implement schemes in regard to fluvial flooding from Main River.
- Consider managing residual risk where it is not economically feasible to undertake works through property resilience and flood warning site telemetry.
- Identify as far as possible responsible riparian owners.
- Consider long term sustainable solutions encompassing leisure and habitat creation.
- Develop risk based maintenance programmes to maximise reducing financial resources.
- Consider if the Environment Agency and United Utilities have any flood risk management programmes, in which partnership working could be addressed in joining up schemes, works programmes and funding.

B4.2. Works to Mitigate or Reduce Flood Risk

To date, the flooding records indicate that flood events are mostly the result of Main Rivers overtopping. In these cases the Environment Agency is the Lead Authority. The degree of intervention by the EA is based on flood risk to property. In Cheshire East, it is often highways that are affected causing economic damage. Cheshire East will continue to work closely with the EA especially in seeking funding where the cost benefit is low when taken on a national basis. See section B4.5.

B4.3 Maintenance

Maintaining surface water assets within the highway is undertaken to relevant service standards by Cheshire East Council as the Highways Authority. The maintenance of assets other than the highway gullies, such as ordinary watercourses and ditches is often poor where local land owners are responsible especially when culverting has taken place. Dumping of waste is problematic and causes blockages and flooding. In many cases the location of assets is unknown. Management of these assets requires significant development. This will commence with locating features, inspecting and establishing ownership. Risk based regimes can then be established or in the extreme situation enforcement action taken. Refer to Appendix 3 for Procedure.

ACTION:

- Locate, inspect and establish ownership of features relevant to flood risk management in Cheshire East.
- Develop a risk based approach to maintenance works.
- Undertake enforcement action as necessary.

B4.4 Community Information Provision

In times of adverse events, the flood pages on the Council's web site have recorded large numbers of visits. The Council will therefore exploit this as its main form of information provision and continue to develop the web pages with appropriate links to specialist publications. Other applications such as the growing use of social media outlets as a means of communication will be investigated.

ACTION:

- Use the Council's website to provide information during the course of flood events.
- Develop website links to specialist flood risk management information.
- Investigate the use of social media to collect information and communicate with the local community.

B4.5 Funding

Defra has changed how funding is made available for flood relief schemes to an outcome-based approach. The key principle is that the beneficiary contributes. The beneficiary pays principle places the cost burden on those that are at risk of flooding.

Section 16 Funding

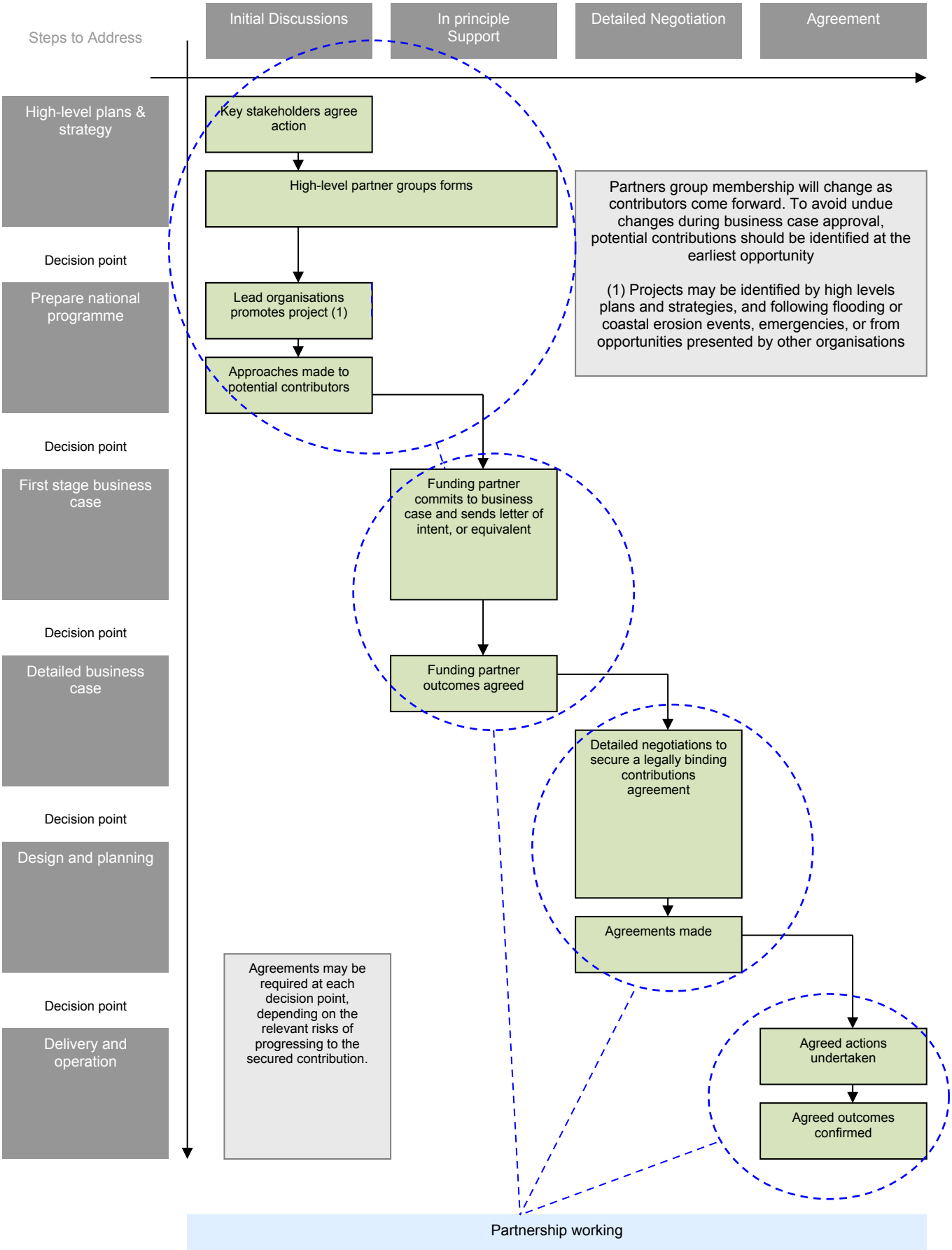
(1) The Environment Agency may make grants in respect of expenditure incurred or expected to be incurred in connection with flood or coastal erosion risk management in England.
(3) A grant may be subject to conditions (including conditions as to repayment and interest).

Under Defra's new partnership funding approach, relatively small amounts of local funding (or cost savings) could make the difference between locally important projects going ahead or not. Such contributions will supplement the amount of Government funding available at the national level.

A contribution could provide leverage for large amounts of funding from Government, and in turn deliver benefits to the community that dwarf the costs involved. For example, a 10% local contribution towards a scheme expected to deliver benefits eight times greater than the costs involved (as is typical), would deliver an 80 to 1 return on the level of contribution (from a local perspective).

The benefits of managing flood and coastal erosion risks are likely to feed through to the community in terms of property and land values, insurance costs against flooding, and business and agricultural productivity over the long-term. Key partners with direct interest in schemes are potential funders. They may also be able to contribute to schemes in other ways such as coordinating their work to achieve scheme objectives or allowing works to take place on their land. Where there is a shortfall of funding, Cheshire East Council as a scheme promoter is now encouraged to look more widely for alternative sources of funds.

B4.5.1 Funding Process



This is likely to need early involvement of elected representatives in choices that may require political support. Although this is a new approach to flood management funding, the Council is well experienced in developing and delivering multi-source funded schemes.

ACTION:

Cheshire East Council's in house funding will be allocated primarily in key risk based asset management, consenting and enforcement, designation and inspections, therefore addressing a proactive approach in flood management by establishing a baseline for future investment.

It will also look into the development of public knowledge and awareness of the risk of flooding and how everyone can help reduce flood risk.

Expenditure will be based around evidence gathered through asset inspections, significant incidents, the continued acquisition of local knowledge and the asset database.

ACTION:

Cheshire East will continue to investigate identified problems in order to gain valuable information that may lead to solutions being funded by Flood Defence Grant in Aid (FDGiA) or by the Local Levy Programme via the EA and the Regional Flood and Coastal Defence Committee (RFCC).

Other potential sources of funding include but are not limited to European Funding and Local Enterprise Partnerships. These are an amalgamation of public/private bodies with the goal to deliver economic growth that is sustainable and appropriate.

ACTION:

Develop links with Local enterprise Partnerships and European funding groups to understand their objectives and identify any cross cutting themes and opportunities to gain access to their funding streams.

B4.5.2 An outcome-focused, partnership approach to funding flood and coastal erosion projects:

Three aspects of a project will influence the amount of national funding available:

- The value of benefits for householders as a result of flood or coastal erosion risks being managed, especially in deprived areas and where risks are significant.
- The value of other benefits achieved, such as the benefits to businesses, agricultural productivity and protection for national and local infrastructure, across the whole-life of the scheme.
- The environmental benefits of the scheme, needed to maintain healthy ecosystems as well as offset any habitats lost when defences are built to protect people and property.

B5: Environment and Sustainability

Objective 5:

Undertake flood risk management in a sustainable manner.

Section 27: Sustainable Development

In exercising a flood or coastal erosion risk management function, a lead local flood authority must aim to make a contribution towards the achievement of sustainable development.

Sustainable Development is defined as "…. Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" Bruntland Commission 1987 (UK Government Adopted Definition).

The main purpose of this document is to set out the strategy for implementing flood risk management measures across Cheshire East. However, there is an opportunity to derive significant benefit in the process, in respect to borough and country-wide aspirations in the wider context of sustainability, environmental and social improvement.

Delivering multiple benefits will require working with partners to identify local priorities and opportunities. Where appropriate, and in line with the principles of the National Strategy, contributions that help to deliver these additional improvements could be sought from those partners that benefit. Higher levels of government funding may also be accessible when wider benefits are delivered as part of the Local Strategy.

By undertaking its duties in a responsible manner as outlined in this strategy, Cheshire East can have a positive effect on the environment. Cheshire East Council will utilise where known the most up to date and best practice advice and guidance where applicable when undertaking its duties with regard to flood risk management.

B5.1. Environmental Objectives

The environmental objectives and measures specific to the Local Strategy which will contribute to the effective management of local flood risk are included below:

ENVIRONMENTAL OBJECTIVES

- To reduce the impact and consequences for individuals, communities, businesses and the environment from flooding and coastal erosion.
- To ensure that planning authority decisions are properly informed by flooding issues and the impact future planning may have on flood risk management and long term developments.
- Improve and/or maintain the capacity of existing drainage systems by targeted maintenance.
- Take a sustainable approach to flood risks management balancing economic, environmental and social benefits
- The local strategy should also contribute where possible to achieving national environmental objectives.

The Local Strategy should not hinder aims and objectives but has the potential to contribute to the achievement of them.

Other key documents and legislation containing objectives relevant to flood risk management include:

- Water Framework Directive (2000/60/EC)
- River Basin Management Plan (2015)
- Catchment Management Plans (Weaver Gowy Catchment, 2009)
- Wildlife and Countryside Act (1981)
- Water Cycle Strategy
- Biodiversity Action Plan (2006)
- Cheshire East LDF Core Strategy (2014)

(Note: this list in indicative only and not meant to be definitive.)

B5.2 How does the strategy contribute to an improved environment?

Through undertaking its duties the Council can have a positive impact on the environment; examples of which are as follows:

Duties and their potential environmental benefits:	
Consenting	The ordinary watercourse consenting process is in place to ensure that any works carried out do not have a detrimental effect on other people or the environment. It also ensures that any works which may affect flood risk are properly designed and where necessary environmental considerations are incorporated i.e. fish passes etc. In determining an application it is necessary to consider other Legislation including, but not exclusive to: The Environment Act; the Habitats Regulations; the Water Framework Directive (WFD); the Countryside and Rights of Way Act; the Salmon and Freshwater Fisheries Act; the Eel Regulations.
Enforcement	The purpose of ordinary watercourse regulation is to control certain activities that may have an adverse impact on flood risk and the environment. If works are carried out without consent, the Council has enforcement powers to remove or modify them.
Designation of 3rd Party Assets	The purpose of this legislation is to try and ensure that owners do not inadvertently alter structures and other features and potentially increase flood risk to themselves, their neighbours and the wider community and cause a negative social effect.
SuDs	Cheshire East will encourage SuDS. SuDS play a crucial role in managing the surface water from developments on site and hence reducing the flood risk however they have many environmental and social benefits, including; ➢ Protecting and potentially enhancing surface water quality by filtering pollutants; ➢ Improving groundwater recharge; ➢ Providing habitats for wildlife; ➢ Providing landscape amenity for the community; ➢ Providing potential opportunities for community engagement, management and ownership of SuDS. As well as planning for new Green Infrastructure, the LFRMS needs to protect existing wetlands due to their important role in surface water management.
Capital Works	In assessing potential solutions there may be conflicts between measures that are more or less sustainable. Cheshire East Council will assess sustainability with the economic, environmental and social benefits of any proposed scheme. Cheshire East Borough Council will be transparent about the trade-offs in both the short and long term and explain decisions taken.
Maintenance Works	As recommended by the Pitt Review, Cheshire East may need to undertake a more pre-emptive view of maintenance particularly those areas known to have significant flood risk attached. Some rivers are designated under the Habitats Directive as Special Areas of Conservation. Any maintenance activities that we may wish to carry out, including dredging and weed cutting, must comply with the requirements of the Habitats Directive. This may affect the amount or timing of what we are allowed to do. In some exceptional cases it may prevent us from doing any dredging or weed cutting at all. The Water Framework Directive does not prohibit dredging. The Directive calls for the reinstatement of natural river channels and, as far as possible, for a reduction in interference in the natural river process.

B5.3 Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a statutory assessment process, required under the Environmental Assessment of Plans and Programmes Regulations (the SEA Regulation (Statutory Instrument 2004, No 1633) which provides the legislative mechanism for transposing the European Directive 2001/42/EC [on the assessment of the effects of certain plans and programmes on the environment] (the SEA Directive). The SEA Directive and Regulations require that an assessment be made of the effects that certain plans and programmes will have on the environment.

SEA has been carried out but consultation with the Environment Agency, English Nature and other stakeholders is still to be undertaken. The SEA seeks to identify the links and corresponding legislation and policies, such as biodiversity, that are relevant to and may influence the local flood risk management strategy. It was produced as a separate document to the strategy.

B5.4 Sustaining Effective Flood Risk Management in Cheshire East

Along with most local authorities, Cheshire East has suffered a loss in critical mass of expertise for flood and drainage management coupled with the loss of former Agency agreements with United Utilities.

B5.4.1 Resources Needed

Within Cheshire East Council there is now an established small resource with a wide range of knowledge and skills working on local flood risk management. Additional skills do exist across the wider service delivery sectors and include engineers, spatial planners, development control, building control, environmental planners and emergency planners.

ACTION:

Identify the resources throughout all Departments that are active in managing Flood Risk within Cheshire East and record the proportion of their time which is involved in flooding. Recognise the skills and competencies that are needed to perform Flood Risk Management duties.

Use the collected information to promote the case for staff retention, personnel development and recruitment.

B5.4.2 Skill Capacity Building - Knowledge

In an era of austerity and continual budget reductions Cheshire East already works with limited staff resources and developing and training staff could add additional pressures if not programmed sensitively. Training will need to be spread throughout the year and we have therefore prioritised what our requirements for skill and knowledge are. Our approach has been developed to ensure the Council can develop the required in-house skills over a period of time.

ACTION:

Develop a phased training plan to enable staff to acquire the skills and knowledge needed to fulfil their expanding flood risk management role.

The trend to outsource flood risk management to the private sector is currently promoted by Cheshire East, but in the longer-term this may be considered unsustainable. The Council will therefore aspire to have sufficient in-house knowledge to act as an intelligent all round client for the strategic and day-to-day management of flood risk as well being able to manage external development approval, design, adoption and operational management. Once this area of legislation is enacted, the Council will appraise detailed requirements and training opportunities that will be provided.

ACTION:

Develop operating procedures and plans for the LLFA. Define resources and skills required so these can be integrated into both training and staffing plans.

There are several groups, which have already been established such as drainage networks through the Environmental Agency E-Learning portal, local sub-regional workshops with catchment partners and digest information from the Local Government Improvement and Development Agency and the Communities of Practices. These networks are extremely beneficial to share expertise and seek the best solutions to common issues. The Council shares these capacity building forums through the LLFA internal structure and external partnerships. Courses and workshops hosted by the EA as different phases of the Act have been enacted have proved very successful in rapid skills building.

ACTION:

Continue to take an active role in existing sub regional groups to share knowledge and experience. Make use of all capacity building opportunities and take on board advice and guidance provided by Defra and the Environment Agency.

Once the remainder of the Act is enacted the identified knowledge gaps, particularly for SuDS, will be closed by this initiative. Cheshire East now has two established networks based on the sub-Mersey catchment areas. These assist in understanding the joint challenges faced locally. The importance of knowledge transfer between local authorities is an important element of the strategy to build up capacity and skills. It is envisaged that at a later stage staff transfer may be

possible. This will allow the sharing of individual IT specialists as well as the sharing of software programs which otherwise could be under-utilised by one local authority.

ACTION:

Continue to explore opportunities to share specialist IT skills and staff between partner organisations to utilise the resource efficiently and share knowledge between parties.

B5.4.3 Succession Planning

Developing and adapting the required skills to various aspects of flood management is underway. Opportunities will be sought for additional formal flood management qualifications through Defra/EA sponsored degree programme when opportunities arise. This strategy will provide future succession as well as creating employment opportunities during the current difficult economic conditions. Skills development to date has been through joint workshops, mentoring from experienced officers from the Council, Environment Agency and exchange with main sub-regional partners. This process has proved beneficial and cost effective.

ACTION:

Seek to appoint graduates from a range of disciplines to develop skills that are transferable between disciplines and also to support individuals in attaining formal flood risk management qualifications.

B5.4.4 Hardware and Software Requirements

Cheshire East Council has identified a number of software systems and tools that require developing either as extensions to existing systems or as stand-alone dedicated tools to manage assets, their data, condition and operations.

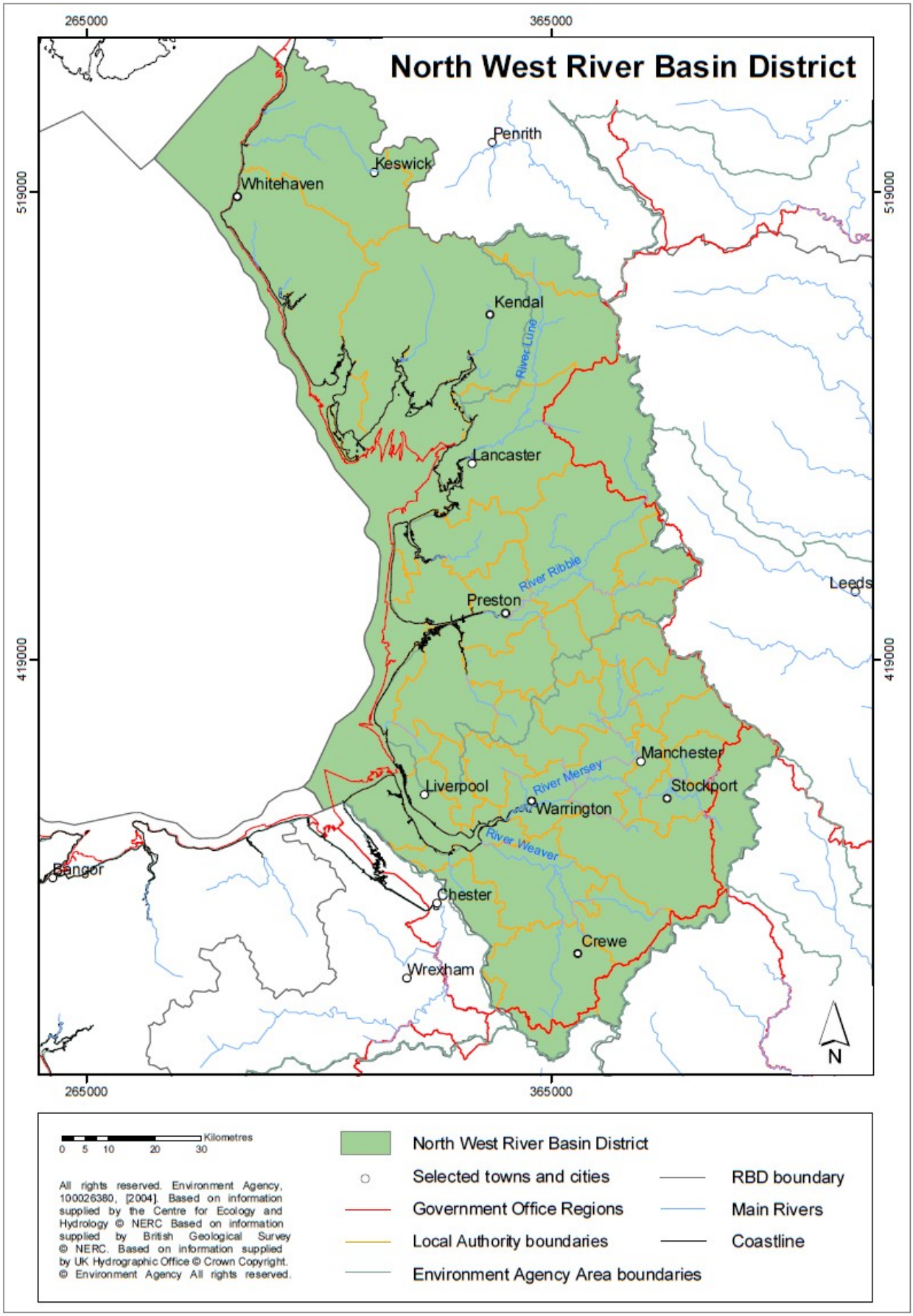
ACTION:

Prepare Business cases for the acquisition of identified software systems and tools to support local flood risk management duties. Consider whether there are economies of scale by procuring these as a regional group, rather than as individual authorities.

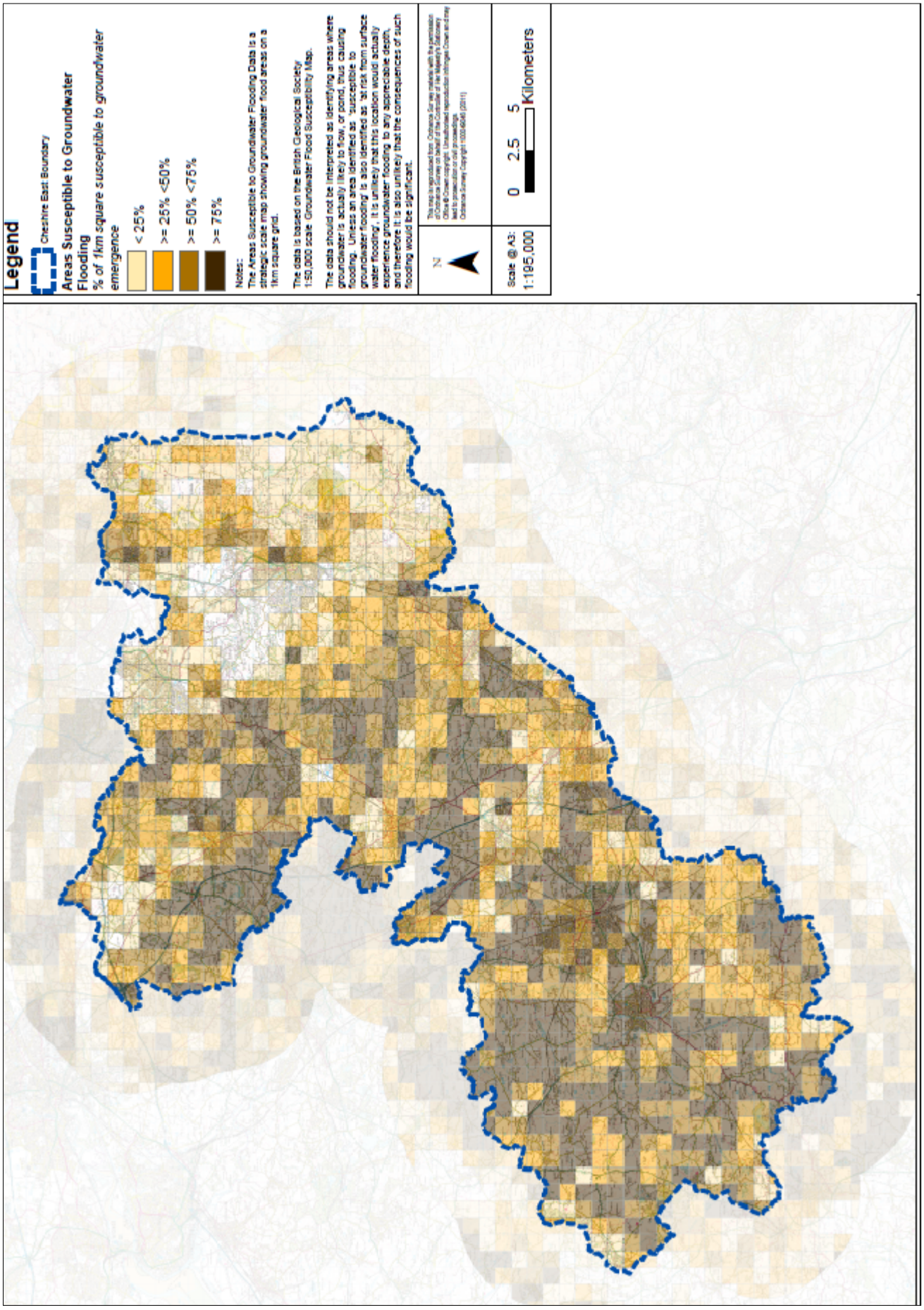
Appendices

Appendix 1 – North West River System

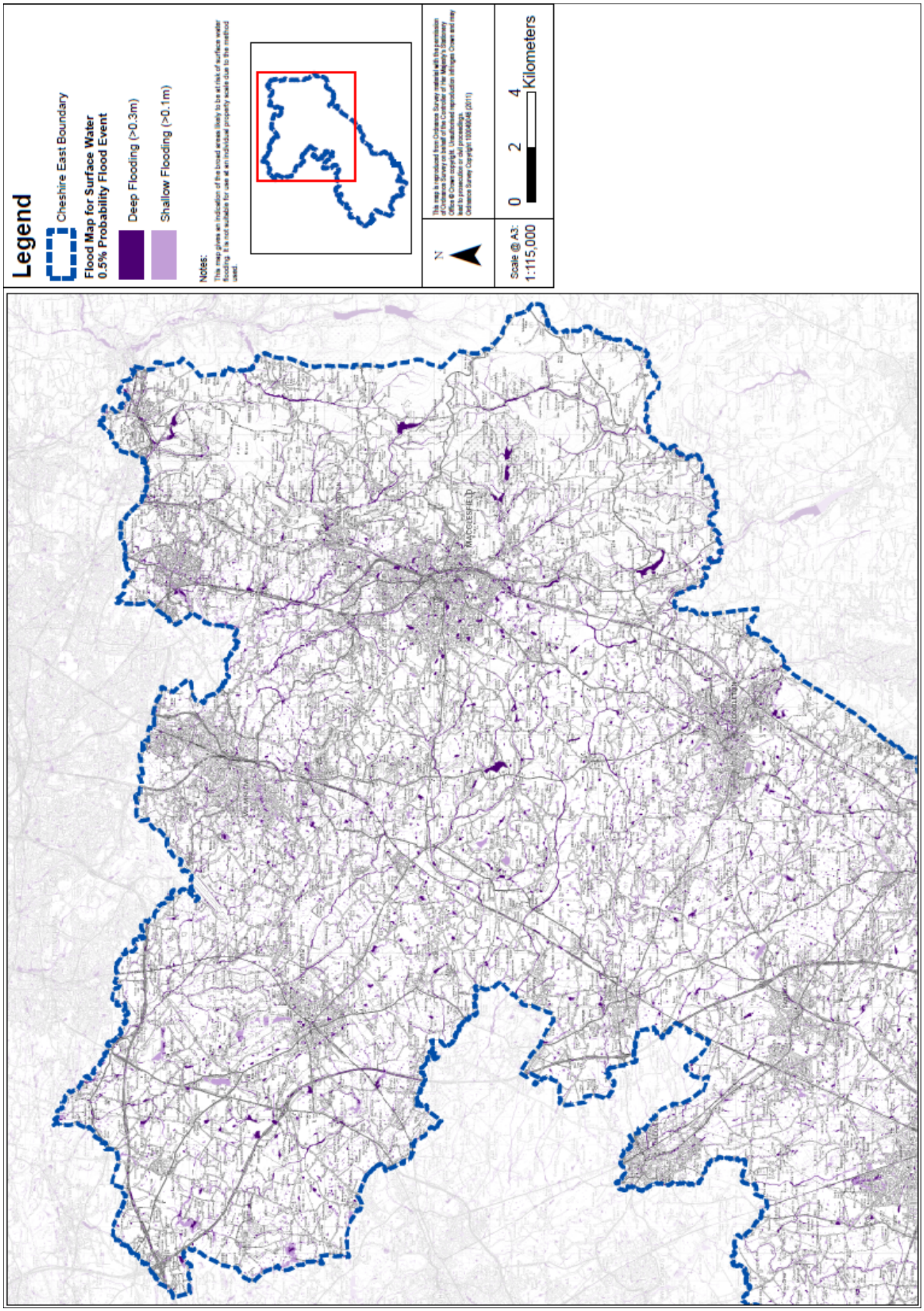
Appendix 1 Figure 1 North West River Basin District



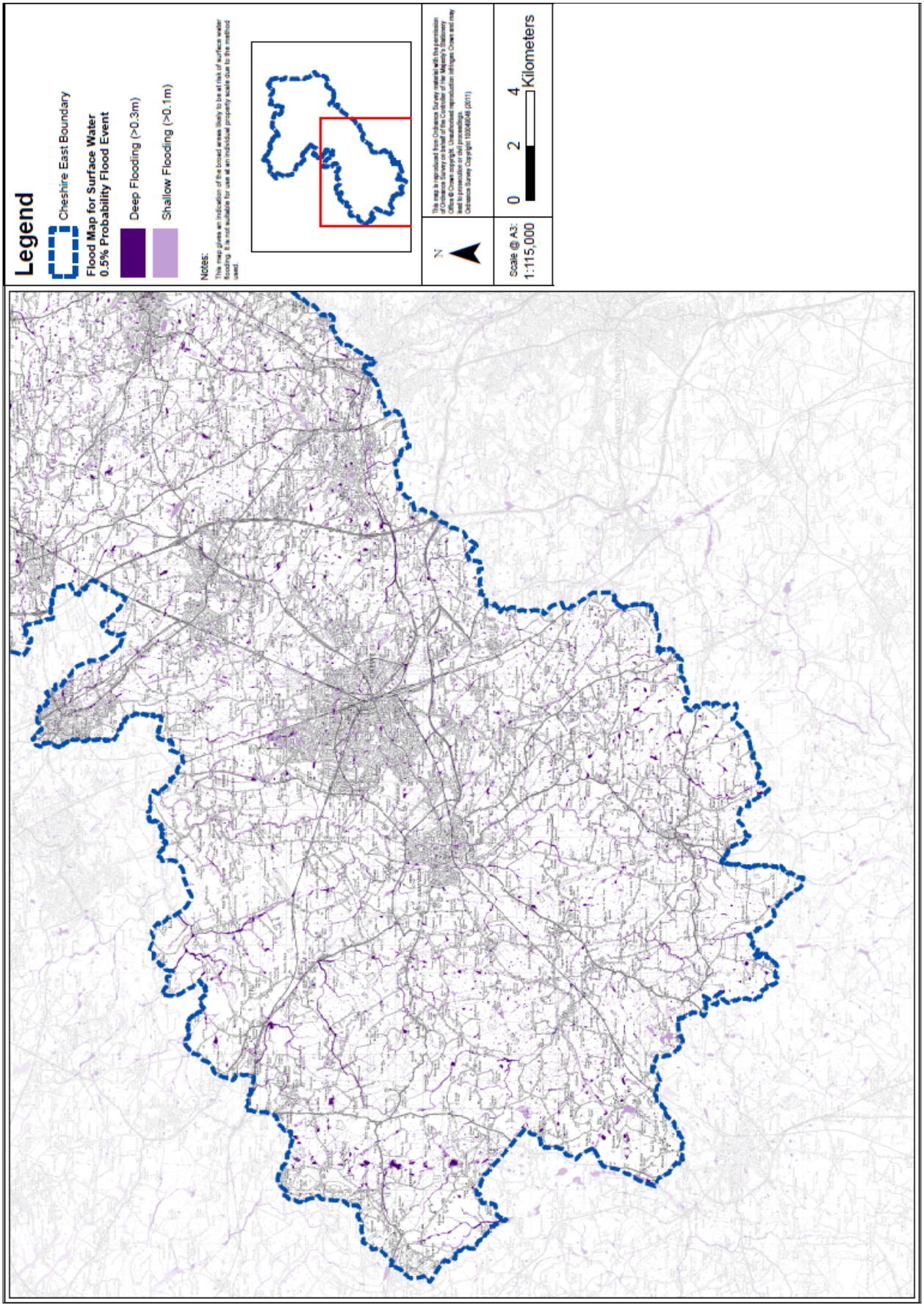
Appendix 1 Figure 2 Areas Susceptible to Ground Water Flooding



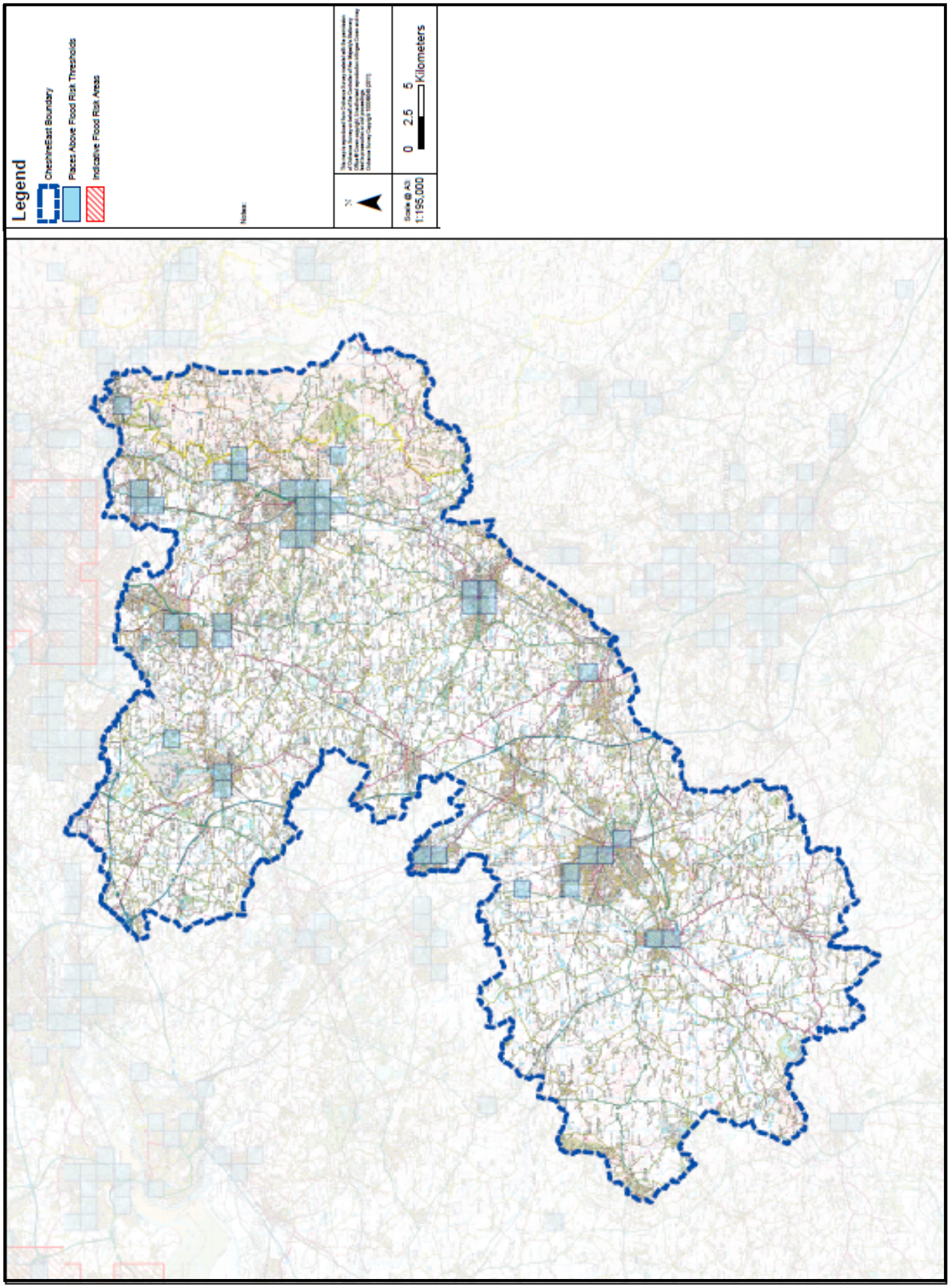
Appendix 1 Figure 3a Future Surface Water Flood Risk (North Area)



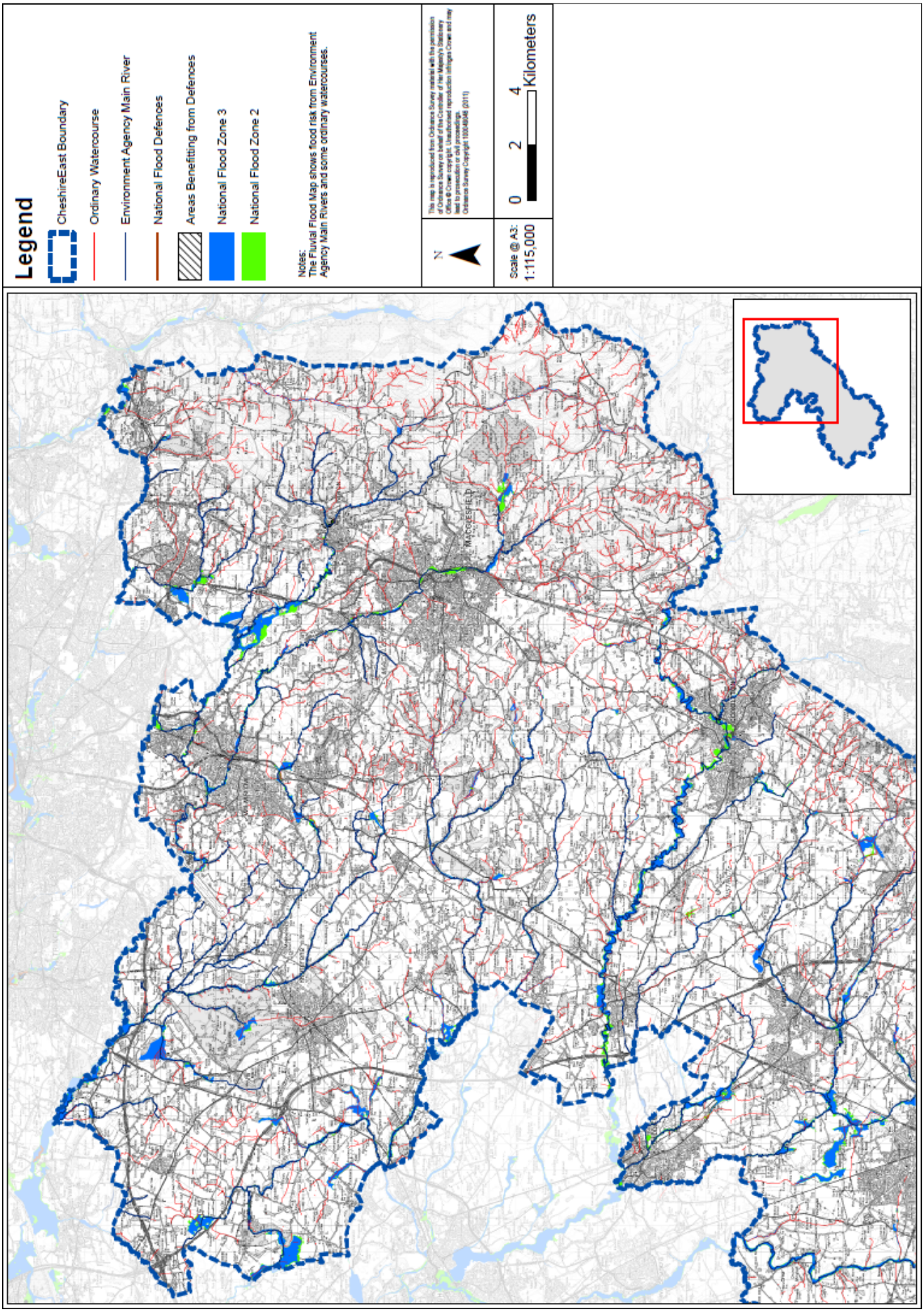
Appendix 1 Figure 3b Future Surface Water Flood Risk (South Area)



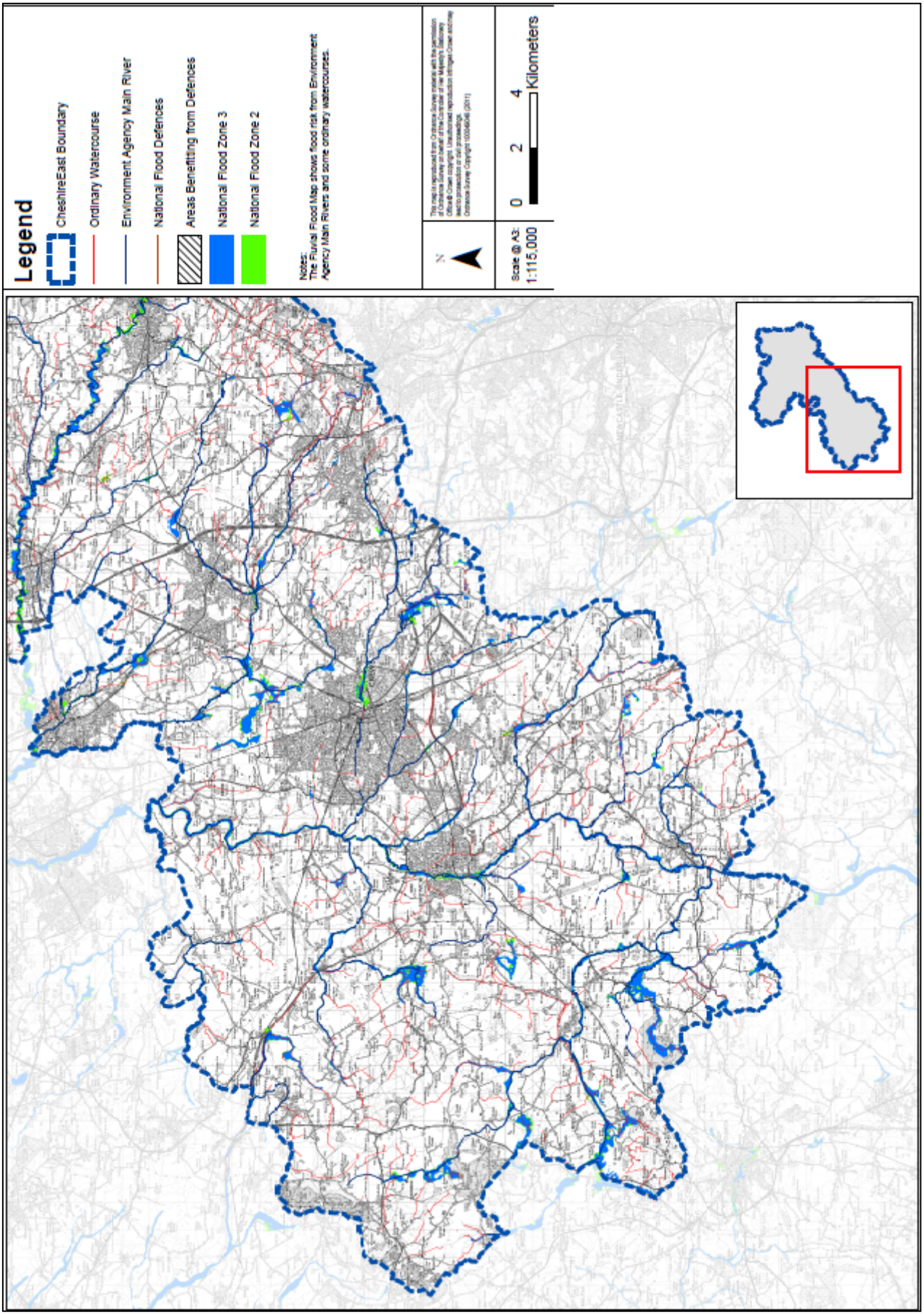
Appendix 1 Figure 4 Places above Flood Risk Thresholds



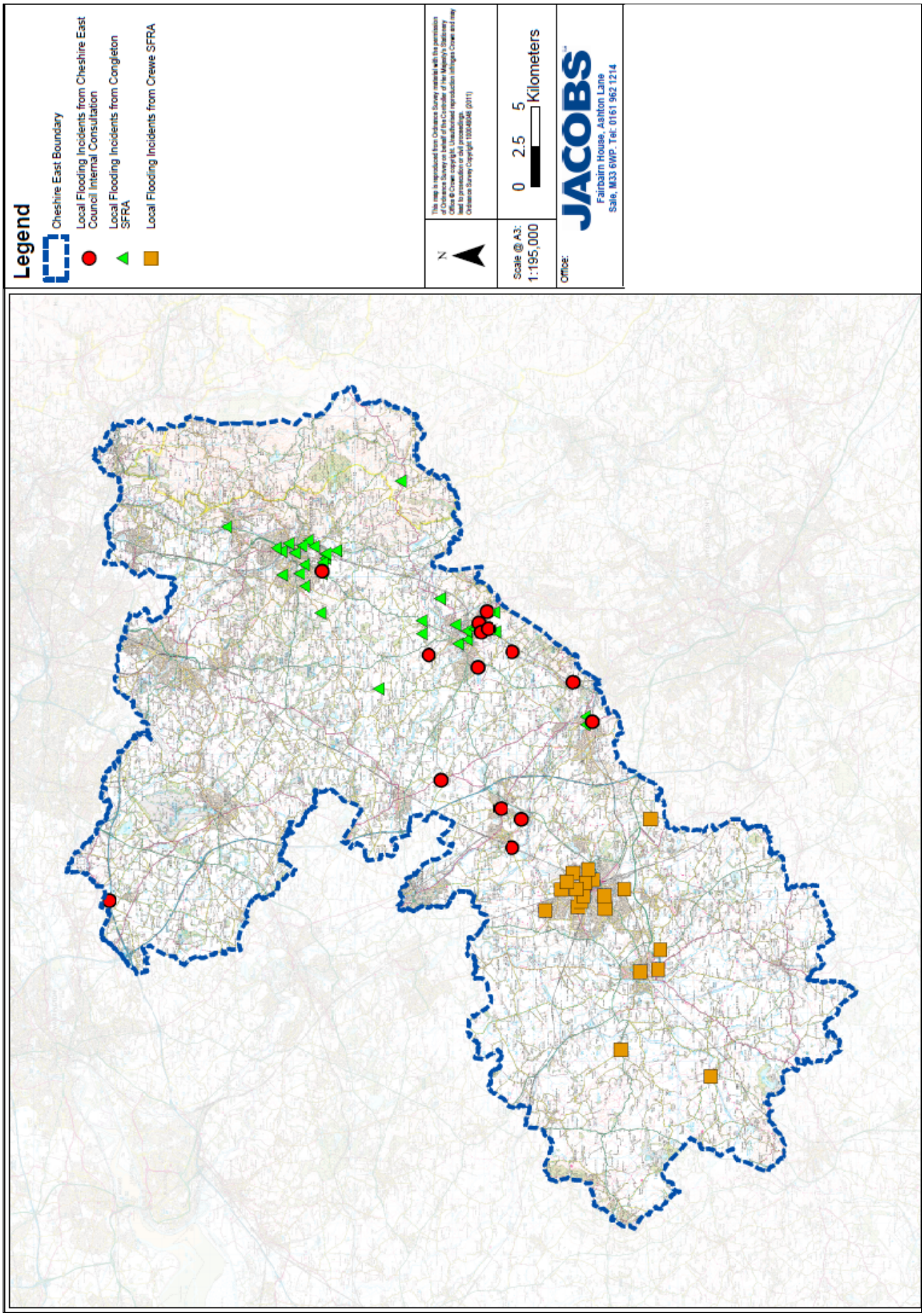
Appendix 1 Figure 5a Future Watercourse Flood Risk (North Area)



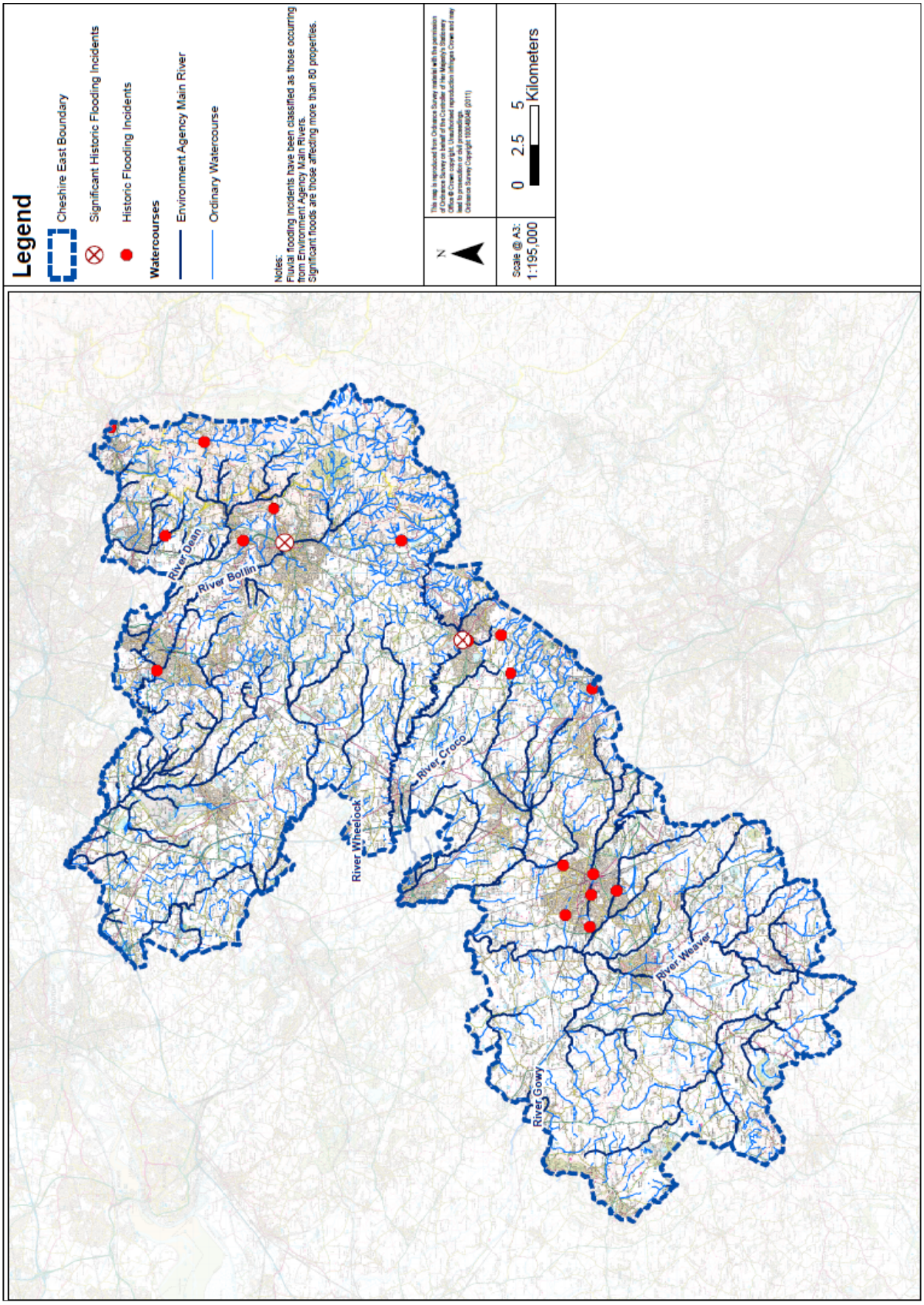
Appendix 1 Figure 5b Future Watercourse Flood Risk (South Area)



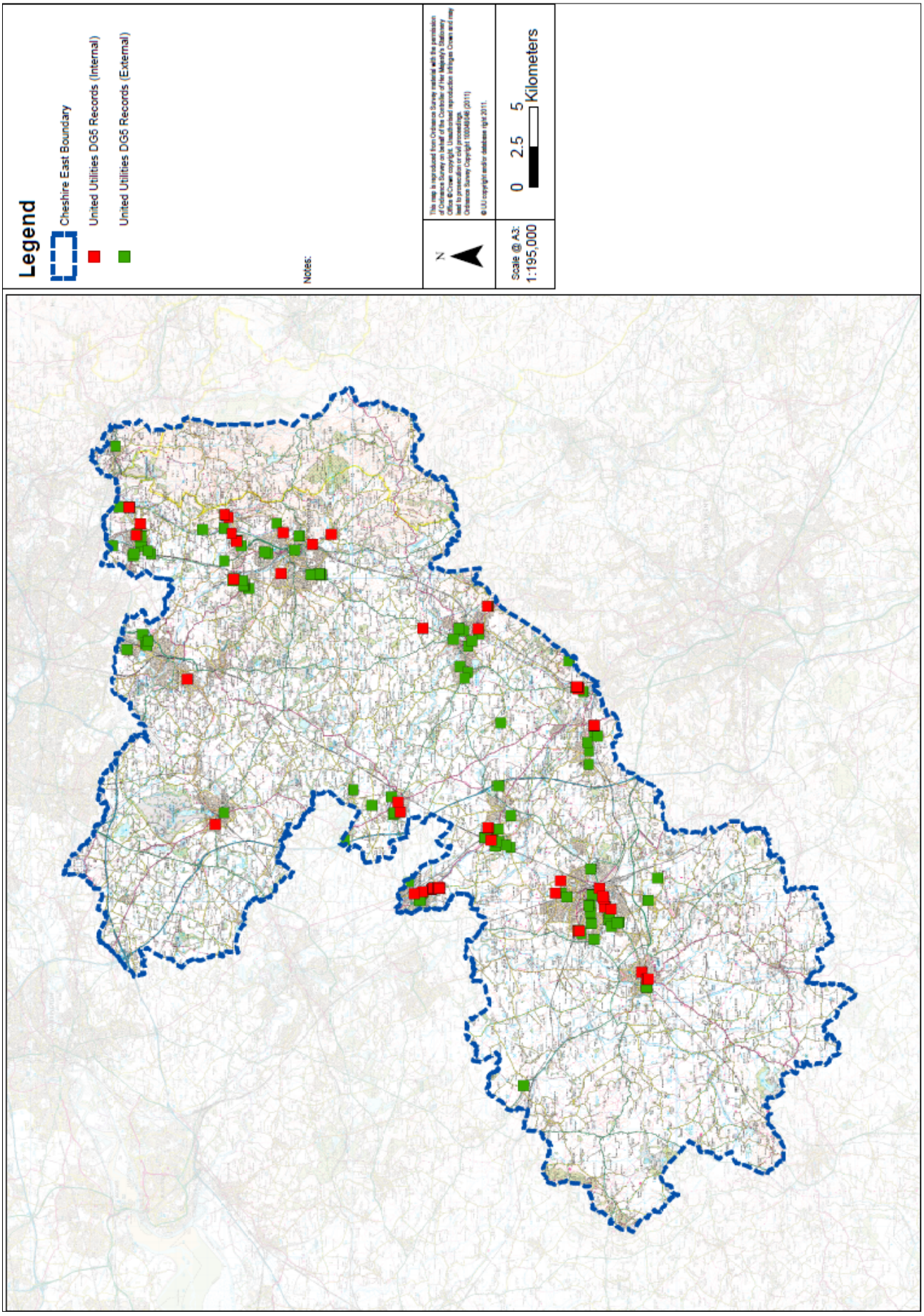
Appendix 1 Figure 6a Historic Surface Water Flood Records



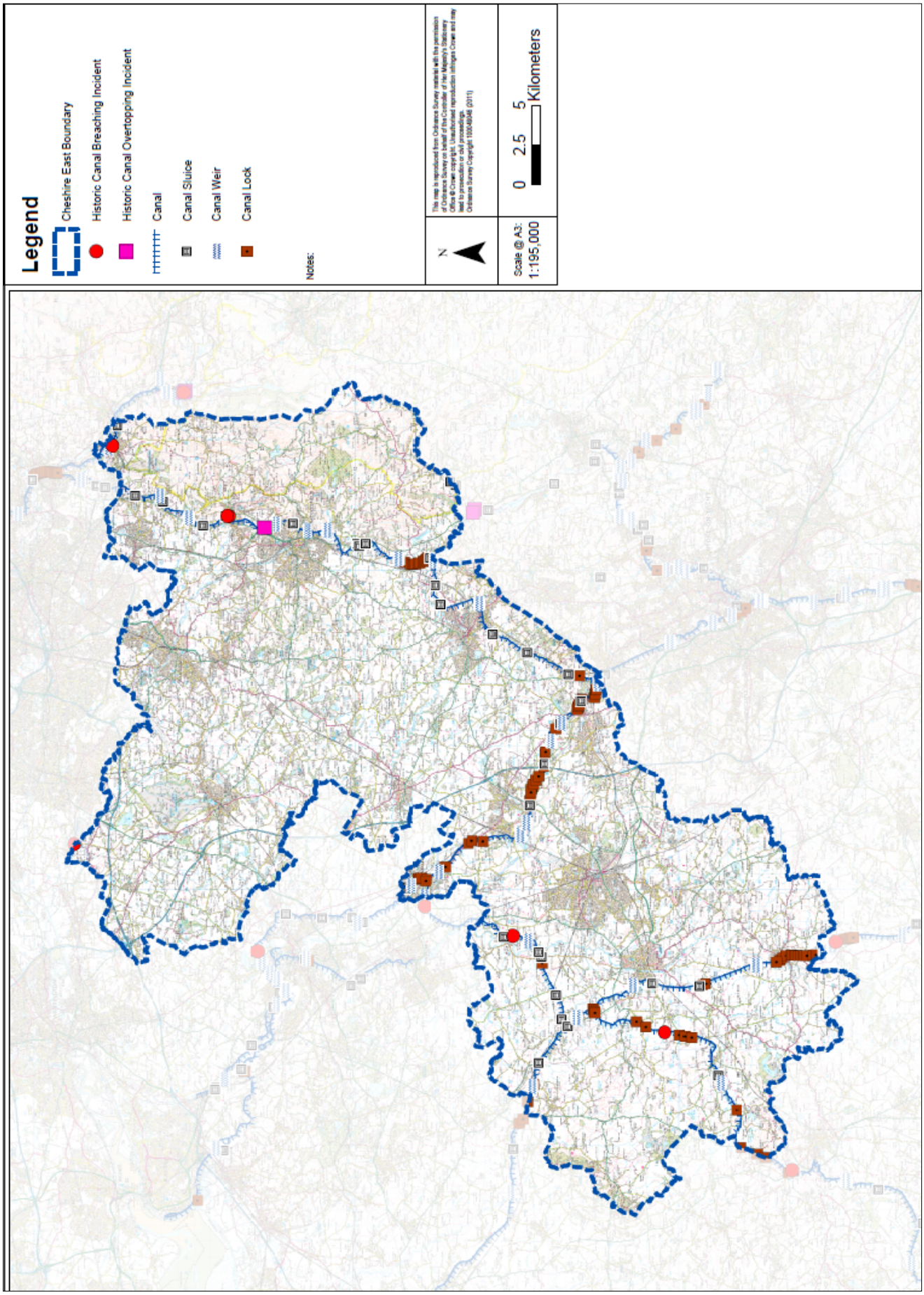
Appendix 1 Figure 6b Fluvial and Tidal Flood Records



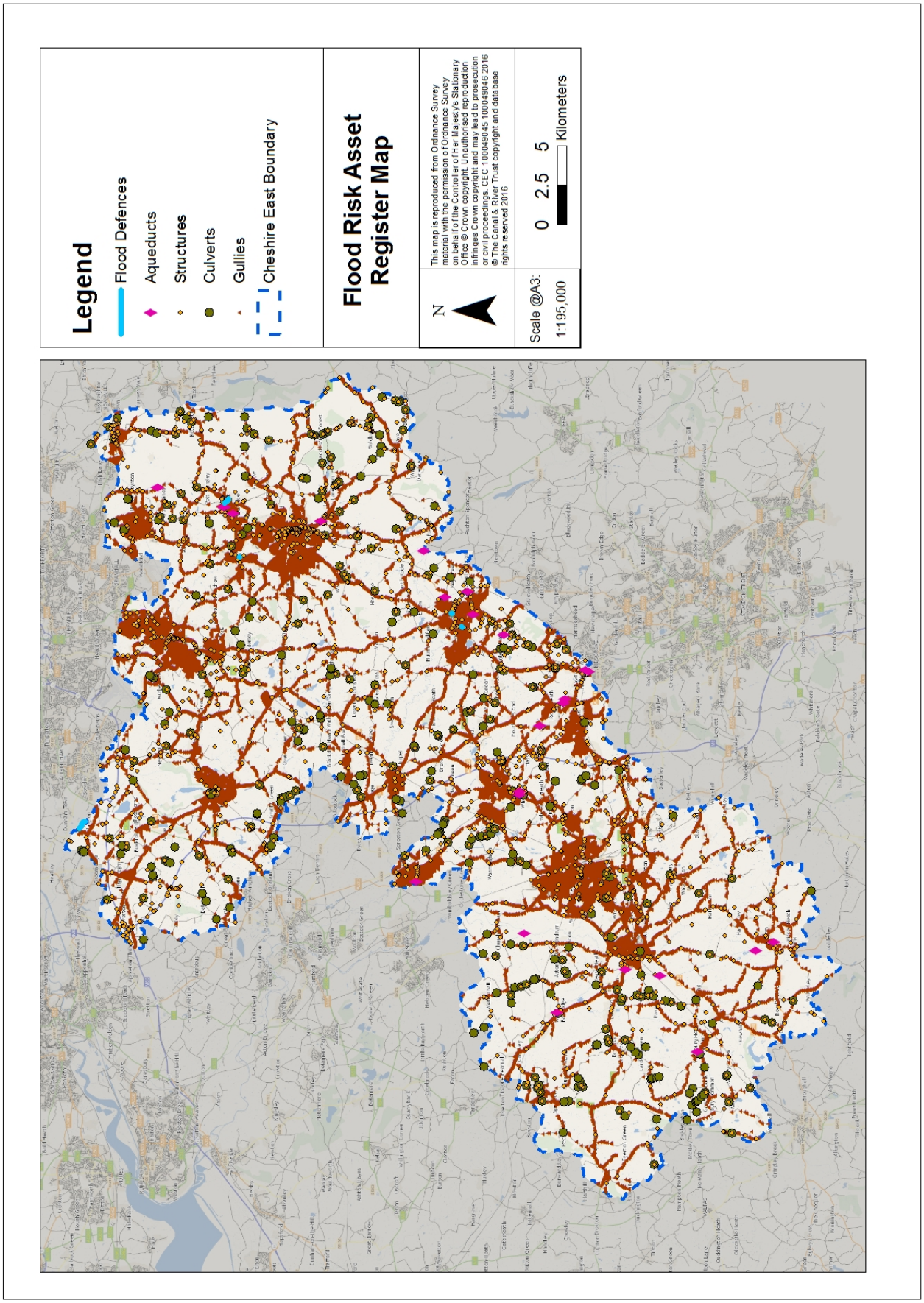
Appendix 1 Figure 6c Historic Sewer Flood Records



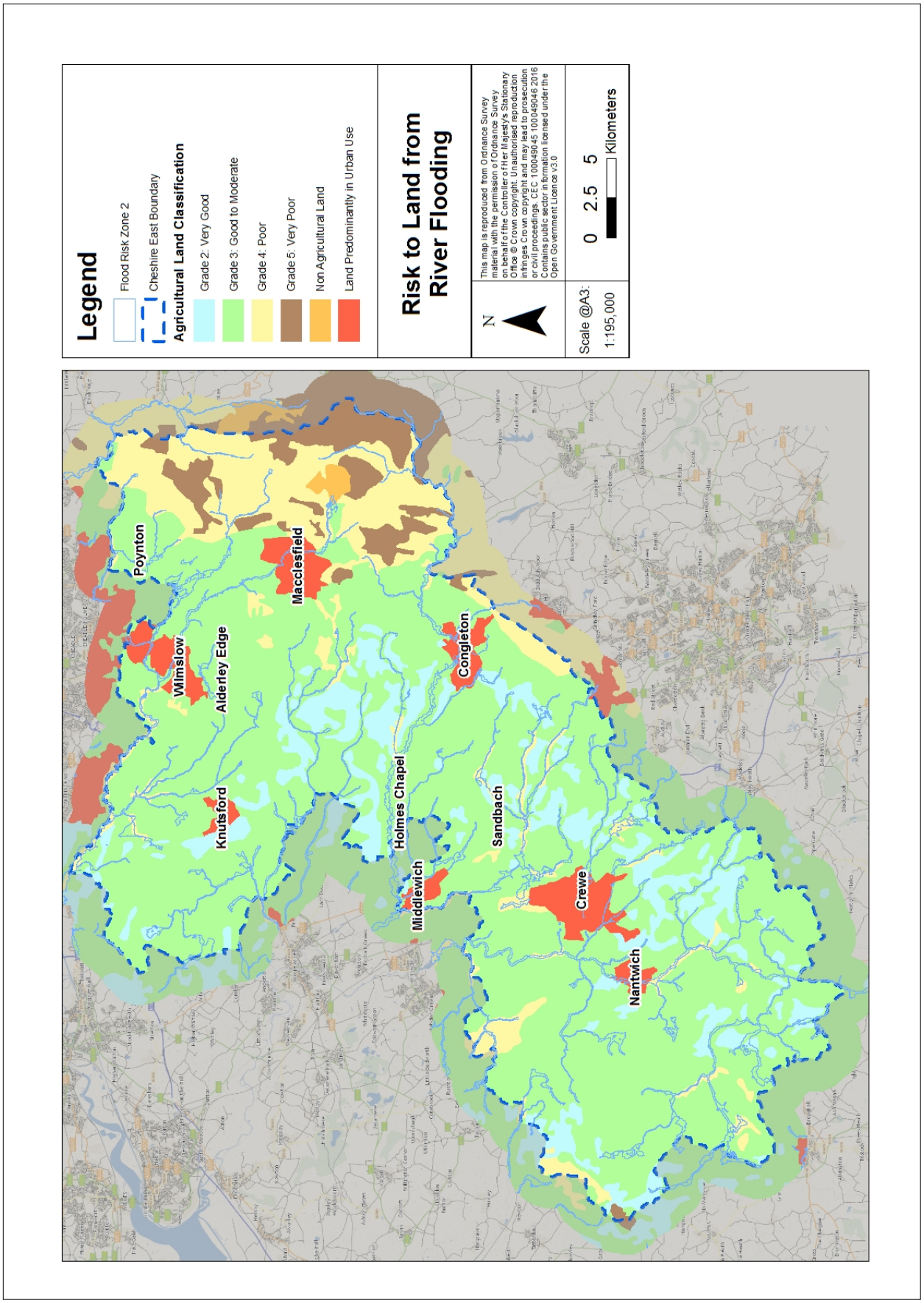
Appendix 1 Figure 6d Historic Canal Flood Records



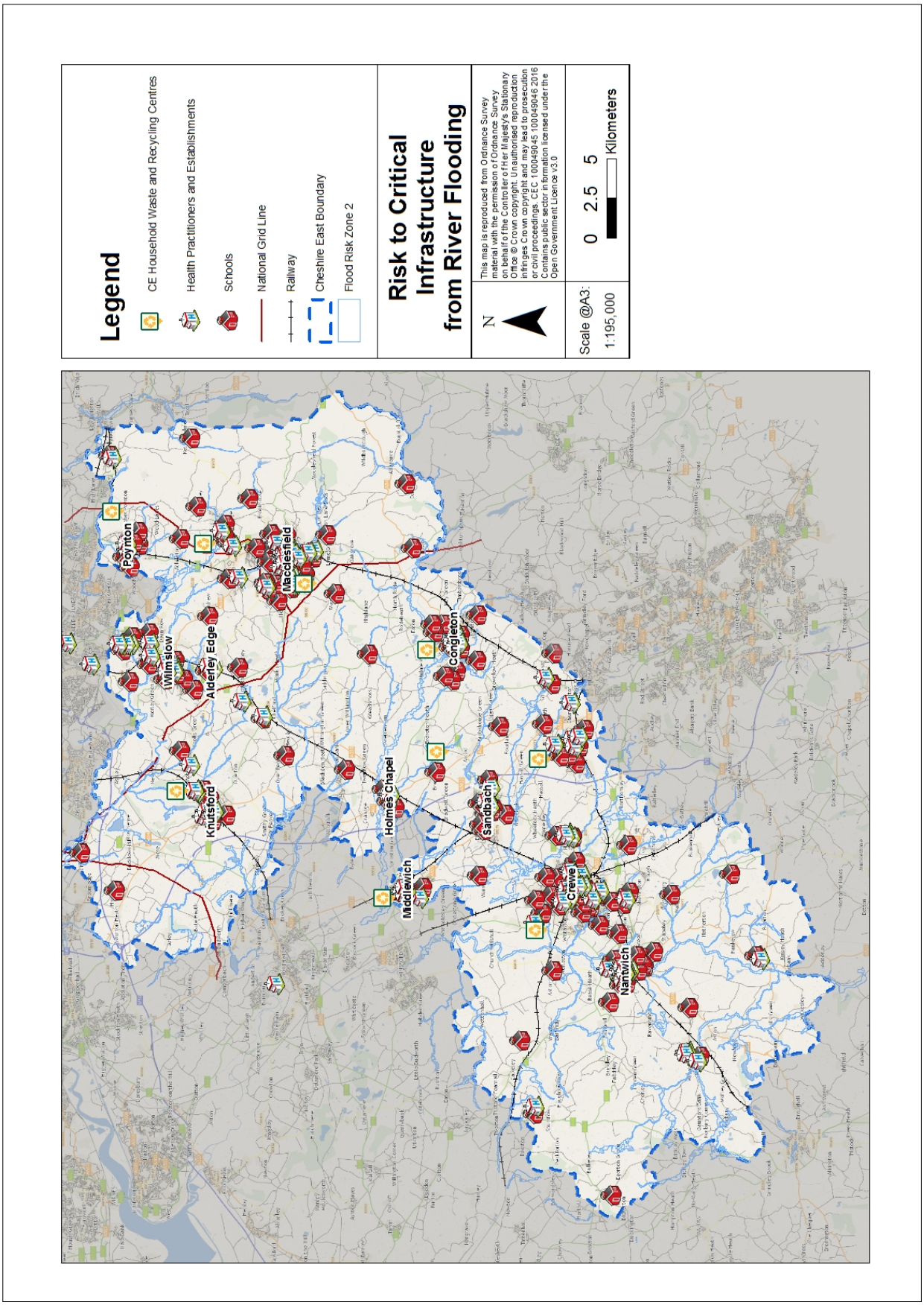
Appendix 1 Figure 7 Asset Register Map



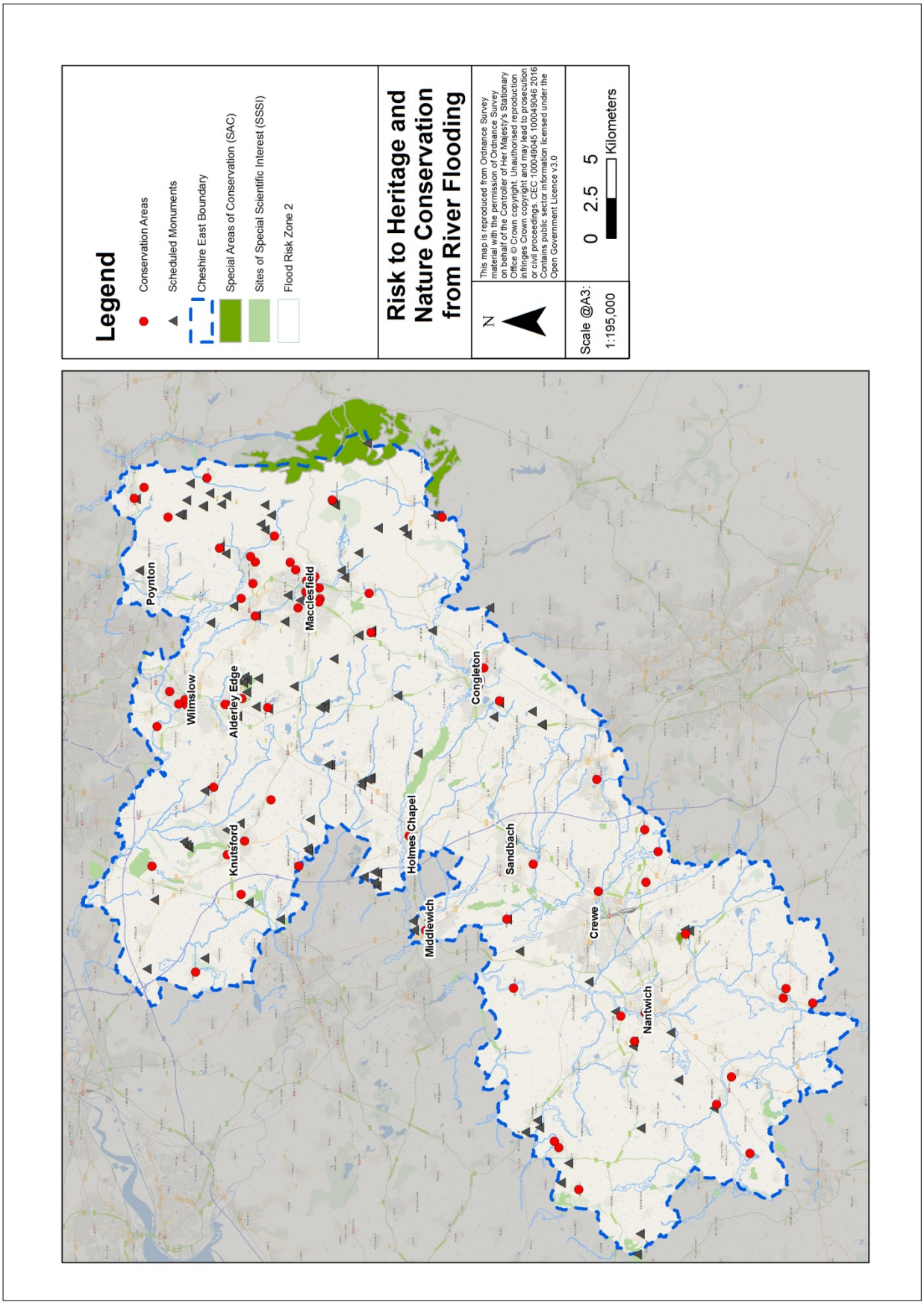
Appendix 1 Figure 8 Risk to Land from River Flooding Map



Appendix 1 Figure 9 Risk to Critical Infrastructure from River Flooding Map



Appendix 1 Figure 10 Risk to Heritage and Nature Conservation from River Flooding



Appendix 2 – Environment Agency Flood Warning Areas

Appendix 2 Figure 1 – New Flood Alert Warning Signs

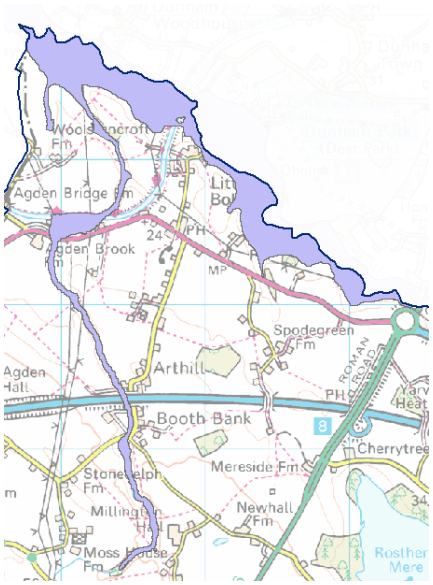
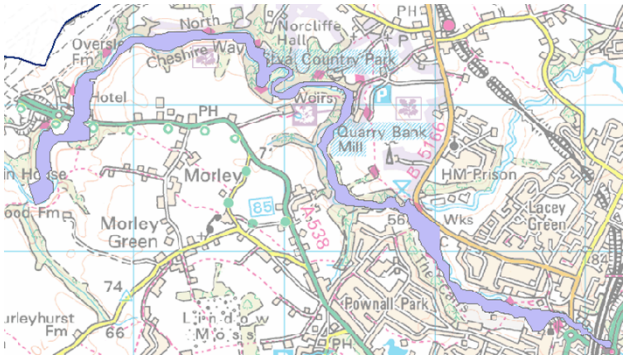
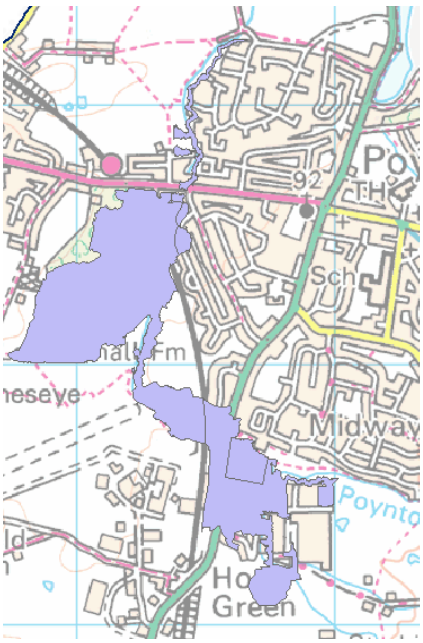
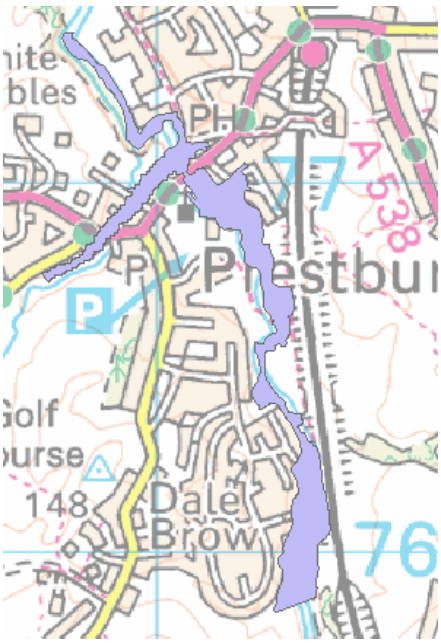
	Online flood risk forecast	 FLOOD ALERT	 FLOOD WARNING	 SEVERE FLOOD WARNING	Warning no longer in force
What it means	Be aware. Keep an eye on the weather situation.	Flooding is possible. Be prepared.	Flooding is expected. Immediate action is required.	Severe flooding. Danger to life.	No further flooding is currently expected in your area.
When it's used	Forecasts of flooding on our website are updated at least once a day.	Two hours to two days in advance of flooding.	Half an hour to one day in advance of flooding.	When flooding poses a significant threat to life.	When river or sea conditions begin to return to normal.
What to do	Check weather conditions. Check for updated flood forecasts on our websites.	Be pared to act on your flood plan. Prepare a flood kit of essential items. Monitor local water levels and the flood forecast on our website.	Move family, pets and valuables to a safe place. Turn off gas, electricity and water supplies if safe to do so. Put flood protection equipment in place.	Stay in safe place with a means of escape. Be ready should you need to evacuate from your home. Co-operate with the emergency services. Call 999 if you are in immediate danger.	Be careful. Floodwater may be still be around for several days. If you've been flooded, ring your insurance company as soon as possible.

When they are issued		
Before	**During**	**After**
SFWs should only be issued from a forecast when there won't be time to wait until flooding has begun.	Most SFWs should be issued after flooding has already begun.	In exceptional circumstances, as flood waters recede, secondary effects such as damaged infrastructure, may justify issuing a Severe Flood Warning.

Appendix 2 Figure 2 Flooding Criteria

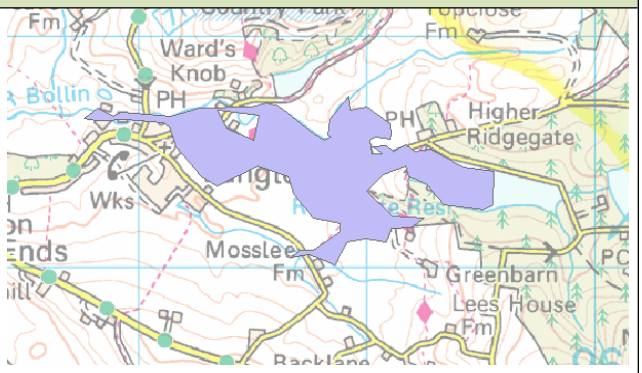
Criteria 1 - Risk to Life	**Criteria 2: widespread flooding**
➢ Significant risk to life caused by: ➢ deep and fast flowing water (e.g. caused by significant overtopping of defences or sudden onset flooding from dam/defence failure); ➢ rapid onset of flooding; ➢ presence of debris in the water that could cause death or injury; ➢ potential/observed collapse of buildings/structures; ➢ the vulnerability of the population or their surroundings (e.g. deep/fast flowing water through a caravan park).	➢ Significant disruption to communities: ➢ likely to affect whole community; ➢ community isolated by floodwaters with no obvious means of escape; ➢ critical resources/infrastructure for communities disabled (e.g. no access to food, water, electricity); ➢ emergency services and authorities unable to cope with large volumes of evacuees and rest centres at full capacity; ➢ mutual aid/military support necessary or called upon.

Appendix 2 Figure 3 Flood Warning Areas

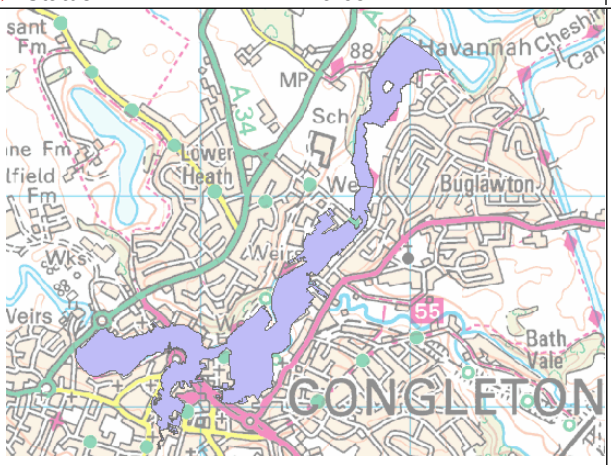
Flood Warning Areas	
 ➢ Area: Argen Brook, Little Bollington ➢ Properties Affected: 19 ➢ Status: In Force	 ➢ Area: River Bollin, Wilmslow ➢ Properties Affected: 30 ➢ Status: In Force
 ➢ Area: Poynton Brook, Poynton ➢ Properties Affected: 169 ➢ Status: In Force	 ➢ Area: River Bollin, Prestbury ➢ Properties Affected: 31 ➢ Status: In Force

Flood Warning Areas

- Area: River Bollin, Macclesfield
- Properties Affected: 576
- Status: In Force



- Area: River Bollin, Langley
- Properties Affected: 75
- Status: In Force

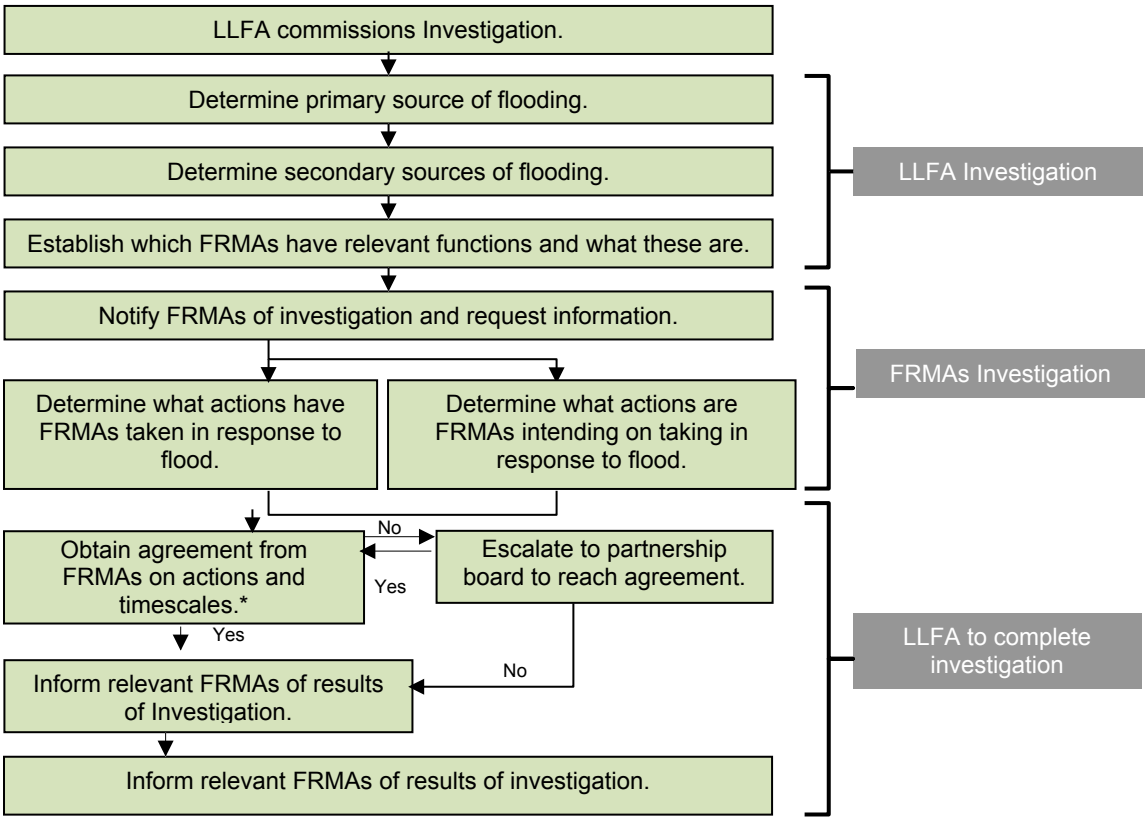


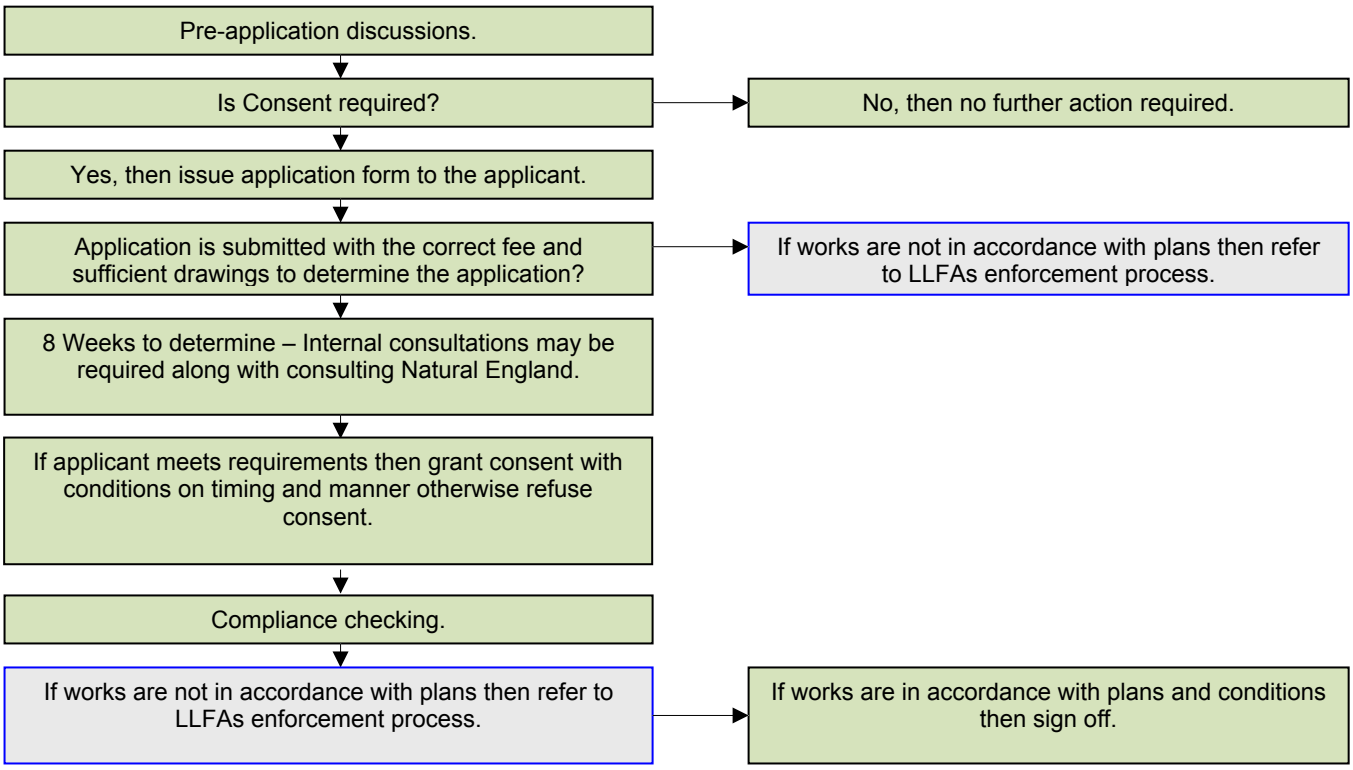
- Area: River Dane, Congleton
- Properties Affected: 633
- Status: In Force

- Area: River Weaver, Nantwich
- Properties Effected: 98
- Status: In Force

Appendix 3 - Logging Incidents & Enforcement

Appendix 3 Figure 1 Proposed Formal Investigation Procedure





Appendix 4 - Consultation

The current list indicates the planned consultation between partners and Cheshire East Council

Partner	Consultation
Cheshire East Borough Council	To identify areas under pressure from development and the sites, which have been allocated for potential development..
Cheshire Fire and Rescue Service	To identify locations at which they have been involved in flood incident management and records for the last 5 years.
Cheshire Constabulary	To identify locations at which they have been involved in flood incident management and records for the last 5 years.
Environment Agency	The Development Control, Flood Risk Mapping and Data management teams will be consulted to obtain information on sources of flood risk, hydraulic modelling, flood defences and flood warning as well as to discuss future sustainable flood risk management and mitigation measures.
United Utilities	United Utilities will be consulted to obtain information on the number of recorded incidences of sewer flooding.
Canal and River Trust	The C&RT will be consulted to obtain information on its assets located within Cheshire East Borough.
Neighbouring Planning Authorities	Neighbouring planning authorities will be consulted to identify potential upstream developments that are likely to cause increased flood risk to the Cheshire East Borough. Similarly, potential areas downstream of Cheshire East considered likely to see changes in current flood regime will be identified. The Borough of Cheshire East has boundaries with 8 other Local Planning Authorities (LPSs) and the impact of developments within these LPA areas on flood risk through Cheshire East will be recognised.
Upstream Authorities	The LPAs of Derbyshire and Staffordshire Moorlands are both located on the upstream boundaries with Cheshire East and, the impact of upstream developments in these authority boundaries is considered significant.
Downstream Authorities	The remaining LPAs that share common boundaries with Cheshire East include Cheshire West & Chester Council and Shropshire County Council.

Appendix 5 - Record Population

Appendix 5 Figure 1 Defra Guidance Notes

Defra guidance fields, on producing and developing the asset database. This is the original set of fields given by Defra, and is used as a base template for the Symbology Flood Database, see Figure F.2 in Appendix 8.

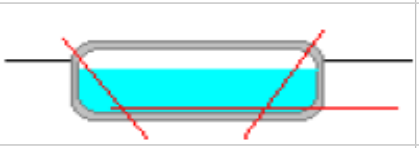
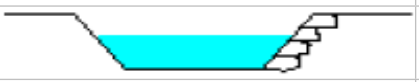
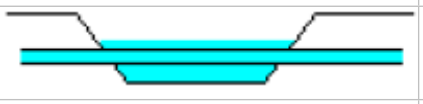
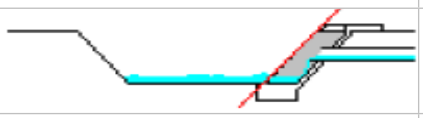
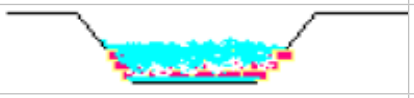
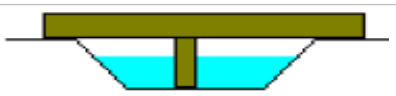
The table below provides a guide to how this register can be completed.

The register is divided into three worksheets classifying structures or features as either 'Links', 'Nodes' or 'Polygons'. We have attempted to show how a register might be structured for each of these types of structure or feature and the categories of information you might wish to include against each structure or feature.

The information in this 'Template Guide' worksheet includes suggestions of what information and metrics might be used to complete each category.

Category	Links	Nodes	Polygons
Type of Structures or Features	Open channel	Manhole	Reservoir, including lakes & ponds
	Culvert	Inlet	Flood storage pond
	Sewer	Outlet	Swale
	Drain, including highway drain	Pumping Stations	Soakaway/Filter strip
	Rising main	Gully	Permeable paved area
	Flood Defence Bank	Inspection Chamber	Canals
	Flood Defence wall	Junction	
	Permeable pavement	Change of physical character or direction	
Unique ID	Unique identification reference assigned by the lead local flood authority.		
Upstream NGR Downstream NGR	National grid reference. To six figures.	Easting and Northing national grid reference. To six figures.	Centroid national grid reference. To six figures.
Cover Level		Measured in m AOD. Please enter the measurement to two decimal points.	
SuDS	Please enter a YES or NO depending on whether or not the structure or feature can be classed as a sustainable drainage		
Local Location Name	Enter a local reference for ease when sending a team member out to the site.		
Ownership Maintained By	State whether the structure or feature is privately or publically owned. (details of ownership can be held in the record) If the structure or feature is maintained by anyone other than the owner then please specify their details here.		
Max Volume			Input measure in m^3 to 2 decimal points.
Weir Levels			Measured in m AOD to two decimal points.
Upstream Node Unique ref	Local reference given to the upstream and downstream nodes.	For node structure or features enter the upstream and downstream NGRs, if applicable.	
Downstream Node Unique ref			
Invert Level		Measured in m AOD to two decimal points.	
Description of Shape	Enter a short text description of the structure or feature shape.		
Height Om	Dimensions, if available, should be entered in meters. If possible to two decimal points.		
Length Om Diameter Om			
Depth Om			
Description of Principal Materials	Short text description of what materials the structure or feature is made up of.		
Description of Control Features		Short text description of any control features associated with the structure or feature.	
Any Additonal Comments	Room for any addtional comments.		
Source of data	Where the data to create the entry came from (site investigation/water company date/structure or feature owner report).		
Date of entry Entered by	Date when the record was created, or when most recently modified. Please enter the date as DDMMYYYY. Name of the person entering the data.		
Type		If the node structure or feature requires an engine, is the engine diesel of electric? Please enter DIESEL of ELECTRIC.	
Power Supply		If the node structure or feature has a power supply, is it a mains power supply? Please enter YES or NO.	
Emergency Generation		Does the structure or feature have an emergency source of power generation. Please enter YES or NO.	
Telemetry		Does the node have telemetry? Please enter YES or NO.	

Appendix 6 – Consents Samples & Enforcement Procedure

Pipe Culvert (including extension and removal of) Consent Required		Under Section 23 1(b)
Oversized Box Culvert (including extension and removal of)- Consent Required		Under Section 23 1(b).
Trash Screens as it is an alteration to a culvert and has the potential to obstruct flow. Consent Required		---
Bank Protection Works (Temporary works may require consent). Not Consentable		Under LDA 91
Pipe Crossing (in channel) Consent Required		Under Section 23 1(a)
Pipe Crossing (above bank) as it does not interfere with flow. Not Consentable		Under LDA 91
Pipe Crossing (below bed) as it does not interfere with flow – Potential temporary works consent. Not Consentable		Under LDA 91
Protruding Pipe Outfall as it will not act like a dam/weir or like obstruction. Not Consentable		Under LDA 91
Outfall within Bank profile – as it does not interfere with flow – Potential temporary works consent. Not Consentable		Under LDA 91
Weir/Dam or impoundment or temporary works that obstruct flow Consent Required		Under Section23 1(a)
Bridge (where soffit level is below bank top level) if it has the potential to affect flow. Consent Required		Under Section 23 1(a)
Bridge (abutments protruding but not reducing flow area/width) Not Consentable as does not interfere with flow.		Under LDA 91
Bridge (Abutments restricting flow) or Flume Consent Required		Under Section 23 1(b)
Clear span bridge as it does not interfere with flow Not Consentable		---
Bridge with support in channel as it will not act like a dam/weir or like obstruction Need to consider size of pier against size of watercourse, but would want to discourage the use of a pier in the watercourse. Not Consentable		Under LDA 91

Appendix 7 – Enactment Timeframe

	Action	FWMA 2010 Enactment	Short	Target	Medium	Target	Long	Target
1	Local Strategy Identify roles and functions of flood risk management authorities. Measures to be implemented to manage risk. Cost and benefits of the measures impacts of climate change.	Effective	Draft with onwards development gaps	Dec 2013	Draft Complete	Nov 2016	Publication	June 2017
2	Asset Register Create and publish a register of assets with a flood risk management function. Determine ownership and state of repair of identified assets.	Effective	Set up database and pilot symbology for initial asset	Dec 2012	Populate Significant Assets, Collect Known Assets	Dec 2017	Develop register following investigations / incidents	Ongoing
3	Consenting/Enforcing Approval of works affecting Ordinary Watercourses. Enforcement actions against unapproved works.	April 2012	Develop skill knowledge	Dec 2011	Introduce Consenting Procedure	April 2012	Continual improvement programme to ensure consenting and enforcement duties are effective	Ongoing
4	SuDS Assess, consult and approve drainage plans for new developments. Adopt and maintain SuDS approved by the SAB to national standards.	Still prospective	Develop skill knowledge	Dec 2012	SAB has been replaced with LLFA statutory consultation	Dec 2012		Ongoing
5	Reporting Procedure	Effective	Introduce procedure report format to contact centre	Nov 2011		Ongoing		Ongoing
6	Investigations Investigation of flood incidents from local sources to determine whenever management authorities have performed their relevant function. Publication of findings. Set-up partnership working arrangements. Provide information to EA if requested. Issued enforcement notices and pursue civil sanctions if request for information are ignored.	Effective	Introduce Investigation procedure	Nov 2011	Template for investigation reporting established by CMM	Sept 2016	Reporting undertaken in response to local flooding events	Ongoing
7	Designation (3rd party asset) Designation of assets with a flood management function to prevent alteration or removal by the owners or others.	April 2012	Introduce designation procedure	Dec 2011	Designation of existing assets with a flood management function	Dec 2018	Designation of new assets with a flood management function	Ongoing
8	Reservoirs Designate high-risk reservoirs. Preparation of a flood plan by the owner to give information on the area.	Subject to enactment			Commence identifying assets	June 2012	Evaluate risk Designate High Risk Reservoirs Owner requested to produce flood plan	Nov 2013

Appendix 8 – Draft Works Programmes

Appendix 8 Figure 1 - Draft Capital Works Programme

Please note this is a six year rolling programme that is refreshed annually**.** To view the most recent version of this table please refer to programme held by the Environment Agency or contact a member of the flood risk team at Cheshire East Council email: Flood.Investigation@cheshireeast.gov.uk

The link to the latest, full spreadsheet can be found at the Environment Agency's website: https://www.gov.uk/government/publications/programme-of-flood-and-coastal-erosion-risk-management-schemes

Below is an example of the programme at time of issue of this report - January 2016 RFCC consented programme (updated November 2016)

Flood and Coastal Erosion Risk Management (FCERM) Construction Programme – England									
Project Name	Constituency of Project Location	Location	Estimated Total Project Costs	Flood and Coastal Erosion Risk Management Grant in Aid Funding allocated from 2015/16 to 2020/21	Local Levy from 2015/16 to 2020/21	Public Contribution from 2015/16 to 2020/21	Households with a better level of flood protection from flooding by March 2018	Total households with a better level of protection from flooding when schemes are complete	Economic benefits (Net Present Value)
A530 Bradfield Green, Crewe	Crewe and Nantwich	Crewe	£300,000	£135,000	£140,000	£25,000	15	15	£1,032,000
Tinkers Clough, Princess Street, Bollington	Macclesfield	Bollington	£250,000	£80,000	£170,000	£0	6	6	£55,000
Mobberley Brook and tributaries, Wilmslow	Macclesfield	Wilmslow	£225,000	£26,000	£0	£0	0	15	£500,000
Tributaries of Poynton Brook, Poynton	Macclesfield	Poynton	£300,000	£50,000	£0	£0	0	100	£2,777,914
Blakelow Road, Macclesfield	Macclesfield	Macclesfield	£120,000	£120,000	£0	£0	0	50	£925,971
Newcastle Road, Congleton	Congleton	Congleton	£230,000	£230,000	£0	£0	0	14	£606,000
Sanctuary Moor, River Lilly, Knutsford	Macclesfield	Knutsford	£120,000	£120,000	£0	£0	10	10	£185,194
Pearl Street, Prestbury	Macclesfield	Prestbury	£70,000	£50,000	£20,000	£0	15	15	£277,791
A50 Pear Tree Cottages, Brereton	Congleton	Brereton	£135,000	£15,000	£20,000	£100,000	4	4	£267,000

Appendix 8 Figure 2 - Draft Maintenance Programme

Asset	Acton	Status	Solution Medium Term	Solution Long Term or Additional Works	Authority	Possible Funding
Gully Cleaning	Regular gully cleaning aligned to Surface Water Risk Maps	Actioned	Programme continually reviewed and amended	Intelligence and risk based system of maintenance	Cheshire East Council	Cheshire East Council revenue
Culvert Screens	Regular inspection of culvert screens at high risk locations identified from initial desk top exercise	Programme developed from historical knowledge and initial desk top exercise	Programme continually refined as asset management registers developed	Intelligence and risk based system of maintenance Replacement of identified deficient screens etc.	Cheshire East Council	Cheshire East Council revenue
Asset Inspection	Regular inspection of assets at high risk locations identified from initial desk top exercise	high risk locations identified from initial desk top exercise	Programme frequency and locations refined as asset management registers developed	Riparian land owners will require identifying	Cheshire East Council	Cheshire East Council revenue
Telemetry Systems	Regular safety operational checks by UTC Section				Cheshire East Council	Cheshire East Council revenue

Appendix 9 - Abbreviations and Definitions

Responsibilities	Additional Description
Produce Local Strategy	Develop, Maintain, Apply, Monitor
Investigate	How, When, Align to significant events in PFRA
Maintain Asset Register	Type, Ownership, Condition
Power to designate features that affect flooding	--
Power to carry out work on ordinary watercourses	--
Power to enforce obligations to maintain watercourses or bridge	--
Consenting authority for works to ordinary watercourses	--
Power to require works for maintaining flows to ordinary watercourses	--
SuDS LLFA will be approving body, duty to approve, adopt, maintain (right to connect to public sewer removed)	SAB replaced by LLFA as a statutory consultee to the LPA

Abbreviations

Item	Description
ABI	Association of British Insurers
ADA	Association of Drainage Authorities
AStSWF	Areas Susceptible to Surface Water Flooding
BAP	Biodiversity Action Plan
CIRIA	Construction Industry Research and Information Association
CLA	Country Land and Business Association
CLG	Department of Communities and Local Government
CFMP	Catchment Flood Management Plan
COMAH	Control of Major Accident Hazards
DCLG	Department for Communities and Local Government
Defra	Department for Environment, Food and Rural Affairs
DPD	Development Plan Document
EA	Environment Agency
EC	European Commission
FCERM	Flood and coastal erosion risk management
FMfSW	Flood Map for Surface Water
FWMA	Flood and Water Management Act 2010
FRA	Flood Risk Assessment
GHG	Greenhouse Gases
IUD	Integrated Urban Drainage
IDB	Internal Drainage Board
LGA	Local Government Association
LDF	Local Development Framework
LLFA	Lead Local Flood Authority
LoSA	Level of Service Agreements
LPA	Local Planning Authority
LRF	Local Resilience Forum
MoU	Memorandums of Understanding
NRD	National Receptor Database
NFU	National Farmers Union
RFCC	Regional flood and coastal committee
PPS25	Planning and Policy Statement 25: Development and Flood Risk
PFRA	Preliminary Flood Risk Assessment
PPC	Pollution Prevention Control
PPS	Planning Policy Statement
RBD	River Basin District
RFDC	Regional Flood Defence Committee
RSPB	Royal Society of the Protection of Birds
SA	Sustainability Appraisal
SAB	SuDs Approving Body
SAC	Special Areas of Conservation
SCI	Statement of Community Involvement
SEA	Strategic Environmental Assessment
SMP	Shoreline Management Plan
SFRA	Strategic Flood Risk Assessment
SSSI	Site of Specific Scientific Interest
SPA	Special Protocol Area
SPD	Supplementary Planning Document
SuDS	Sustainable Urban Drainage Systems
SWMP	Surface Water Management Plan
WMS	Water Management Statement
UU	United Utilities

Definitions

Item	Description
Assets	Structures or a system of structures used to manage flood risk.
Attenuation	Reduction of peak flow and increased duration of a flow event.
Balancing pond	A pond designed to attenuate flows by storing runoff during the peak flow and releasing it at a controlled rate during and after the peak flow has passed. The pond always contains water. Also known as wet detention pond.
Basin	Flow control or water treatment structure that is normally dry.
Bioretention area	A depressed landscaping area that is allowed to collect runoff so it percolates through the soil below the area into an underdrain, thereby promoting pollutant removal.
Building Regulations	The UK Building Regulations are rules of a statutory nature to set standards for the design and construction of buildings, primarily to ensure the safety and health for people in or around those buildings, but also for purposes of energy conservation and access to and about other buildings
Catchment	The area contributing surface water flow to a point on a drainage or river system. Can be divided into sub-catchments.
Climate Change	Any long-term significant change in the “average weather” that a given region experiences. Average weather may include average temperature, precipitation and wind patterns.
Combined sewer	A sewer designed to carry foul sewage and surface runoff in the same pipe.
Consequence	A condition or occurrence traceable to a cause e.g. the flood was an inevitable consequence of the prolonged, heavy rains.
Cultural heritage	Buildings, structures and landscape features that have an historic value.
Culvert	A covered structure under a road, embankment etc., to direct the flow of water.
Defences	A structure that is used to reduce the probability of floodwater or coastal erosion affecting a particular area (for example a raised embankment or sea wall)
Defra	Department for Environment, Food and Rural Affairs
Deposition	The process whereby sediment is placed on the sea bed, shoreline, river bed or floodplain.
Detention basin	A vegetated depression, normally dry except after storm events constructed to store water temporarily to attenuate flows. May allow infiltration of water to the ground.
Discharge.	The discharge of a river is the volume of water, which flows through it in a given time. It is usually measured in cubic meters per second (m^3/s).
Drainage authorities	Organisations involved in water level management, including IDBs, the Environment Agency, and RFDCs.
Environment Agency	A UK non-departmental public body of Defra with the principle aim of protecting and enhancing the environment to make a contribution towards the objective of achieving sustainable development. The Agency has principle responsibility for river (fluvial) flooding.
Evapotranspiration	The process by which the Earth's surface or soil loses moisture by evaporation of water and by uptake and then transpiration from plants.
Filter drain	A linear drain consisting of a trench filled with a permeable material, often with a perforated pipe in the base of the trench to assist drainage, to store and conduct water, but may also be designed to permit infiltration.
Filter strip	A vegetated area of gently sloping ground designed to drain water evenly off impermeable areas and filter out silt and other particulates.
Flood	A temporary rise of the water level, as in a river or lake or along a seacoast, resulting in its spilling over and out of its natural or artificial confines onto land that is normally dry. Floods are usually caused by excessive runoff from precipitation or snowmelt, or by coastal storm surges or other tidal phenomena,
Flood frequency	The probability of a flow rate being equalled or exceeded in any year.
Flood Mitigation	Methods of reducing the effects of floods. These methods may be structural solutions (e.g. reservoirs) or non-structural (e.g. land- use planning, early warning systems).
Floodplain	Land adjacent to a watercourse that would be subject to repeated flooding under natural conditions.
Fluvial flooding	Flooding from a main watercourse (brooks, streams, rivers and lakes etc.) that occurs when the water features cannot cope with the amount of water draining into them, from the land. When rainfall is heavy and/or prolonged, a large amount of runoff reaches the rivers and eventually causes them to overtop their banks.
Green Infrastructure	The network of land and water that is made up of green spaces and natural elements.
Green roof	A roof with plants growing on its surface, which contributes to local biodiversity. The vegetated surface provides a degree of retention, attenuation and treatment of rainwater, and promotes evapotranspiration.
Greywater	Wastewater from sinks, baths, showers and domestic appliances. A greywater system captures this water before it reaches the sewer (or septic tank system).
Groundwater	Water that is below the surface of ground in the saturation zone.
Groundwater flooding	Occurs when water levels in the ground rise above the natural surface. Low-lying areas underlain by permeable strata are particularly susceptible.

Item	Description
Highway authority	A local authority with responsibility for the maintenance and drainage of highways maintainable at public expense.
Highways England	The Government arms length agency responsible for strategic highways, i.e. motorways and trunk roads.
Hydrological	The occurrence, circulation, distribution, and properties of the waters of the earth and its atmosphere.
Impermeable surface	An artificial non-porous surface that generates a surface water runoff after rainfall.
Infiltration	The passage of surface water though the surface of the ground / the entry of groundwater to a sewer.
Infiltration device	A device specifically designed to aid infiltration of surface water into the ground.
Infiltration trench	A trench, usually filled with stone, designed to promote infiltration of surface water to the ground.
Material Consideration	A legal term describing a matter or subject which is relevant (material) for a local authority to consider when using its powers under planning law in dealing with a planning application.
Model agreement	A legal document that can be completed to form the basis of an agreement between two or more parties regarding the maintenance and operation of sustainable water management systems.
Operating Authorities	Any body, including the Environment Agency, Internal Drainage Board, County Council and Local Authority, who have powers to make or maintain works for the drainage of land.
Ordinary Watercourses	Any watercourse that does not form part of a main river.
Permeability	A measure of the ease with which a fluid can flow through a porous medium. It depends on the physical properties of the medium, for example grain size, porosity and pore shape.
Permeable pavement	A paved surface that allows the passage of water through voids between the paving blocks/slabs.
Permeable surface	A surface formed of material that is itself impervious to water but, by virtue of voids formed through the surface, allows infiltration of water to the sub-base through the pattern of voids, e.g. concrete block paving.
Pervious surface	A surface that allows inflow of rainwater into the underlying construction or soil.
Piped system	Conduits generally located below ground to conduct water to a suitable location for treatment and/or disposal.
Pluvial Flooding	Flooding that results from rainfall generated overland flow before the runoff enters any watercourse or sewer. It is usually associated with high intensity rainfall events. Also referred to as surface water flooding.
Pollution	A change in the physical, chemical, radiological or biological quality of a resource (air, water or land) caused by man or man's activities that is injurious to existing, intended or potential uses of the resource.
Pond	Permanently wet basin designed to retain storm water and permit settlement of suspended solids and biological removal of pollutants.
Porous paving	A permeable surface allowing the passage of water through voids within, rather than between, the paving blocks/slabs.
Porous surface	A surface that infiltrates water to the sub-base across the entire surface of the material forming the surface, for example grass and gravel surfaces, porous concrete and porous asphalt.
Prevention	Site design and management to stop or reduce the occurrence of pollution and to reduce the volume of runoff by reducing impermeable areas.
Probability Event	The statistical probability of a flooding episode (event) occurring.
Protection	The flood event return period above which significant damage and possible failure of the flood defences could occur.
Public sewer	A sewer that is vested in and maintained by a sewerage undertaker.
Recovery	The process of rebuilding and rehabilitating the community following an emergency.
Reservoir	A natural or artificial lake where water is collected and stored until needed. Reservoirs can be used for irrigation, recreation, providing water supply for municipal needs, hydroelectric power or controlling water flow.
Residual Risk	The Risk that remains after risk management and mitigation measures have been implemented.
Resilience	The ability of the community, services, area or infrastructure to withstand the consequences of an incident.
Return Period	Also known as a recurrence interval is an estimate of the interval of time between events, in the instance of a 1 in 200 year storm the probability is 0.005%, however it does not mean that it will occur once, multiple instances of the same event can occur in each year.
Risk	Measures the significance of a potential event in terms of likelihood and impact. In the context of the Civil Contingencies Act 2004, the events in question are emergencies.
Risk assessment	A structured and auditable process of identifying potentially significant events, assessing their likelihood and impacts, and then combining these to provide an overall assessment of risk, as a basis for further decisions and action.

Item	Description
Risk management authorities	Organisations that have a key role in flood and coastal erosion risk management as defined by the Flood and Water Management Act (2010). These are the Environment Agency, Lead Local Flood Authorities, district Councils where there is no unitary authority, internal drainage boards, water companies, and highways authorities.
River flooding	Occurs when water levels in a channel overwhelms the capacity of the channel.
Runoff	Water flow over the ground surface to the drainage system. This occurs if the ground is impermeable, is saturated or if rainfall is particularly intense.
Separate sewer	A sewer for surface water or foul sewage, but not a combination of both.
Sequential Test	The Sequential test (NPPF Ch. 10) advocates that planners use a sequential test when considering land allocations for development to avoid flood risk where possible.
Sewer	A pipe or channel taking domestic foul and/or surface water from buildings and associated paths and hardstandings from two or more curtilages and having a proper outfall.
Sewerage undertaker	A collective term relating to the statutory undertaking of water companies that are responsible for sewerage and sewage disposal including surface water from roofs and yards of premises.
Sewers for Adoption	A guide agreed between sewerage undertakers and developers (through the House Builders Federation) specifying the standards to which private sewers need to be constructed to facilitate adoption.
Significant	Defined threshold of flooding consequence.
Soakaway	A subsurface structure into which surface water is conveyed to allow infiltration into the ground.
Source control	The control of runoff or pollution at or near its source.
Storm water	Rainwater that runs off impervious surfaces and into storm drains rather than being absorbed into the soil.
Sub-catchment	A division of a catchment, allowing runoff management as near to the source as is reasonable.
Surface water flooding	Occurs when the level of rainfall overwhelms the capacity of the drainage system to cope.
Sustainable Drainage Systems (SuDS)	A sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques.
Swale	A shallow vegetated channel designed to conduct and retain water, but may also permit infiltration; the vegetation filters particulate matter.
Treatment	Improving the quality of water by physical, chemical and/or biological means.
Wastewater	This is ‘used’ water arising from homes and businesses and includes water from sinks, toilets, bathtubs, washing machines and dishwashers – any water that has to be drained, including storm water.
Watercourse	A term including all rivers, streams ditches drains cuts culverts dykes sluices and passages through which water flows.
Wetland	A pond that has a high proportion of emergent vegetation in relation to open water.

Appendix 10 – Principle Contact Numbers

Emergency Authorities	Contact Number(s)	Web Address
Cheshire Police	Emergency: 999 Non Emergency: 101	http://www.cheshire.police.uk/
Cheshire Fire and Rescue Service	Emergency: 999 Non Emergency: 01606 868700	http://www.cheshirefire.gov.uk/
Cheshire Regional Ambulance Service NHS Trust	Emergency: 999 Non Emergency: 0845 112 0 999	https://www.nwas.nhs.uk/
Scottish Power Energy Networks	Emergency/Supply Loss: 0845 272 2424 For non emergencies please check the website for the most appropriate contact number	http://www.scottishpower.com/
National Grid	Gas Emergencies: 0800 111 999 For non emergencies please check the website for the most appropriate contact number	http://www2.nationalgrid.com/uk/
United Utilities	Leaks: 0800 330033, Water Supply: 0845 746 2200 For non emergencies please check the website for the most appropriate contact number	http://www.unitedutilities.com/
Environment Agency	Emergencies: 0345 807 060 For non emergencies please check the website for the most appropriate contact number	https://www.gov.uk/government/organisations/environment-agency
Flood Line	Tel: 0345 988 1188	
Cheshire East Council	To report a problem please call 0300 123 5020 during office hours After 5pm and before 9am, including weekends please call 0300 123 5025	http://www.cheshireeast.gov.uk

Appendix 11 - Extracts from the Land Drainage Act 1991

Section 25 Powers to require works for maintaining flow of watercourse.

(1) Subject to section 26 below, where any ordinary watercourse is in such a condition that the proper flow of water is impeded, then, unless the condition is attributable to subsidence due to mining operations (including brine pumping), the drainage board or local authority concerned may, by notice served on a person falling within subsection (3) below, require that person to remedy that condition.

(2) For the purposes of this section in its application in relation to any watercourse—

(a) the drainage board concerned is the drainage board for the internal drainage district in which the watercourse is situated; and

(b) the local authority concerned is the local authority for the area where the land as respects which the powers under this section are exercisable is situated;

but references in this section to the drainage board concerned shall, in relation to a watercourse which is not in an internal drainage district, be construed as references to the [F5Agency].

(3)Subject to subsection (4) below, a notice under this section in relation to a watercourse may be served on—

(a) any person having control of the part of the watercourse where any impediment occurs; or

(b) any person owning or occupying land adjoining that part; or

(c) any person to whose act or default the condition of the watercourse mentioned in subsection (1) above is due.

(4) No notice under this section requiring any person to carry out any work on land not owned or occupied by him shall be served without the consent of the owner and the occupier of the land, except in a case where it is not practicable, after reasonable inquiry, to ascertain the name and address of the owner or occupier.

(5) A notice under this section shall indicate—

(a) the nature of the works to be carried out and the period within which they are to be carried out; and

(b) the right of appeal to a magistrates' court and the period within which such an appeal may be brought under section 27 below.

(6) Subject to the right of appeal provided by section 27 below, if the person upon whom a notice is served under this section fails to carry out the works indicated by the notice within the period so indicated—

(a) the drainage board or local authority concerned may themselves carry out the works and recover from that person the expenses reasonably incurred by them in doing so; and

(b) without prejudice to their right to exercise that power, that person shall be guilty of an offence and liable, on summary conviction, to a fine not exceeding level 4 on the standard scale.

(7) In proceedings by the drainage board or local authority concerned for the recovery of any expenses under subsection (6) above it shall not be open to the defendant to raise any question which he could not have raised on an appeal under section 27 below.

(8) Nothing in this section shall affect the right of an owner or occupier to recover from the other, under the terms of any lease or other contract, the amount of any expenses incurred by him under this section or recovered from him by the drainage board or local authority concerned.

26 Competing jurisdictions under section 25.

(1)Before exercising their powers under section 25 above in relation to any watercourse or part of a watercourse a local authority shall, according to whether or not the watercourse or part is in an internal drainage district, notify either the drainage board for that district or the [F1Agency].

(2)Where a local authority have powers (otherwise than under section 25 above) for securing the appropriate flow of water in any watercourse under their jurisdiction, the powers conferred by section 25 above shall not be exercised by any body in relation to that watercourse except—

(a)by agreement with the local authority; or

(b)where, after reasonable notice from that body, the local authority either fail to exercise their powers or exercise them improperly.

(3)Where any watercourse is under the jurisdiction of a navigation authority, harbour authority, conservancy authority or board of conservators which are exercising their powers, section 25 above shall not apply to the watercourse except with the consent of that authority or board.

(4)Nothing in this section shall apply in relation to section 25 above in its application to main rivers by virtue section 107(3) of the M1Water Resources Act 1991 (main river functions of [F1Agency])

Land Drainage Act 1991. Section 64. Powers of entry for internal drainage boards and local authorities

(1) Any person authorised by an internal drainage board or local authority, after producing (if so required) a duly authenticated document showing his authority, may at all reasonable times—
(a) enter any land for the purpose of exercising any functions of the board or, as the case may be, any functions under this Act of that authority;
(b) without prejudice to paragraph (a) above, enter and survey any land (including the interior of any mill through which water passes or in connection with which water is impounded) and take levels of the land and inspect the condition of any drainage work on it; and
(c) inspect and take copies of any Acts of Parliament, awards or other documents which—
a. are in the possession of any internal drainage board, local authority or navigation authority;
b. relate to the drainage of land; and
c. confer any powers or impose any duties on that board or authority.
(2) A person entitled under this section to enter any land—
(d) (a)may take with him such other persons and such equipment as may be necessary; and
(e) (b)if the land is unoccupied, shall, on leaving it, leave it as effectually secured against trespassers as he found it.
(f) (3)Except in an emergency, admission to any land shall not be demanded as of right under this section, unless notice of the intended entry—
(g) has been given to the occupier; and
(h) if the land is used for residential purposes or the demand is for admission with heavy equipment, has been given not less than seven days before the demand is made.
(i) (4)Where injury is sustained by any person by reason of the exercise by an internal drainage board or local authority of any of their powers under this section, the board or authority shall be liable to make full compensation to the injured person.
(j) (5)In case of dispute, the amount of the compensation payable under subsection (4) above shall be determined by the Lands Tribunal.

(k) **Compensation Powers** Section 14A (General powers: flood risk management works) of the Land Drainage Act specifically incorporates the compensation provision in section 14 (5).

Section 23 Land Drainage Act 1991 – No person shall:

(a) Erect any mill dam, weir or other like obstruction to the flow of any ordinary watercourse or raise or otherwise alter any such obstruction: or

(b) erect any culvert that would be likely to affect flow of any ordinary watercourse or alter any culvert in a manner that would be likely to affect any such flow, without the consent in writing of the drainage board concerned.

Section 23 also includes references to the application fee (£50), that consent won't be unreasonably withheld, the two-month determination period, arbitration and exemptions.

Appendix 12 - Cheshire East Land Drainage Byelaws

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CHESHIRE EAST BOROUGH COUNCIL LAND DRAINAGE BYELAWS

The Cheshire East Borough Council under and by virtue of the powers and authority vested in them by section 66 of the Land Drainage Act 1991, do hereby make the following Byelaws which are considered necessary for [one or more of] the following purposes:-

a) securing the efficient working of a drainage system in the Council's area,
b) regulating the effects on the environment in the Council's area of a drainage system,
c) securing the effectiveness of flood risk management work within the meaning of section 14A of that Act, or
d) securing 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), together, "the Purposes":-

1. Commencement of Byelaws
These Byelaws shall come into operation at the expiration of one month beginning with the day on which they are confirmed by the Secretary of State.
2. Application of Byelaws
   a. These Byelaws shall have effect within the Area;
   b. the watercourses referred to in these Byelaws are watercourses which are for the time being vested in or under the control of the Council.
3. Control of Introduction of Water and Increase in Flow or Volume of Water
No person shall as a result of development (within the meaning of section 55 of the Town and Country Planning Act 1990 as amended ("the 1990 Act")) (whether or not such development is authorised by the 1990 Act or any regulation or order whatsoever or none of them) for any purpose by means of any channel, siphon, pipeline or sluice or by any other means whatsoever introduce any water into any watercourse in the Area so as to directly or indirectly increase the flow or volume of water in any watercourse in the Area (without the previous consent of the Council).
4. Control of Sluices etc.
Any person having control of any sluice, water control structure or appliance for introducing water into any watercourse in the Area or for controlling or regulating or affecting the flow of water in, into or out of any 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 Council with a view to securing or furthering one or more of the Purposes.
5. Fishing Nets and Angling
No person shall angle or set any nets or engines for the catching or keeping of fish in any watercourse in such a manner as to cause damage to or endanger the stability of the bank of the watercourse or to affect or impede the flow of water.
In this Byelaw "nets" includes –
   a. a stake net, bag net or keep net;
   b. any net secured by anchors and any net, or other implement for taking fish, fixed to the soil or made stationary in any other way;
   c. any net placed or suspended in any inland or tidal waters unattended by the owner or a person duly authorised by the owner to use it for fish, and any engine, device, machine or contrivance, whether floating or otherwise, for placing or suspending such a net or maintaining it in working order or making it stationary.
6. Diversion or Stopping up of Watercourses
No person shall, without the previous consent of the Council, take any action, or knowingly permit or aid or abet any person to take any action to stop up any watercourse or divert or impede or alter the level of or direction of the flow of water in, into or out of any watercourse.
7. Detrimental Substances not to be put into 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 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 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 Byelaw to remain in proximity to any 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 Byelaw shall be deemed to render unlawful the growing or harvesting of crops in accordance with normal agricultural practice.
8. Lighting of Fires
No person shall light or cause or permit to be lighted or commit any action liable to cause to be lighted any fire on any land adjoining the watercourse where such action is liable to set on fire the peat land forming the banks of the watercourse or any vegetation including trees growing on land forming the banks of the watercourse.
9. Notice to Cut Vegetation
Any person having control of any watercourse shall, upon the receipt of a notice served on him by the Council requiring him so to do, cut down and keep cut down all vegetation, including trees, growing in or on the bank of a watercourse, within such reasonable time as may be specified in the notice, and shall remove such vegetation, including trees, from the watercourse immediately after the cutting thereof.
Provided that, where a hedge is growing on the bank of a watercourse, nothing in this Byelaw shall require more than the pruning of the hedge so as to prevent it from growing over or into the watercourse, and the removal of the resultant cuttings.
10. No Obstructions within 8 Metres of the Edge of the Watercourse
No person without the previous consent of the Council shall erect any building or structure, whether temporary or permanent, or plant any tree, shrub, willow or other similar growth within 8 metres of the landward toe of the bank where there is an embankment or wall or within 8 metres of the top of the batter where there is no embankment or wall, or where the watercourse is enclosed within 8 metres of the enclosing structure.
11. Repairs to Buildings
The owner of any building or structure in or over a watercourse or on the banks thereof shall, upon receipt of a notice from the Council 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 watercourse;
b. the building or structure is causing or is in imminent danger of causing damage to the bank of the 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.

12. Control of Vermin
The occupier of any bank of a watercourse or any part thereof shall, upon being required by the Council by notice, within such reasonable time as may therein be specified, take such steps as are specified in the notice, being such steps as the Council consider necessary and practicable for preventing the bank from becoming infested by rabbits, rats, coypu, foxes and moles or any other wild mammal not being an animal listed in Schedule 5 or Schedule 6 to the Wildlife and Countryside Act 1981, but excluding the water vole from such control.
13. Damage by Animals to Banks
All persons using or causing or permitting to be used any bank of any watercourse for the purpose of grazing or keeping any animal thereon shall take such steps including fencing as are necessary and reasonably practicable and shall comply with such reasonable directions as may from time to time be given by the Council to prevent the bank or the channel of the watercourse from being damaged by such use.
Provided that nothing in this Byelaw shall be deemed to affect or prevent the use of, for the purpose of enabling animals to drink at it, any place made or to be made or constructed as approved by the Council.
14. Vehicles not to be Driven on Banks
No person shall use or drive or permit or cause to be used or driven any cart, vehicle or implement of any kind whatsoever on, over or along any bank of a watercourse in such manner as to cause damage to such bank.
15. Banks not to be used for Storage
No person shall use or cause or permit to be used any bank of any watercourse for the purpose of depositing or stacking or storing or keeping any rubbish or goods or any material or things thereon in such a manner as by reason of the weight, volume or nature of such rubbish, goods, material or things causes or is likely to cause damage to or endanger the stability of the bank or channel of the watercourse or interfere with the operations or access of the Council or the right of the Council to deposit spoil on the bank of the watercourse.
16. Not to Dredge or Raise Gravel, Sand etc.
No person shall without the previous consent of the Council dredge or raise or take or cause or permit to be dredged or raised or taken any gravel, sand, ballast, clay or other material from the bed or bank of any watercourse.
17. Fences, Excavations, Pipes etc.
No person shall without the previous consent of the Council -
a. place or affix or cause or permit to be placed or affixed any gas or water main or any pipe or appliance whatsoever or any electrical main or cable or wire in or over any watercourse or in, over or through any bank of any watercourse;
b. cut, pare, damage or remove or cause or permit to be cut, pared, damaged or removed any turf forming part of any bank of any watercourse, or dig for or remove or cause or permit to be dug for or removed any stone, gravel, clay, earth, timber or other material whatsoever forming part of any bank of any watercourse or do or cause or permit to be done anything in, to or upon such bank or any land adjoining such bank of such a nature as to cause damage to or endanger the stability of the bank;
c. make or cut or cause or permit to be made or cut any excavation or any tunnel or any drain, culvert or other passage for water in, into or out of any watercourse or in or through any bank of any watercourse;
d. erect or construct or cause or permit to be erected or constructed any fence, post, pylon, wall, wharf, jetty, pier, quay, bridge, loading stage, piling, groyne, revetment or any other building or structure whatsoever in, over or across any watercourse or in or on any bank thereof;
e. place or fix or cause or permit to be placed or fixed any engine or mechanical contrivance whatsoever in, under or over any watercourse or in, over or on any bank of any watercourse in such a manner or for such length of time as to cause damage to the watercourse or banks thereof or obstruct the flow of water in, into or out of such watercourse.

Provided that this Byelaw shall not apply to any temporary work executed in an emergency but a person executing any work so excepted shall, as soon as practicable, inform the Council in writing of the execution and of the circumstances in which it was executed and comply with any reasonable directions the Council may give with regard thereto.
18. Interference with Sluices
No person shall without lawful authority interfere with any sluice, or other water control structure or appliance for controlling or regulating the flow of water in, into or out of a watercourse.
19. Mooring of Vessels
No person shall moor or place any vessel in any watercourse or to or upon the bank of any watercourse in such manner or by such method as to cause or be likely to cause injury to such bank or in such manner as materially to obstruct or impede the free flow of water in, into or out of any watercourse.
20. Unattended Vessels
No person shall leave any vessel unattended without taking due care to prevent such vessel from materially obstructing or impeding the free flow of water in, into or out of any watercourse or any sluice in any bank.
21. Removal of Sunken Vessels
No person who is the owner of a vessel sunk, stranded, damaged or adrift in a watercourse or, in the case of a sunken vessel which is abandoned, who was the owner immediately before the abandonment shall, after ten days from the day on which the Council serves on him notice in writing that the vessel is causing obstruction, permit the vessel to remain in the watercourse in such a manner as to impede or harmfully divert the flow of water in, into or out of the watercourse.
22. Navigation of Vessels
No person shall navigate any vessels in such a manner or at such a speed as to injure the bank of any watercourse and where the Council have by notice erected at any place limited the speed of vessels passing such place no person shall navigate a vessel at a speed over the bed of the watercourse greater than the speed so limited.
Provided that the Council shall not exercise their powers under this Byelaw so as to limit the speed of -

a. vessels in any tidal waters except after consultation with the Department for Transport, or
b. vessels navigating waterways of the Canal and River Trust for which speed limits are prescribed by the Byelaws of such Trust.

23. Damage to Property of the Council
No person shall interfere with or damage any bank, bridge, building, structure, appliance or other property of or under the control of the Council.
24. Defacement of Notice Boards
No person shall deface or remove any notice Board, notice or placard put up by the Council.
25. Obstruction of the Council and Officers
No person shall obstruct or interfere with any member, officer, agent or servant of the Council exercising any of his functions under the Act or these Byelaws.
26. Savings for Other Bodies
Nothing in these Byelaws shall -
a. conflict with or interfere with the operation of any Byelaw made by the Environment Agency or an internal drainage board or of any navigation, harbour or conservancy authority but no person shall be liable to more than one penalty or in the case of a continuing offence more than one daily penalty in respect of the same offence;
b. restrict, prevent, interfere with or prejudice the exercise of any statutory rights or powers which are now or hereafter may be vested in or exercised by -
I. any public utility undertaking carried on by a local authority under any Act or under any Order having the force of an Act;
II. the undertakings of the Environment Agency and of any water undertaker or sewerage undertaker;
III. any public gas transporter within the meaning of part I of the Gas Act 1986;
IV. any navigation, harbour or conservancy authority;
V. any person who acts as the operator of a relevant railway asset, with respect to the construction, use or maintenance and repair of any such asset, or the free, uninterrupted and safe use of any such asset and the traffic (including passengers) thereof;
VI. any local authority;
VII. any highway authority for the purposes of the Highways Act 1980 (as amended by any subsequent enactment) in relation to any highway whether or not maintainable at public expense;
VIII. any undertaking engaged in the operation of a telecommunications system;
IX. a relevant airport operator within the meaning of Part V of the Airports Act 1986;
X. the Civil Aviation Authority and any subsidiary thereof;
XI. the Canal and River Trust;
XII. the Coal Authority;
c. restrict, prevent, interfere with or prejudice any right of a highway authority to introduce into any watercourse surface water from a highway, for which it is the highway authority;
d. restrict, prevent, interfere with or prejudice any right of a licence holder within the meaning of Part I of the Electricity Act 1989 to do anything authorised by that licence or anything reasonably necessary for that purpose;
e. affect any liability arising otherwise than under or by reason of these Byelaws.

27. Saving for Crown Lands
a. Nothing in these Byelaws shall operate to prevent the removal of any substance on, in or under (or the erection of any structure, building or machinery or any cable, wire or pipe on, over or under) lands belonging to Her Majesty in right of the Crown by any person thereunto authorised by the Crown Estate Commissioners.

28. Arbitration
a. Where by or under any of these Byelaws any person is required by a notice in writing given by the Council to do any work to the satisfaction of the Council or to comply with any directions of the Council, he may within 21 days after the service of such notice on him give to the Council a counter-notice in writing objecting to either the reasonableness of or the necessity for such requirement or directions, and in default of agreement between such person and the Council the dispute shall, when the person upon whom such notice was served is a drainage or local authority be referred to the Secretary of State whose decision shall be final, and in any other case shall be referred to the arbitration of a single arbitrator to be appointed in default of agreement by the President of the Institution of Civil Engineers on the application of either party. Where such a counter-notice has been given to the Council the operation of the notice shall be suspended until either agreement has been reached or the dispute has been determined by arbitration in accordance with the provisions of this Byelaw;
b. where by or under these Byelaws any person is required by a notice in writing given by the Council to do any work to the satisfaction of the Council or to comply with any directions of the Council and any dispute subsequently arises as to whether such work has been executed or such directions have been complied with, such dispute if it arises between a drainage authority or local authority and the Council shall be referred to the Secretary of State whose decision shall be final, and in any other case shall be referred to the arbitration of a single arbitrator to be appointed in default of agreement by the President of the Institution of Civil Engineers on the application of either party;
c. where by or under Byelaws 3, 6, 10, 16 or 17 any person is required to refrain from doing any act without the consent of the Council such consent shall not be unreasonably withheld and may be either unconditional or subject to such reasonable conditions as the Council may consider appropriate and where any dispute arises as to whether in such a case the consent of the Council is being unreasonably withheld, or as to whether any conditions subject to which consent is granted are unreasonable, such dispute shall if it arises between a drainage authority or local authority and the Council be referred to the Secretary of State whose decision shall be final, and in any other case such dispute shall be referred to the arbitration of a single arbitrator to be appointed in default of agreement by the President of the Institution of Civil Engineers on the application of either party.

29. Notices
Notices and any other documents required or authorised to be served or given under or by virtue of these byelaws shall be served or given in the manner prescribed by section 71 of the Act.
30. Limitation
    a. Nothing in these Byelaws shall authorise the Council to require any person to do any act, the doing of which is not necessary for securing or furthering one or more of the Purposes, or to refrain from doing any act, the doing of which does not affect the environment, or adversely affect either (i)the efficient working of the drainage system of the area (ii)the effectiveness of flood risk management work within the meaning of section 14A of the Land Drainage Act 1991, or (iii) the effectiveness of works done in reliance on section 38 or 39 of the Flood and Water Management Act 2010.
    b. If any conflict arises between these Byelaws and
    c. sections 61A to E of the Land Drainage Act 1991 (which relates to the Council's duties with respect to the environment), or
    d. the Conservation of Habitats and Species Regulations 2010 SI 2010/490

    the said Act and the said Regulations shall prevail.
31. Interpretation
    In these Byelaws, unless the context otherwise requires, the following expressions shall have the meaning hereby respectively assigned to them, that is to say:-
    "the Act" means the Land Drainage Act 1991;
    "Animal" includes any horse, cattle, sheep, deer, goat, swine, goose or poultry;
    "Area" means the area under the jurisdiction of the Council;
    "Bank" includes any bank, cross bank, wall or embankment adjoining or confining or constructed for the purpose of or in connection with any watercourse and includes all land between the bank and the low water mark or level of the water in the watercourse as the case may be and where there is no such bank, cross bank, wall or embankment includes the top edge of the batter enclosing the watercourse;
    "Consent of the Council" means the consent of the Council in writing signed by a proper officer of the Council;
    "Council" means the Council;
    "Occupier" means in the case of land not occupied by any tenant or other person the person entitled to the occupation thereof;
    "Owner" includes the person defined as such in the Public Health Act 1936;
    "Relevant railway asset" means
        a. a network, operated by an "approved operator" within the meaning of section 25 of the Planning Act 2008,
        b. a station which is operated in connection with the provision of railway services on such a network, or
        c. a light maintenance depot.

    Expressions used in this definition and in the Railways Act 1993 have the same meaning in this definition as they have in that Act, ("railway" not having its wider meaning) and a network such as is described in (a) above shall not cease to be such a network where it is modified by virtue of having any network added to it or removed from it.
    "The Secretary of State" means the Secretary of State for the Department for Environment, Food and Rural Affairs;
    "Vegetation" means trees, willows, shrubs, weeds, grasses, reeds, rushes, or other vegetable growths;
    "Vessel" includes any ship, hovercraft (as defined by the Hovercraft Act 1968), lighter, keel, barge, tug, launch, houseboat, pleasure or other boat, aircraft, randan, wherry, skiff, dinghy, shallop, punt, yacht, canoe, raft, float of timber or any other craft whatsoever, and howsoever worked, navigated or propelled;
    "Water control structure" means a structure or appliance for introducing water into any watercourse and for controlling or regulating or affecting flow, and includes any sluice, slacker, floodgate, lock, weir, dam, pump, or pumping machinery;
    and other expressions shall have the same meanings as in the Act.

THE COMMON SEAL OF THE
CHESHIRE EAST BOROUGH COUNCIL

was hereunto affixed on the

in the presence of:

Authorised Signatory

PENALTY NOTE
By section 66(6) of the Act every person who acts in contravention of or fails to comply with any of the foregoing Byelaws is liable on summary conviction in respect of each offence to a fine not exceeding the amount prescribed from time to time for level 5 on the standard scale referred to in section 37 of the Criminal Justice Act 1982 and a further fine not exceeding Forty pounds for every day on which the contravention or failure is continued after conviction. By section 66(7) of the Act if any person acts in contravention of or fails to comply with any of these Byelaws the Council may without prejudice to any proceedings under section 66(6) of the Act take such action as may be necessary to remedy the effect of the contravention or failure and may recover the expenses reasonably incurred by it in doing so from the person in default.

Appendix 13 - **Cheshire East Flood Mitigation Policy**

Cheshire East Flood Mitigation Policy

Cheshire East Council will assist wherever possible during times of flooding, but this will be done on the basis of vulnerability and following an assessment of risk.

Occupiers of property in at risk areas are strongly urged to make their own flood preparations in advance in order to improve the resilience of their property. The Council encourages property owners to seek grant assistance for flood mitigation, where such monies are available, and will support as far as possible any such application.

The local authority has limited resources, but will endeavour to provide the best possible response.

Note:

1. Although there is not a legal duty for the Council to issue sandbags etc either before or during a flood the Council may be able to offer assistance in certain situations.

2. Sandbags or other associated materials will be supplied, as resources permit when the threat of serious, immediate flooding exists. They are not issued in advance for the future protection of vulnerable properties.

3. The Council reserves the right to amend its Flood Mitigation Policy at any time where it feels this to be appropriate.

The National Flood Forum is a non-profit organisation set up by people with direct experience of flooding. Further information about flood prevention products and advice on recovery from flooding can be found at www.floodforum.org.uk (Tel 01299 403055)'

For details of what to do before, during and after a flood, please visit the Environment Agency website using the following links:

Before

http://publications.environment-agency.gov.uk/pdf/FLHO1007BNET-e-e.pdf

During

http://publications.environment-agency.gov.uk/pdf/FLHO1007BNEV-e-e.pdf

After

http://publications.environment-agency.gov.uk/pdf/FLHO1007BNER-e-e.pdf

References

- Civil Contingencies Act 2004: www.legislation.gov.uk/ukpga/2004/36/contents
- Environment Act 1995: www.legislation.gov.uk/ukpga/1995/25/contents
- Flood and Water Management Act 2010: www.legislation.gov.uk/ukpga/2010/29/contents
- Flood Risk Regulations 2009: www.legislation.gov.uk/uksi/2009/3042/contents/
- Land Drainage Act 1991: http://www.legislation.gov.uk/ukpga/1991/59/contents
- Water Resources Act 1991: http://www.legislation.gov.uk/ukpga/1991/57/contents
- Catchment Flood Management Plans: www.environment-agency.gov.uk/research/planning/33586.aspx
- Defra's policy statement: www.defra.gov.uk/publications/2011/03/30/pb13278-erosion-management/
- Environment Agency project appraisal: www.environment-agency.gov.uk/research/planning/116707.aspx
- Environment Agency statutory guidance on cooperation: www.environment-agency.gov.uk/research/policy/130073.aspx#
- FCERM-AG: www.environment-agency.gov.uk/research/planning/116705.aspx
- Flood and Coastal Resilience Partnership Funding: www.environment-agency.gov.uk/research/planning/33700.aspx
- Guide to the SEA: www.communities.gov.uk/publications/planningandbuilding/practicalguidesea
- HM Treasury Green Book: www.hm-treasury.gov.uk/data_greenbook_guidance.htm
- Information about the English National Strategy: http://www.environment-agency.gov.uk/research/policy/130073.aspx#
- Landform early action projects: http://www.ciria.com/landform/pdf/Early%20Action%20_Final_.pdf
- LGG Preliminary Framework: http://www.communities.idea.gov.uk/c/2050378/home.do
- LG - Data Handling requirements: http://www.idea.gov.uk/idk/aio/9048091
- LG - funding for flood risk management: http://www.idea.gov.uk/idk/core/page.do?pageId=22784381
- LG - Improvement and Development website: http://www.idea.gov.uk/idk/core/page.do?pageId=17242169
- Making Space for Water: http://archive.defra.gov.uk/environment/flooding/documents/policy/strategy/strategy-response1.pdf
- National Strategy: http:// www.environment-agency.gov.uk/research/policy/130073.aspx#
- National Strategy SEA: https//consult.environment-agency.gov.uk/portal/ho/flood/fcerm/strategy?pointId=1287746273433
- Pitt Review: http://archive.cabinetoffice.gov.uk/pittreview/thepittreview/final_report.htm
- PPS25: http://www.communities.gov.uk/publications/planningandbuilding/pps25floodrisk
- Scrutiny of flooding toolkit: http://www.idea.gov.uk/idk/aio/24925049
- SEA: https://consult.environment-agency.gov.uk/portal/ho/flood/fcerm/strategy?pointId=1287746273433
- Cheshire East planning Policy http://www.sthelens.gov.uk/what-we-do/planning-and-building-control/planning/
- Cheshire East Flooding Web page: http://www.sthelens.gov.uk/website/page.htm?id=5225
- UKCP09: http://ukclimateprojections.defra.gov.uk/

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