

Strategic Management Team

Date of meeting: 10 June 2014

Author: Alan Carver



Title	Wigan Local Flood Risk Management Strategy	
State if other officer(s) are to attend	Mark Tilley / Alan Carver	
Anticipated duration of item at the team	15 minutes	
Does this item need to go to the following?	Yes/No	Date
Opposition Briefings	No	
MP Briefing	No	
Cabinet or Informal Cabinet	Yes	Scrutiny – 25 June 2014 Cabinet – 26 June 2014
Executive Summary		
<p>The Flood and Water Management Act 2010 has placed a number of roles and responsibilities on Wigan Council as a Lead Local Flood Authority. The preparation of the Local Flood Risk Management Strategy, sets out how the Council are preparing for floods in the future.</p> <p>This Local Flood Risk Management Strategy therefore sets out what flood risk issues Wigan faces, who has responsibilities, what can be achieved in managing flood risk, the measures likely to be required and the resources needed to support this. It also sets out how flood issues will be monitored and managed.</p> <p>Flooding can change places and lives overnight. It is important that Wigan Council, its people and economy is well prepared and is as resilient to the range of flood risks affecting the Borough as possible. Wigan Council has three types of flood risk for which it has specific responsibility, these are flooding from surface water, ordinary watercourses and groundwater. The Council will work with other flood risk management authorities including the Environment Agency, United Utilities and other partners and stakeholders including developers, local businesses and residents, neighbouring local authorities and emergency services in delivering its duties and powers.</p> <p>Flood risk is a dynamic issue and future influences on flood risk in the Borough include:</p>		

Confident Place, Confident People.

- More extreme and intense rainfall events through predicted climate change impacts;
- Investment in flood risk management infrastructure;
- The location of new development and change in the urban environment;
- The location and quality of green infrastructure including trees and peat moorland;
- Agricultural practises and riparian ownership; and
- Greater awareness and acceptance of risk and preparedness for flood events.

The Council's strategy will be driven by a specific delivery plan with an annually updated work programme including:

- Studies and investigations to ensure targeting of activities and proposals are well planned and based on good evidence;
- On-going maintenance activities for flood risk management assets, land and water bodies and highways;
- Partnership projects with other risk management authorities including the Environment Agency and United Utilities to ensure that more effective and integrated drainage and flood resilience strategies can be delivered for all sources of flood risk;
- Development led sustainable drainage systems and flood defence measures;
- Local authority asset improvement programmes; and
- Local community projects including environmental improvements, property level flood resilience, awareness and preparedness activities.

A series of strategic projects have been identified for development where they will help address the Borough's most significant flood risks and enable opportunities for strategic partnership working and investment in flood risk management to be maximised.

The strategy will be subject to monitoring and evaluation of progress against agreed indicators, targets and objectives.

Wigan Local Flood Risk Management Strategy



Revision Schedule

Wigan Council

Wigan Flood Risk Management Strategy

Revisions

Rev	Date	Details	Prepared	Reviewed	Approved
1	24/04/14	Initial Report for Stakeholder Consultation	LM	AC	MT
2	05/06/14	Amendments made in line with consultation response	LM	AC/NC	MT
3	11/06/14	Amendments made following consultation comments from the Civil Contingencies and Resilience Unit.	LM	AC	MT
4	07/07/14	Amendments to action plan following cabinet approval.	LM	AC	MT
5	29/6/15	LLFA as statutory consultee for major planning applications regarding SuDS including Proof of Concept requirements.	LM	AC	MT
6	26/10/16	Flooding hotspots amended. Information added to Appendix F with regards to changes the Council have made since Storm Eva.	LM	AC	MT
7	22/11/16	Amendments to government weblinks	LM	AC	MT
8	12/03/18	Update on works completed	LM	AC	MT

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FOREWORD AND FLOOD ADVICE TO RESIDENTS

Flooding can be devastating for anyone affected by it. Floods can damage or destroy your property and flood water may contain sewerage and other contaminants which might be a risk to health.

It is important therefore to understand what can be done to help manage flooding. This document sets out the approach to flood risk management within Wigan Borough. It highlights some of the work that is already being done and some of the actions that will be taken to manage flooding and flooding incidents.

What this document does not do is commit the Council or anyone else to prevent flooding. Flooding incidents will occur no matter what happens and it would be wrong to tell people that it can all be prevented.

What to do

Property owners are responsible for protecting their own properties in the event of flooding. If you are a tenant it will be your landlord who has this responsibility. Commercial premises are expected to carry out their own flood risk assessment and make their own arrangements for flood protection.

- Checking if they are at risk of flooding – information is available from Wigan Council or the Environment Agency.
- Registering with the flood warning service if they are at risk – this can be done by contacting the Environment Agency on 0345 988 1188
- Ensuring that they are prepared in the event of a flood
- Investing in flood protection measures where possible
- Responding to consultations and flood strategies and flood defence schemes
- If their property is adjacent to a watercourse, checking if they are riparian owners. A riparian owner is a landowner on, or adjacent to the boundaries of whose land lies any watercourse, (Land Registry details should confirm this). Changes made to the watercourse, such as protecting property from it flooding, need to be discussed with the Environment Agency. Riparian owners are also responsible for maintaining the beds and banks of the watercourse.

Sandbags

Wigan Council does not have a legal obligation to store and provide sandbags, unless the flooding is from a highway or council land. However, the council will, where possible, provide sandbags and equipment to protect people or property where there is an immediate threat of internal flooding to residential properties.

Sandbags are of no use once a property is already flooded. Residents should concentrate on protecting themselves and their belongings including moving precious items to places of safety. If properties have a known flood risk then the council will encourage residents to install purpose made flood protection products, such as flood boards, flood doors, non-return valves for plumbing and air brick covers rather than rely on sand bags.

The council promotes a policy of self-help for residents at risk of flooding, and unfilled sandbags and sand can be purchased from most DIY stores and Builders Merchants. However, if there is a flood expected then demand may exceed supply as people rush to buy them. For more information on how to prepare for a flood please visit: [prepare for a flood.](#)

Executive Summary

Flooding can change places and lives overnight. It is important that Wigan Council, its people and economy is well prepared and is as resilient to the range of flood risks affecting the Borough as possible. The Flood and Water Management Act 2010 sets out a range of roles and responsibilities for Wigan Council as a Lead Local Flood Authority (LLFA) which includes preparing a Flood Risk Management Strategy setting out local flood risks and how the LLFA proposes to address them. As an LLFA, Wigan Council has three types of flood risk for which it has specific responsibility i.e. flooding from surface water, ordinary watercourses and groundwater. The council will work with other flood risk management authorities and with other partners and stakeholders including developers, local businesses and residents, neighbouring local authorities and emergency services in carrying out its duties and powers.

Flood risk is a dynamic issue and future influences on flood risk in the borough include:

- More extreme and intense rainfall events through predicted climate change impacts
- Investment in flood risk management infrastructure
- The location of new development and change in the urban environment
- The location and quality of green infrastructure including trees and peat moorland
- Agricultural practises and riparian ownership
- Greater awareness and acceptance of risk and preparedness for flood events.

The Council's strategy will be driven by a specific delivery plan with an annually updated work programme including:

- Studies and investigations to ensure targeting of activities and proposals are well planned and based on good evidence.
- On-going maintenance activities for flood risk management assets, land and water bodies and highways.
- Partnership projects with other Risk Management Authorities to ensure more effective and integrated drainage and flood resilience strategies can be delivered for all sources of flood risk.
- Development led sustainable drainage systems and flood defence measures.
- Local authority asset improvement programmes.
- Local community projects including environmental improvements, property level flood resilience, awareness and preparedness activities.

A series of strategic projects have been identified for development where they will help address the borough's most significant flood risks and enable opportunities for strategic partnership working and investment in flood risk management to be maximised.

The strategy will be subject to monitoring and evaluation of progress against agreed indicators, targets and objectives.

1. Introduction

Background

Flooding impacts on communities across the UK. Everyone is affected by flooding issues to a greater or lesser degree – whether that is through direct impacts on homes and businesses, disruption to transport and infrastructure or via increased insurance costs. Recent history has demonstrated the difficulties faced in preparing for, responding to and recovering from flooding incidents.

Despite the investment and resources already focused on managing flood risk, flooding is expected to increase due to climate change. It is not possible to prevent all flooding, but there are actions that can be taken to manage these risks and reduce the impacts on communities.

Why this document is being produced

The Flood and Water Management Act 2010 has placed a number of roles and responsibilities on unitary authorities such as Wigan Council that have been designated as a Lead Local Flood Authority. The preparation of this Local Flood Risk Management Strategy, setting out how we are preparing for floods in the future, is just one of the duties placed on Wigan Council under this legislation.

Section 9 of the Flood & Water Management Act 2010 details what Local Flood Risk Management Strategies (LFRMSs) should contain. The requirements are outlined in the table below.

FWMA (2010) Requirement	Where can this be found?
The risk management authorities in the borough,	Chapter 4
The flood risk management functions that may be exercised by those authorities in relation to the borough,	Chapter 4
The objectives for managing local flood risk (including any objectives included in the authority's flood risk management plan prepared in accordance with the Flood Risk Regulations 2009),	Chapter 3
The measures proposed to achieve those objectives,	Chapter 5 and Chapter 6
How and when the measures are expected to be implemented,	Chapter 5 and Appendices D and F
The costs and benefits of those measures, and how they are to be paid for	Chapter 5 and Chapter 7
The assessment of local flood risk for the purpose of the strategy,	Chapter 2
How and when the strategy is to be reviewed, and	Chapter 8
How the strategy contributes to the achievement of wider environmental objectives	The accompanying Strategic Environmental Assessment

This Local Flood Risk Management Strategy therefore sets out what flood risk issues Wigan faces, who has responsibilities, what we are seeking to achieve in managing flood risk, the measures likely to be required and the resources needed to support this. It also sets out how we monitor flood issues and management performance. It is intended to be a flexible strategy that supports relevant actions being taken in appropriate places.

How this strategy is developed

This Local Flood Risk Management Strategy is not focused on flood prevention but on the wider approach of flood management. It shows how communities can be more involved in local flood risk management and emphasises the need to balance national and local activities and funding.

The draft Strategy is subject to consultation and engagement with relevant partners, communities and the general public. It is also accompanied by a Strategic Environmental Assessment to ensure the strategy is as sustainable as possible. The principles behind the strategy are:

- a. Flooding is a natural event that will occur despite efforts to prevent it. Focus should be on finding ways to reduce the disruption that flooding causes and measures to prevent it.
- b. Flood damage creates public and private financial costs. Effective flood risk management can reduce long-term flood damage costs.
- c. Decisions on where local resources are focused should be evidence based and made against clear criteria.
- d. It is vital that stakeholder's knowledge of flood risk is improved.
- e. The LLFA has a duty to inform householders of their risk and advise what steps they can take to make their property more resilient.
- f. No single organisation can effectively manage flood risk across the borough; co-operation among relevant public agencies is essential for the success of long term comprehensive flood risk management.
- g. New developments should not increase flood risk and should also seek ways in which to reduce the flood risk already present.
- h. Small and major projects impact on flood risk, and must be managed in order to ensure the risk of flooding does not increase.

Relationship with other plans

The Local Flood Risk Management Strategy is linked to other documents, plans and strategies. Some of these are set out in the table below.

Plan/Strategy	Purpose	Relationship to LFRMS
European Floods Directive	This requires EU Member States to assess if all water courses and coastlines are at risk from flooding, map flood extent and assets and humans at risk in these areas, and take adequate and coordinated measures to reduce this risk.	The overarching European approach to flooding. It commits the UK to six year planning cycles which includes Preliminary Flood Risk Assessments, Hazard and Risk Maps and this Flood Risk Management Strategy.
Water Framework Directive	This commits Member States to achieving good qualitative and quantitative status of all water bodies, including addressing physical limitations / failing hydrological elements in order to improve ecologically functional aquatic habitats. The objective the heavily modified or	Actions identified within the strategy that may affect water quality may be subject to a specific assessment. How the WFD works in practice at a regional level is set out in the North West River Basin Management Plan. The

	artificial water bodies predominant in Wigan is to reach good ecological potential by 2017	LFRRMS should take a catchment based approach. There are a number of waterbody scale hydromorphology mitigation measures that can only be delivered by making positive adaptations to adjust this heavily modified and pumped catchment.
Preliminary Flood Risk Assessment (PFRA)	The PFRA is a high level screening exercise to determine whether there is a local flood risk within the Local Lead Flood Authority's area based on historic and potential future flood risk. Wigan Council produced a PFRA in 2011.	Provides historical context, flood information and risk identification for the borough.
Strategic Flood Risk Management Plan (SFRA)	Strategic Flood Risk Assessments comprise relevant data, guidance and recommendations for flood risk issues at a local level and are a useful planning tool in helping to manage flood risk in an effective and sustainable manner. They look beyond the basic flood risk zones identified by the Environment Agency to assess and identify all the different levels of flood risk (high, medium or low) and forms of flooding from all sources - rivers, canals, reservoirs, surface water, sewers and groundwater are explored.	In-depth information to inform where the main flood issues are for Wigan Borough. This helps set the context within which flood risk management for Wigan will take place.
Surface Water Management Plan	A tool to identify areas more vulnerable to surface water flooding, and to identify measures to reduce the flooding, recognising that it is not possible to eliminate flooding altogether	Wigan was involved in Stage 1 (considering GM overall) but not stage 2 (specific locations for surface water issues). The GM approach identified that Wigan did not have a specific issue related to a geographic area.
Catchment Flood Management Plan (CFMP)	CFMPs give an overview of the flood risk across each river catchment. They recommend ways of managing those risks now and over the next 50-100 years. CFMPs consider all types of inland flooding, from rivers, ground water, surface water and tidal flooding, but not flooding directly from the sea.	Wigan is affected by different CFMPs (Douglas and Mersey Estuary) and the issues and approaches outlined within them will inform how we respond locally to flood issues.
River Basin Management Plan	The River Basin Management Plans describe the river basin district, and the pressures that the water environment faces. It shows what this means for the current state of the water environment in the river basin district, and what actions will be taken to address the pressures. It sets out what improvements are possible by 2015 and how the actions will make a difference to the local environment - the catchments, estuaries, the coast and groundwater.	Wigan falls under the North West River Basin Management Plan. Any actions taken will need to be in accordance with it.

Flood Water Management Act	This legislation implements the recommendations from Sir Michel Pitt's Review of the 2007 floods and places a series of responsibilities on councils. The main aim of the Act is to improve flood risk management.	It is this Act that places the requirement on Wigan Council to produce a Local Flood Risk Management Strategy.
Wigan Core Strategy	This is the strategic local plan for the borough. It sets out the spatial vision for the borough through to 2026, and a range of strategic objectives and policies.	This strategy sets out policies to deal with new development. This includes specific policies in relation to water and flooding. These will directly impact on flood risk management within the borough.
National Planning Policy Framework	This framework acts as guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications.	The NPPF highlights that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere
National Flood & Coastal Erosion Risk Management Strategy for England	The strategy exists to ensure that government, the Environment Agency, local authorities, water companies, internal drainage boards and other organisations that have a role in flood and coastal erosion risk management understand each other's roles and co-ordinate how they manage these risks. It fulfils one requirement of the Flood and Water Management Act 2010	The NFCERMS aims to bring organisations together across wider areas and locally. Wigan needs to ensure it is linked appropriately with other organisations to ensure this happens.
Shoreline Management Plans		Wigan is not affected directly by SMPs as it has no shoreline. However, neighbouring and nearby authorities do, and there may be knock-on issues both from these areas and in terms of funding availability.
Environment Agency Flood Risk Management Plan	The Environment Agency Flood Risk Management Plans highlight the hazards and risks of flooding from rivers, the sea, surface water, groundwater and reservoirs, and set out how Risk Management Authorities work together with communities to manage flood risk.	These will directly impact on flood risk management within the borough.
Borough Multi Agency Flood Plan (MAFP)	The purpose of the MAFP is to provide a flexible framework for a coordinated multi-agency response to a flood incident.	It is related to the FRMS as it outlines more detailed arrangements for responding to flooding. It is in draft stages (template approved at GM level), but will be implemented in Wigan later this year.

2. Flood risk in Wigan

Sources of flooding

There are several sources of flooding but the two main sources in Wigan are:

- Fluvial flooding – this happens when the water in a river, stream or other watercourse exceeds the capacity of the river channel and causes overtopping or a breach
- Surface water flooding (sometimes referred to as “pluvial”) – this occurs when rainwater exceeds the capacity of the drainage system (this includes snow and other precipitation which is on the surface of the ground, whether moving or not, and has not entered a watercourse, public sewer or drainage system).

Other potential sources are:

- Coastal/Tidal flooding – as Wigan is not a coastal area and its rivers are not tidal so this does not apply. However, neighbouring areas may be subjected to this and consequences may impact on the borough (such as displaced people for instance).
- Sewer flooding – when sewers are overwhelmed due to capacity issues with surface water flows vastly existing foul water. Wigan has been identified as being in the top 5 worst districts in the North West for sewer flooding. However, this is more often than not in relation to other flooding incidents such as surface water flooding.
- Groundwater flooding – when water levels in the ground rise above the surface. Some of Wigan Borough has aquifers underneath so this is a possibility although certain geological conditions need to be met for this to occur.
- Reservoir/Dam flooding – when a reservoir or dam fails. This is considered extremely unlikely. However, reservoir flooding may occur if Rivington and Anglezark reservoirs are breached for instance.
- Canal flooding – when a man made canal overflows or its banks fail. This could occur with the Leeds/Liverpool and Bridgewater canals which run through Wigan Borough. These are closed systems and heavily controlled but breaching can occur. Usually there is an association with other watercourses such as the reservoirs and rivers that feed them.
- Coincidental flooding – a combination of any of the above. E.g. blocked sewers causing surface water to struggle to drain away..

Flooding in Wigan Borough

Wigan has an extensive network of rivers and brooks. The Leeds Liverpool Canal and the Bridgewater canal also run through the borough. Combined with a large number of towns and urbanised areas, there is a risk of flooding from a range of different sources.

Historic Record

The recent Preliminary Flood Risk Assessment (PFRA) highlights a historical record of approximately 40,097 flood incidents within Wigan. This information has been gathered from dataset from the council, Environment Agency and United Utilities. The map on the following page is Wigan's historic flood map giving an indication of the extent of incidents in the borough.

While there have been many incidences of flooding, there are no large areas of the borough at risk of flooding as there are in many other parts of the North West. Many of the known flood incidences in the borough have been very localised, focusing on one or more streets rather than a large area. In part this is due to actions already taken. Some examples include Beresford Street, the Saddle junction and River Douglas in Wigan, Westleigh Brook in Leigh and Millingford Brook in Ashton are summarised in the following table.

Area	Issue	Intervention	Future Protection
<p>Beresford Street, Wigan</p>	<p>Flooding has occurred at this location for a number of years, most notably on the 22nd June 2012 with 14 properties flooding internally and water 300mm deep in the turning circle at Miry Lane Industrial Estate.</p> <p>The primary source of flood risk is caused by Barley Brook which is a main river. The main cause of flooding in 2012 has been attributed to a build up of debris in a section of culvert within the cartilage of Pagefield Industrial Estate, resulting in surcharging of the culvert and the highway drainage that discharges into the culvert.</p>	<p>The full lengths of the culvert should be inspected every 12 months for conveyance issues e.g. build up of silt and debris within the section between Miry Lane and the canal siphon inspected every 3 months for the next 2 years to monitor this critical section.</p> <p>The section of culvert owned by the Canal and River Trust including the Siphon needs to be inspected as per the Trusts current regime to limit the likelihood of a similar event.</p> <p>This will provide a solution to the flooding problem as debris and silt was found to be the main cause.</p>	<p>The Environment Agency (EA) completed a flood risk mapping study of Barley Brook and have concluded that there is no risk of flooding up to a 10% (1 in 10 year return period) flood event to the properties on Beresford Street and Gorman Street as long as the culvert and canal siphon remains clear.</p>
<p>Saddle Junction, Wigan</p>	<p>The flooding that occurs at Saddle Junction is primarily a surface water issue, caused by sewer exceedance flows from the surrounding impermeable areas.</p> <p>Overland flows tend to cause flood water to accumulate at the low point beneath the railway arch.</p> <p>Fluvial flood risk from the River Douglas also poses significant risk to the area.</p>	<p>This Wigan Council led project involved the installation of surface water attenuation tanks as part of the redevelopment of the Saddle Junction. This provides extra capacity for surface water during heavy rainfall events and additional protection to the houses that have suffered from flooding previously on Eleanor Street.</p>	<p>The installation of flood mitigation measures will reduce the risk of flood from a 1% (1 in 100 year plus climate chance return period) event.</p>

<p>River Douglas Dam, Wigan</p>	<p>Flooding from the River Douglas occurred on the 29th October 2000 due to river flow exceeding the channel capacity. Flooding was limited to the Kwik Fit Garage, the old bus depot and no. 48 and 50 Eleanor Street. There are numerous more flood events caused by surface water being unable to discharge into the River Douglas Channel due to its high flow.</p>	<p>This £12million flood alleviation scheme was created by the EA to provide increased flood protection for downstream areas of Wigan Town Centre. The Dam is 8m high and contains two Hydro-Brake® Flow Control devices; these slow the flow of water and provide an additional 370,000 cubic metres of flood water storage in the Douglas Valley.</p>	<p>Along with raised flood defence walls through Wigan, which were built prior to the Dam, the schemes offer a 1 in 100 year standard protection from flooding from the River Douglas.</p>
<p>Westleigh Brook, Leigh</p>	<p>Westleigh periodic flooding has occurred over the last century, though there are few formal records. Most recently, floods were experienced in 2002, when 13 properties on Clifton Street and Corn Street flooded to a depth of 0.4m.</p>	<p>The Westleigh Brook Flood Risk Management Scheme is in the EA's Medium Term Plan. This is an EA led project with money allocated for 2014/2015. This scheme includes the removal of Clifton Street Bridge and the installation of flood walls up and downstream of the bridge.</p>	<p>The combination of new floodwalls and removal of the bridge will increase flood capacity within the Brook and reduce the risk of flooding in this area. The standard of protection will be 1 in 75 years with a 20% allowance for climate change.</p>
<p>Millingford Brook, Ashton</p>	<p>Millingford Brook was subject to flooding during low flow events that became more frequent due to a combination of factors – surface water, fluvial restrictions and unrestricted Combined Sewer Overflow (CSO's) discharges.</p>	<p>United Utilities realigned a CSO and made it bigger so velocities entering the brook at the rear of Lincoln Drive didn't exceed 1m/s. This was installed in conjunction with a 5000 cubic metre surface water storage tank just downstream of Lincoln Drive. The EA installed a bypass culvert at Lincoln Drive to remove the pinch point of the Lincoln Drive bridge and double the capacity of the channel. They've also installed telemetry at Lincoln Drive in the hope that a Flood Warning Area will be introduced there in the future.</p>	<p>The standard of protection at Millingford Brook was 1 in 75 years, but in some places as low as 1 in 20 years. Further modelling is currently being undertaken to establish a more accurate current standard of protection further to the works.</p>

Flood zones

Wigan is also divided into different flood zones – where fluvial flooding may occur. The vast majority of the borough is not subject to flooding and is not considered part of a flood zone. However, some areas are more likely than others. The map on the following page, taken from the PFRA, reveals these zones in relation to rivers. Development has to take such flood zones into account and ensure it addresses any relevant issues. In some areas, development would be actively discouraged.

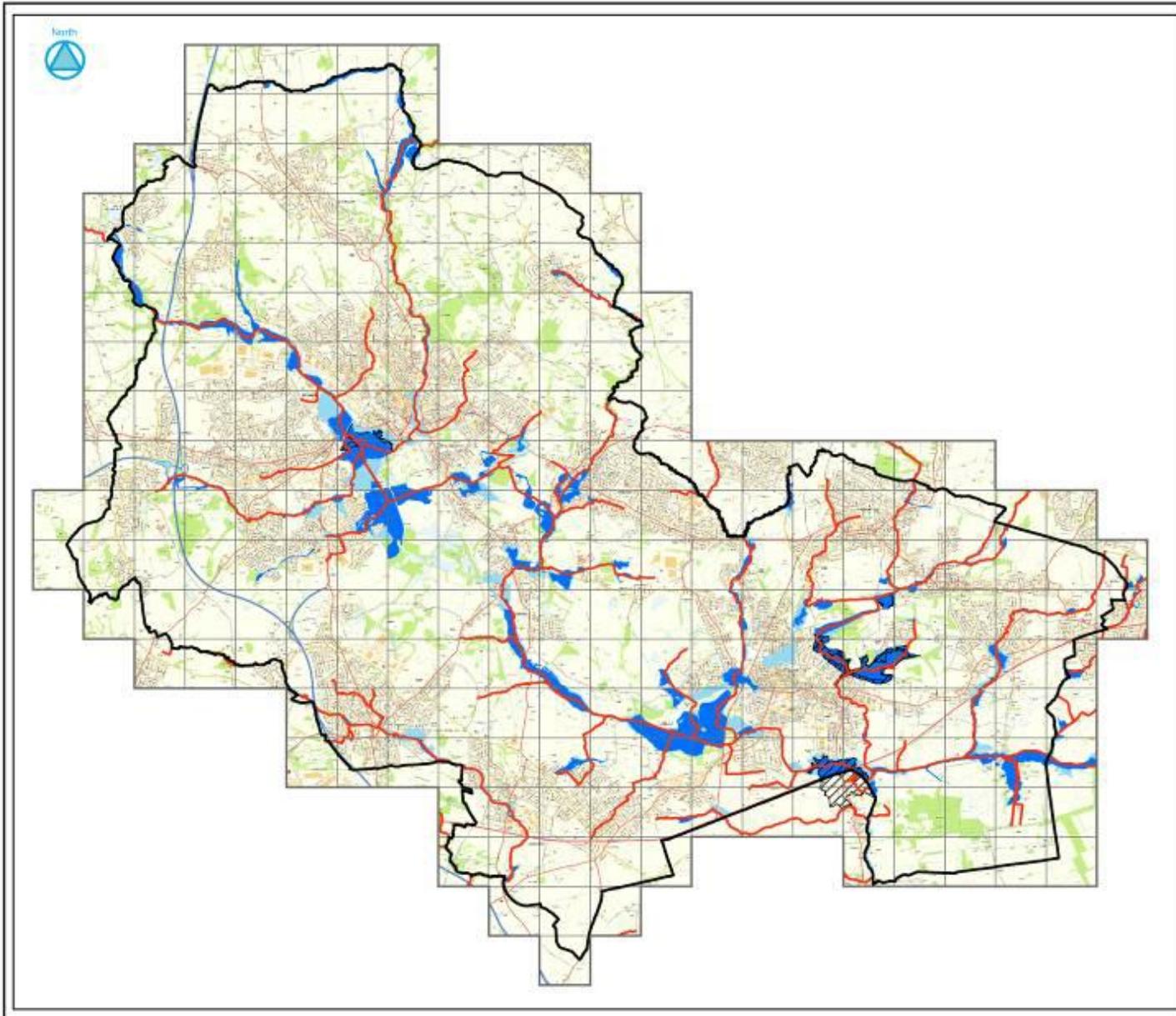
Definition of Flood Zones

Flood zone 2, highlighted in light blue, indicates an area that is likely to be affected by a major flood with up to a 0.1% chance of occurring each year.

Flood zone 3, highlighted in dark blue, indicates an area that could be affected by flooding from rivers with a 1% chance or greater of this happening each year.

Where there is no blue shading, the chance flooding from rivers is very unlikely. There is less than a 0.1% chance of flooding occurring each year in these areas.

Development has to take such flood zones into account and ensure it addresses any relevant issues. In some areas, development would be actively discouraged.



Location Plan



Legend

- Wigan PFRA Study Area
- Main Rivers
- Areas Benefiting from Defences
- Flood Zone 3
- Flood Zone 2

Contains Ordnance Survey Data © Crown copyright and database 2011

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for

WIGAN COUNCIL

PRELIMINARY FLOOD RISK ASSESSMENT

Flood Map

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Drawn by: Ed Blackmore	Scale:
Date: 31/05/2011	Not to scale
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Drawing Number: Figure 5-4	

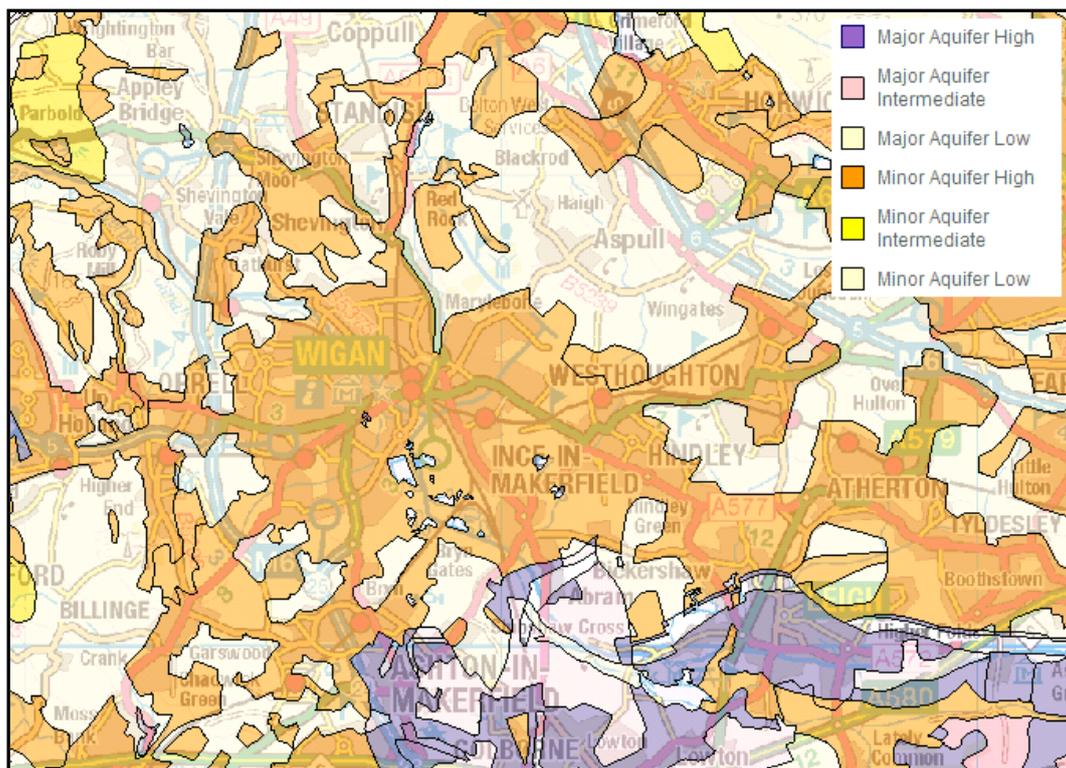
Figure 5-4

Groundwater flooding

Groundwater flooding occurs as a result of water rising up from the underlying aquifer or from water flowing from abnormal springs. This tends to occur after long periods of sustained high rainfall, and the areas at most risk are often low-lying where the water table is more likely to be at shallow depth.

There are several mechanisms, which produce groundwater flooding including prolonged rainfall raising groundwater levels, high in bank river levels, artificial obstructions and groundwater rebound.

The Environment Agency's Groundwater Vulnerability Zones Map can be seen below.



Source: Environment Agency Groundwater Vulnerability Zones Map, 2014.

The risk of groundwater flooding in Wigan is low with only a few recorded incidences.

Localised Flood Risk Areas

Flood risk within the Borough is varied. It is not technically or financially possible to alleviate all risks of flooding across Wigan so it is important to take a risk based approach and prioritise areas that are at greater risk and will therefore provide the most benefit from flood risk management work.

The Flood and Water Management Act require Wigan Council to determine whether there is a significant localised flood risk in their area and identify the Flood Risk Area. In order to achieve this, areas with known flood histories, areas at risk of future flooding and where identified, the consequences of that flooding to be identified.

Thresholds have been set by DEFRA to define Flood Risk Areas based on human health and economic activity. These thresholds are:

- 200 people,
- 20 businesses, or
- 1 critical service at risk

The Environment Agency has then applied these criteria to their national surface water maps to identify areas that exceed the thresholds. They then clustered areas together based on their geography and those areas which exceeded 30,000 people collectively at risk of flooding were identified as an indicative Flood Risk Area.

The Greater Manchester cluster was identified as having 86,500 people at risk including the eastern tip of Wigan's administrative area. However the land type under which the indicative Flood Risk Area lies shows open rural land with only a small pocket of residential properties. This area does not exceed the Environment Agency's flood risk thresholds and has been excluded from the indicative Flood Risk Area due to the national clustering approach.

Catchment Flood Management Plans

The Environment Agency's Catchment Flood Management Plans (CFMP's) provide an overview of the flood risk across a river catchment and advise on ways to manage risks now and over the next 50-100 years.

The River Douglas Catchment Flood Management Plan covers areas of Leyland, Chorley, Skelmersdale and Wigan, with more than 2200 properties at risk of flooding in an event with a 1% chance of occurring in any year. Wigan is the largest town in the CFMP area with 961 properties at risk of flooding from rivers in a 1% event. Wigan generates more than 50% of the cost of damage in the CFMP area.

The Mersey Estuary Catchment Flood Management Plan area covers the lowermost 800 sq. m. of the Mersey Estuary, this includes areas of Bolton, Leigh, Warrington and St Helens. Approximately 40% of the area is heavily urbanised. The response to rainfall is generally slow but much faster for some of the smaller tributaries flowing through urbanised areas. Over 19,000 properties are at a 1% risk of fluvial flooding, this including properties in Hindley and Leigh.

Vulnerability

Managing flood risk is not just about water – it is about the ability to prepare, the ability to respond and the ability to recover from incidents. Work with the University of Manchester as part of their Joseph Rowntree Foundation research into climate change vulnerability has provided useful analysis of Wigan Borough on vulnerability to flooding.

The approach identifies areas where the population are more vulnerable – where they are more sensitive to events occurring, where they are more exposed and how able they are to prepare, respond and recover. Rather than relying on deprivation levels or geographic locations, vulnerability mapping considers the people who live there and the physical environment together. This means it covers a lot of issues including age, health, special care, housing characteristics, income, housing tenure, language use, insurance, social networks, mobility, education and local knowledge. It can suggest flood responses that are more holistic and perhaps include people, organisations and agencies that do not normally consider themselves as part of a flooding strategy approach.

Relationships with other areas

As noted already, Wigan's watercourses are linked to those in other areas – notably Chorley, Bolton, Salford, Warrington, St Helens, West Lancashire and South Ribble. Therefore, the flood response actions taken by Wigan can impact on other areas and vice versa. Wigan's Flood Risk Management Strategy will seek to be consistent with the other FRMS' in the local area.

Wigan is a part of Greater Manchester (GM). GM is the largest functional economic area outside London with a population of 2.6 million people, at the heart of a travel to work area of 7 million people. It generates economic output of £46 billion each year and is a diverse conurbation with significant differences in productivity, connectivity and relative levels of wealth and deprivation. This Local Flood Risk Management Strategy (LFRMS) is one of a suite of ten covering the Greater Manchester area focusing on 'local flood risk'.

The Association of Greater Manchester Authorities (AGMA) represents the ten local authorities in Greater Manchester and work together strategically. The ten councils have also formed a Greater Manchester Combined Authority (GMCA). There is often added value in doing things once as opposed to several times locally such as the Greater Manchester Strategic Flood Risk Assessment and Surface Water Management Plan. It also ensures the statutory duties are implemented in the most efficient and effective manner.

In order to support the districts in meeting their duties AGMA governance arrangements have been established through the newly constituted North West Regional Flood and Coastal Committee (RFCC) and the Greater Manchester Flood and Water Management Board.

3. Objectives

As set out in Chapter 1, the Flood Water Management Act 2010 indicates that there are a number of issues the Strategy has to address. Arising from those, and considering the flooding concerns for Wigan, the strategic objectives for this strategy are:

- To provide a clear explanation of all stakeholder's responsibilities in flooding issues.
- To develop a clearer understanding of flood risk and to consider how best to communicate and share information as it becomes available.
- To define and explain the criteria by which areas at risk of flooding from surface water run-off, groundwater and ordinary watercourses are assessed and resources are prioritised.
- To state how risk management authorities will share information and resources.
- To set out clear and consistent plans for risk management so that communities and businesses can make informed decisions about the management of the residual risk.
- To ensure that planning decisions are properly informed and consider flooding issues and the impact of future planning.
- To ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond properly to flood warnings.
- To highlight where information regarding other forms of flooding can be found.

The strategy is also required to contribute to the achievement of wider environmental objectives. The Strategic Environmental Assessment has therefore identified a number of its own objectives:

- To protect and enhance the borough's biodiversity
- To minimise impacts on socially and economically deprived areas
- To protect and improve, where possible, neighbourhood quality
- To reduce the impact of flooding on properties at risk
- To protect and support economic activity and employment provision
- To protect and enhance the health and wellbeing of the population
- To minimise impact on opportunities for leisure and recreational activities
- To preserve and enhance the borough's soil and mineral resources
- To protect and enhance, where possible, the quality of water resources
- To promote climate change adaptation and community resilience
- To protect and current and future infrastructure and assets
- To protect and enhance the cultural, architectural and archaeological heritage of the borough
- To protect and enhance the landscapes and green infrastructure of the borough.

4. Who is involved

This section provides information about the powers and responsibilities of all the stakeholders in managing flood risk in Wigan, including households and business. It is crucial that everyone is aware of what they can do, and are expected to do to help manage flood risk.

Risk Management Authorities

The Flood and Water Management Act 2010 identified certain organisations as Risk Management Authorities. They have both new responsibilities from the Act and responsibilities from previous legislation.

The Risk Management Authorities in Wigan Borough are:

- Wigan Council
- United Utilities
- Environment Agency

All Risk Management Authorities are subject to scrutiny through the democratic process of Wigan Council. Each authority has:

- a duty to co-operate with other Risk Management Authorities in the exercise of their flood (and coastal erosion, where applicable) risk management functions, including sharing flood risk management data
- the power to take on flood (and coastal erosion) risk functions from another Risk Management Authority when agreed by both parties.

Co-operation with other Risk Management Authorities includes:

- Liaison prior to the designation of structures and features to ensure consistency
- Reporting local flooding incidents to the Highways and Drainage Department on a monthly basis
- Reporting flood assets, as defined by agreed criteria, as and when they are revealed
- Assisting with Flood Investigation Reports where required
- Providing local knowledge to the Sustainable Drainage System (SuDS) Approval Body (SAB) regarding applications in the area
- Ensuring that members of the public who are trying to contact another organisation are swiftly put through to the appropriate organisation
- Sharing of information and data easily.

Specific Roles for Risk Management Authorities

Each of the Risk Management Authorities has a specific role to play and responsibilities to cover. They are set out in detail in Appendix B, and listed below.

Wigan Council

Wigan Council has a range of different roles which include

- Local Lead Flood Authority
 - Strategic Leadership
 - Satisfying Flood Risk Regulations
 - Flood Investigation Reports (see Appendix C)
 - Register and Record of Assets
 - Designating Assets
 - Watercourse Regulation
 - Statutory Consultee for Major Planning Applications

- Emergency Planning
- Local Planning Authority
- Highways Authority
- Flood Risk and Historic Environment
- Land Drainage Act responsibilities
- Maintaining public spaces

In carrying out these duties the council will ensure that flood risk management is considering as part of the wider economic, social and environmental context, including historic environment and nature conservation issues.

United Utilities

United Utilities is the water company that serves Wigan Borough and the rest of the North West of England. They provide water supply and wastewater services. Their responsibilities include:

- Water supply (though they are not classed as a Risk Management Authority for this)
- Wastewater and Sewage
- The DG5 Register
- Tackling sewer flooding
- System of public sewer and works

The Environment Agency

The Environment Agency is an 'Executive Non-departmental Public Body' responsible to the Secretary of State for Environment, Food and Rural Affairs. They aim to protect and improve the environment. It has a national strategic role and a local operational role.

National Strategic Role

The Environment Agency is required to publish the National Flood and Coastal Erosion Risk Management Strategy for England which seeks to provide a clear framework for all forms of flood and coastal erosion risk management. This fulfils a requirement in the Flood and Water Management Act 2010, which gave the Environment Agency a 'strategic overview' of flood and coastal erosion risk management. In turn it takes forward a recommendation from Sir Michael Pitt's inquiry into the 2007 floods.

The National Strategy identifies the following strategic actions for the Environment Agency:

- Use strategic plans like the Catchment Flood Management Plans and the Shoreline Management Plans to set the direction for Flood Risk Management.
- Support the creation of Flood Risk Regulations by collating and reviewing the assessments, plans and maps that Lead Local Flood Authorities produce.
- Providing the data, information and tools to inform government policy and aid Risk Management Authorities in delivering their responsibilities.
- Support collaboration, knowledge-building and sharing of good practise including provision of capacity-building schemes such as trainee schemes and officer training.
- Manage the Regional Flood and Coastal Committees and support their decisions in allocating funding for flood defence and flood resilience schemes.
- Report and monitor on flood and coastal erosion risk management
- Provide grants to Risk Management Authorities to support the implementation of their incidental flooding of environmental powers.

Local Operational Role

The Environment Agency's other roles in relation to this strategy are:

- Emergency Planning
- Engagement in the Planning Process
- Regulating, maintaining and improving Main Rivers
- Enforcing health and safety measures for reservoirs.

Specific Roles for Others

It is not just the Risk Management Authorities that have responsibilities when it comes to flooding. Others do too and these are set out below:

Highways Agency

The Highways Agency is an Executive Agency of the Department for Transport (DfT). It is responsible for operating, maintaining and improving the strategic road network in England on behalf of the Secretary of State for Transport. It acts as the Highways Authority for the M6 and M58 within Wigan. As a Highways Authority (for the motorways), the Highways Agency has the same obligation to co-operate on flood risk issues as the other risk management authorities. It also has the following responsibilities under other legislation.

- Maintaining their highways including drainage
- Power to deliver works
- Adoption of SuDS on its property

Utility and Infrastructure Providers

Utility and infrastructure providers such as Network Rail, energy companies and telecommunication companies have a crucial role to play in flood risk management as their assets can be important considerations in planning for flood management. They should:

- Share details of assets such as culverts with flood risk management authorities
- Consider flood risk management issues in their planning for service maintenance and development
- Work with the Risk Management Authorities to deliver this strategy.

First Line Responding Agencies

The Fire and Rescue Service, Police, Ambulance and NHS are, along with Wigan Council and the Environment Agency, considered to be 'Category 1' agencies. As such they are all part of Wigan Borough Resilience Forum (WBRF). The forum brings them together to:

- Share relevant operational and emergency planning information
- Provide relevant information for multi-agency emergency plans
- Participate in relevant training and exercises
- Build relationships
- Identify and circulate best practice.

Other 'Category 2' agencies such as utility companies and transport operators are 'co-operating bodies'. They have a duty to co-operate and share relevant information with Category 1 agencies. Although not involved in much strategic planning, they will be engaged when responding to certain incidents. They are also invited to meetings of the WBRF.

Businesses and Local Householders

Everyone has a role to play in flood management, including local businesses and residents. It is their responsibility to look after their property. They can help do this by:

- Checking if they are at risk of flooding – information is available from Wigan Council or the Environment Agency.
- Registering with the flood warning service if they are at risk – this can be done by contacting the Environment Agency on 0345 988 1188
- Ensuring that they are prepared in the event of a flood
- Investing in flood protection measures where possible
- Responding to consultations and flood strategies and flood defence schemes
- If their property is adjacent to a watercourse, checking if they are riparian owners (Land Registry details should confirm this). Changes made to the watercourse need to be discussed with the Environment Agency and/or the LLFA. Riparian owners are also responsible for maintaining the beds and banks of any watercourse that crosses the land they own.

5. Measures

A key aim of the Local Flood Risk Management Strategy is to establish a programme of actions that can be taken forward in order to meet the locally determined objectives and guiding principles of the strategy. It is also important that the actions set out in this strategy are consistent with the objectives and guiding principles of the national strategy.

Actions taken forward should help achieve wider environmental benefits in addition to the social and economic benefits of reducing flood risk. This includes improving the environmental features of Wigan and achieving good qualitative and quantitative status of water bodies.

Flood risk management actions have been split into two categories:

- Strategic countrywide actions with the aim of following the guiding principles and meeting the overall objectives of this strategy and of the National Strategy.
- Site level, specific management option that could be implemented within locally important flood risk areas in order to translate the aims of the overall strategic actions onto local scale.

The broad descriptions of these two areas are set out below but details can be found in the attached Action Plan in Appendix D, which also sets out who is responsible for them.

Countrywide Strategic Actions

These actions are happening across the country. Wigan will need to respond to them and the relevant organisations will need to take appropriate action.

- Improving understanding of local flood risk
 - Increasing public and institutional knowledge and awareness
 - Proactive measures
 - Recording and reporting flood incidents
- Adapting spatial planning policy to reflect local flood risk
 - Introducing a robust Sustainable Drainage System (SuDS) framework
 - Including local flood risk concerns in all future Strategic Flood Risk Assessments
 - Considering the National Planning Policy Framework's advice on flood risk management
- Raising community awareness through communication activities
- Establishing working framework between Risk Management Authorities

Site Level Specific Management Actions

These actions are recognised as being appropriate for tackling flood risk in the areas identified by the Preliminary Flood Risk Assessment.

- Encouraging implementation of flood resilience measures and property protection schemes
 - Encouraging individual property protection measures
 - Increasing awareness and preparedness for flood events
 - Investigating funding opportunities
 - Emergency planning responses
- Implementing sustainable drainage and source control measures
- Managing overland flow paths
- Reviewing land management methods
- Providing guidance to land owners
- Altering agricultural practices
- Reviewing asset management and maintenance methods.

Other Measures

Asset Maintenance

The council has identified priority assets based on data collected when compiling the asset register. Assets have been ranked in order of priority through assessing the flood outlines against property postcodes and/or the Environment Agency's housing equivalent scores.

In order to determine the flood risk associated with each asset a method of simulating flooding caused by blockages in pipes, culverts or bridges has been used. This defined the extent of any such flood and analyses the consequences to be able to prioritise assets.

The top 20 priority assets can be found in Appendix E.

Flooding Incident Operational Response

At the front of this strategy we have set out some of the ways residents and businesses should play their part in helping to manage flood risk. However, Wigan Council itself has an operational hot spot response procedure for known historic flooding incidents. This is set out in Appendix F, with specific details held by risk management partners.

Requirements of the EU Habitats Directive

The requirements of the EU Habitats Directive must be given appropriate consideration where works could affect a 'Natura 2000' site. These sites include Special Areas of Conservation (SAC). Such sites can be sensitive to impacts such as the effect of changes to drainage patterns. As such it is important to ensure that proposals which could impact on such sites are identified and appropriately assessed where necessary, to ensure they can be carried out without causing significant damage to species and habitats of importance and that they can receive approval to proceed, if required, for example through the planning process.

Wigan Borough includes part of the Manchester Mosses SAC. As the Lead Local Flood Authority, Wigan Council will ensure that any relevant proposals for flood risk management, including increased water storage and flood defences, are subject to robust scoping and that Natural England, the body with responsibility for ensuring the protection and good management of Natura 2000 sites, is properly consulted wherever necessary to determine further Habitat Regulations Assessment and approvals that may be required.

6. Policies

The previous chapters in this LFRMS have considered the flood issues facing Wigan and who is responsible for carrying out actions in preparing and responding to flooding. The following policies set out the framework within which Wigan will approach local flood management issues.

Policy 1	Information and evidence will be collected, collated and considered for both flood management and emergency planning purposes to ensure a well-informed risk based approach to flooding issues in Wigan Borough
Policy 2	Wigan Council will work with other Risk Management Authorities and stakeholders to ensure effective communication between all relevant bodies
Policy 3	Infrastructure assets will be monitored, managed and maintained and an up-to-date asset regime will also be maintained
Policy 4	Intervention prioritisation will be based on targeting the most vulnerable people, communities and locations ensuring economic, environmental and social sustainability
Policy 5	The environmental impacts of interventions specifically on biodiversity, water quality and soil and mineral resources will be avoided where possible, or otherwise mitigated as far as they can be, with the aim of enhancing the environment where feasible
Policy 6	An effective approach to Sustainable Drainage Systems will be implemented and monitored
Policy 7	Flooding issues will be fully taken into account through the planning process, in allocating land, establishing planning policies and determining planning applications
Policy 8	Wigan Council and other stakeholder agencies and organisations will ensure timely, relevant and targeted information is disseminated to residents and businesses in the borough vulnerable to flooding
Policy 9	Wigan Council will investigate and report on flooding incidents and work with communities and partner agencies to ensure effective implementation
Policy 10	Wigan Council, other Risk Management Authorities and partner agencies and organisations will work to secure funding for flood management actions where appropriate, including private investment by businesses and individuals

These policies are supplemented by actions in Appendix D. Some of the actions will change each year depending on the evidence gathered and the priorities set by Wigan Council alongside the community and other agencies.

7. Funding and Resources

There are a wide range of resources needed to deliver flood risk management including funding, materials and people's time. Delivery on some of the actions is reliant on funding being in place to either support schemes or people to carry out the work. Ensuring the right materials are available to reduce any environmental impact is important. Making sure there is enough capacity within organisations to carry out some of the tasks is also crucial.

Use of Resources

Appropriate resources that protect and enhance the local environment will be used when bringing forward schemes to deal with flooding. Environmental, social and economic considerations will be considered for all flood management actions. The planning and building control processes – working with colleagues in drainage – will ensure that flood management associated with new development is carried out appropriately and effectively. Where relevant, stakeholders will be consulted.

Funding

Wigan Council, as the Local Lead Flood Authority, will ensure that flood risk management is cost effective and appropriate for the challenges the borough faces. The aim will be to ensure proper maintenance to reduce the need for more expensive interventions later on. Funding will be sourced through many different areas (listed below) with a key principle being that everyone has a role to play and a responsibility to fund appropriately.

An ongoing programme of flood risk management will always seek a range of funding, but the main sources will be:

Potential funding	Source
Capital Programme	Wigan Council
Local Services Support Grant	Wigan Council
Flood Defence Grant	DEFRA and the Regional Flood and Coastal Committee (RFCC)
Local Levy	RFCC
Fees and charges	Sustainable Drainage Approvals Body applications/works consents/maintenance levy
Section 106 / Community Infrastructure Levy	Developer contributions through planning process
Water company programmes	United Utilities
European Funding	European Regional Development Fund
Grants	Various – environmental and community programmes, European etc

Skills

In managing flood risk it is essential that access to the required skills, capacity and knowledge is maintained. This includes the maintenance of professional codes and standards, especially where engineered assets and systems are in place and their failure could result in loss of life or significant damage to property.

The Environment Agency is working with DEFRA and Local Authorities to build the level of knowledge and skills that will help flood risk authorities to carry out their roles and responsibilities as the Flood and Water Management Act is implemented. The Capacity Building Strategy aims to support existing staff, develop new staff and develop new tools and information.

8. Monitoring

It is important that this strategy is kept up to date, relevant and useful. To ensure this happens, therefore, Wigan Council commits itself to a monitoring process for the strategy and the actions that arise from it. This falls into three distinct areas of partnership, review and scrutiny.

Partnership

As identified earlier, there is a responsibility placed on certain organisations to engage with others to deliver flood risk management. For instance, the requirement on Risk Management Authorities to liaise with each other. However, effective partnership working needs to go beyond statutory responsibilities.

Chapter 4 refers to the Wigan Borough Resilience Forum. This is a key group to discuss and share best practice on preparing and responding to flooding issues within Wigan Borough. However, Wigan Council will also ensure that it works in partnership with communities, businesses, developers, statutory agencies, academics, central Government, other Greater Manchester authorities and any other relevant partners to deliver the best flood risk management possible. Wigan Council will also work internally to ensure that all departments are engaged in flood risk management, where appropriate.

Review Process

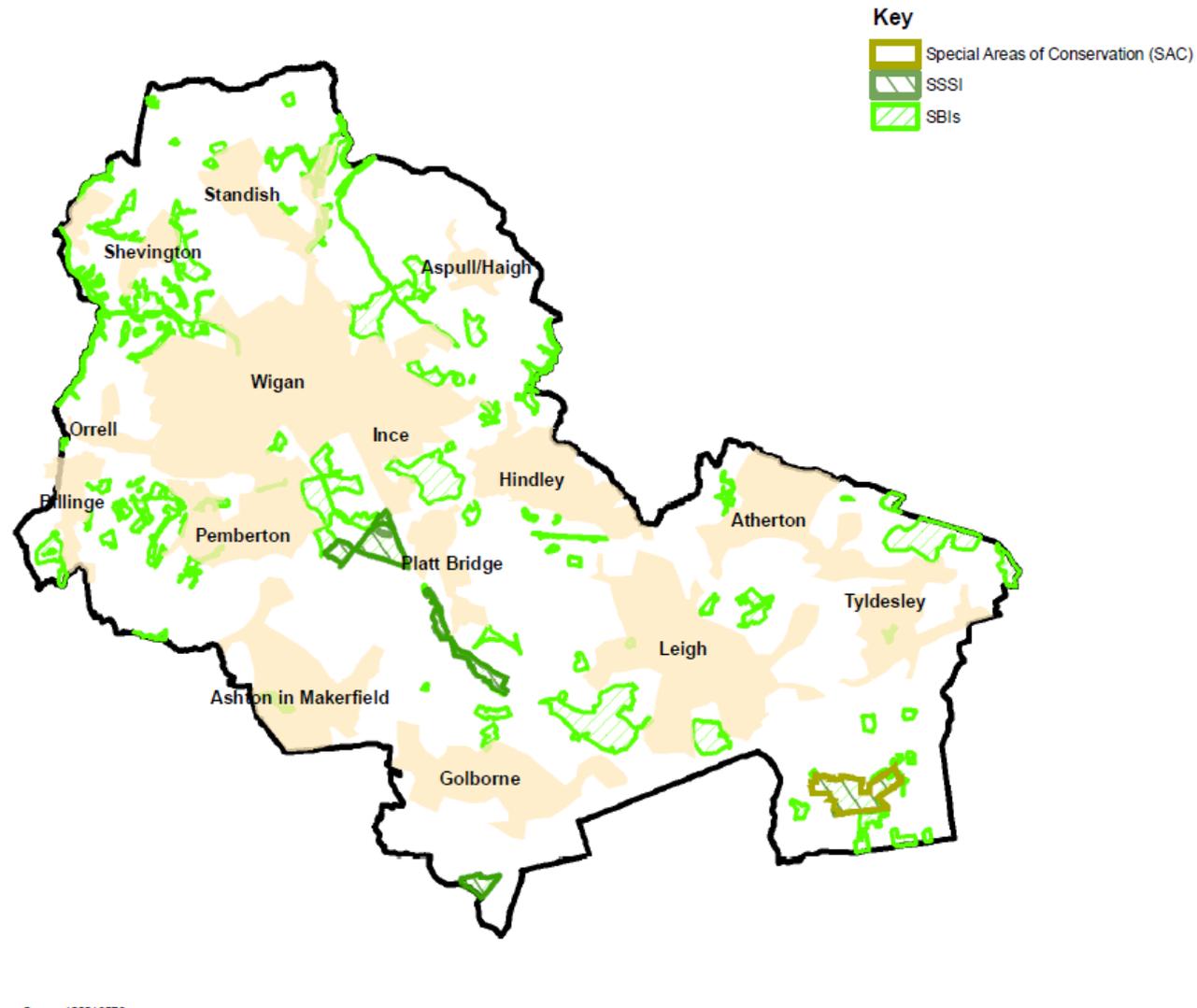
Wigan Council will ensure that this strategy is reviewed on an annual basis with the opportunity for input from relevant stakeholders. This will take place from the anniversary of its adoption. To support this process, continual review will take place within the partnership arrangements outlined above to ensure the strategy and relevant actions remain appropriate and are being implemented.

There are other responsibilities placed on Wigan Council regarding managing flood risk such as the six year programme set out in the Flood Risk Regulations (2009). These will form part of the action planning for flood risk management.

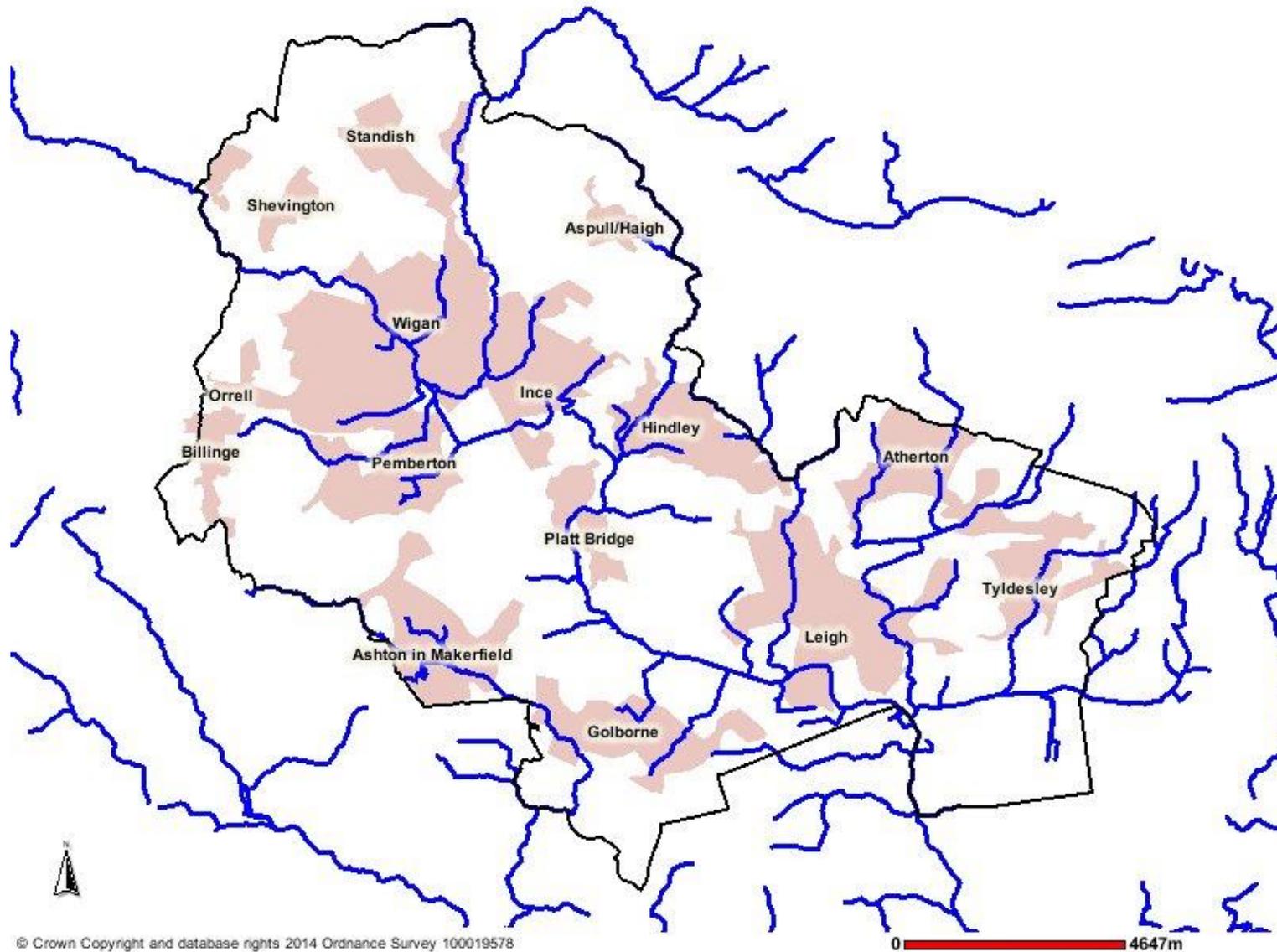
Scrutiny Process

Wigan Council already has an established scrutiny process. As Lead Local Flood Authority, it is appropriate that this strategy and the actions taken are subject to this source of scrutiny. Therefore, an appropriate committee of Wigan Council will assume responsibility for scrutiny with reports and presentations being prepared on an annual basis at least. The review of the strategy will be reported to the identified committee. This gives an opportunity for local elected representatives and the community to challenge the strategy and hold actions to account.

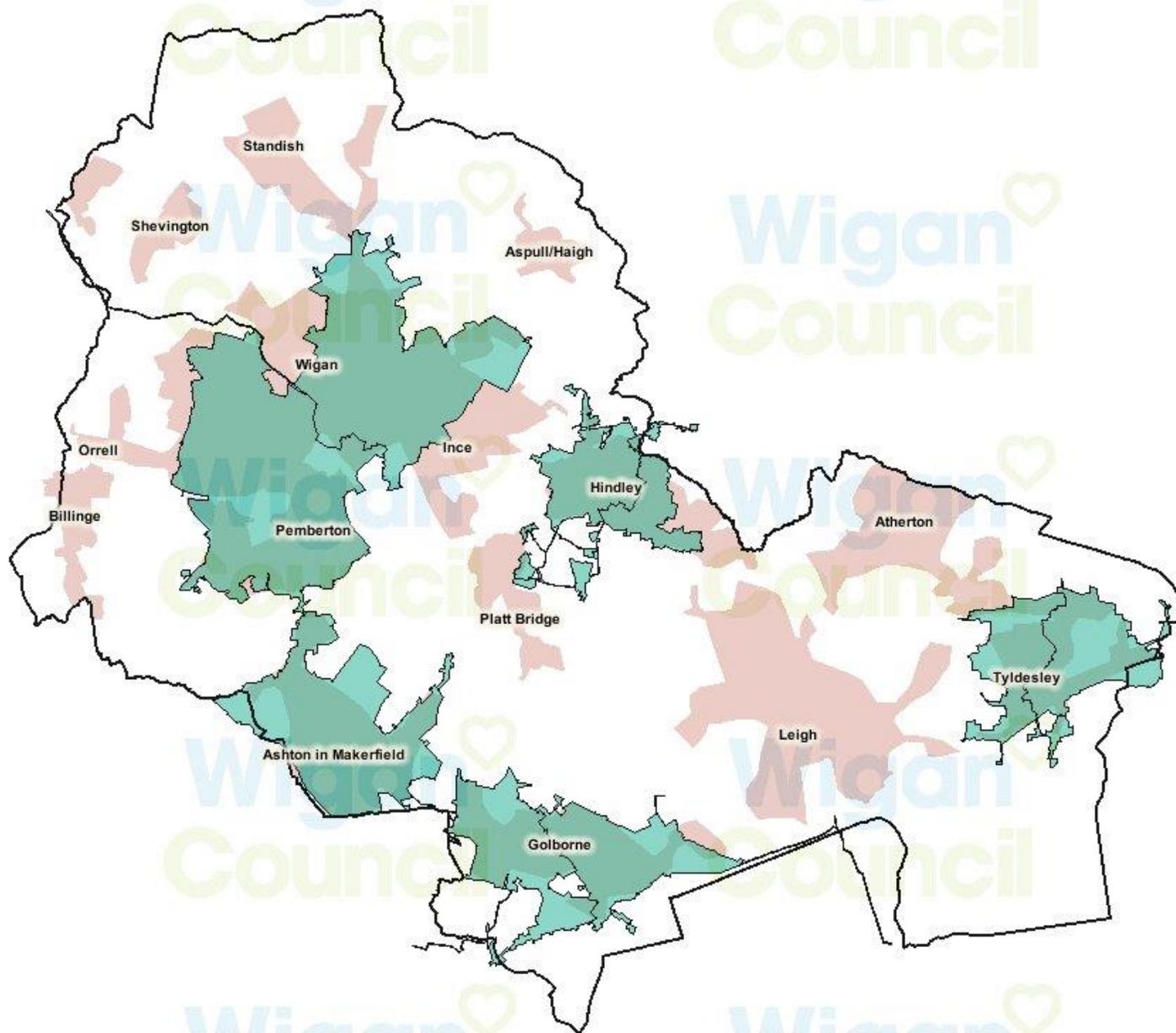
Appendix A.1 Designated Nature Conservation Sites



Appendix A.2 Wigan Rivers



Appendix A.3 Critical Drainage Areas



Appendix B – Details of Roles and Responsibilities of Risk Management Authorities

The strategy sets out the headline areas each Risk Management Authority is responsible for. This appendix explains each one in a little more detail.

Wigan Council

Local Lead Flood Authority

Under the Flood Water Management Act 2010, as LLFA Wigan Council has the following powers:

- To develop, maintain, apply and monitor a strategy for local flood risk management.
- To request information from any person in connection with the authorities flood and coastal risk management functions.
- To do works to manage flood risk from surface runoff or groundwater.
- To designate structures and features that affect flooding.

There are also several responsibilities:

Strategic Leadership

Wigan Council is the strategic leader on flood risk management within the borough of Wigan. That means ensuring an appropriate strategy is delivered and coordinating and communicating with relevant organisations and stakeholders in preparing and responding to flood threat. Ensuring monitoring of progress is also a key issue.

Satisfying Flood Risk Regulations

It is the responsibility of Wigan Council to satisfy the Flood Risk Regulations (2009) by producing a timely Preliminary Flood Risk Assessment (PFRA) and identifying any Indicative Flood Risk Areas within the borough. The first [PFRA](#) was produced in 2011 and the next one is due in 2017.

Flood Investigation Reports

A Flood Investigation Report examines the response to flood incidents and considers which authorities have an involvement in a flood incident, and clearly outline their responsibility or actions, if any. Wigan Council is responsible for deciding if a Flood Investigation is required.

Register and Record of Assets

Flood Risk Assets are structures or features which are considered to have an effect on flood risk such as an embankment protecting properties, or a culvert in a residential area. The role they play and any deficiencies they have can affect flooding. Wigan council has to keep two distinct lists:

- An Asset Record for use by all Risk Management Authorities giving details of each asset including ownership and contact details
- An Asset Register for inspection by the public which will include a map of assets identifying whether they are publicly or privately owned

For both of these lists, determining significance is an issue and it will be considered on an asset-by-asset basis considering location, local vulnerability and flood risks in the area. This process is likely to take some time.

Designating Assets

Wigan Council is a “designating authority” alongside the Environment Agency

Once the relevant clauses of the Flood and Water Management Act have been commenced, Wigan Council and the Environment Agency will be the ‘designating authorities’. That is, they may ‘designate’ features or structures where the following four conditions are satisfied:

1. The designating authority thinks the existence or location of the structure or feature affects -
 - a) a flood risk, or
 - b) a coastal erosion risk.
2. The designating authority has flood or coastal erosion risk management functions in respect of the risk which is affected.
3. The structure or feature is not designated by another authority.
4. The owner of the structure or feature is not a designating authority.

If an asset becomes ‘designated’ its owner cannot alter or remove it without first consulting the designating Risk Management Authority.

The aim of designating flood risk assets is to safeguard them against unchecked works which could increase flood risk in the area. Designating of features is not something that should be done regularly but only when there are concerns about the asset.

In order to ensure that there is a consistency in designating across all the designating authorities, it is proposed that there is a bi-annual meeting between the designating authorities to compare proposed assets for designation.

Watercourse Regulation

Wigan Council as the Lead Local Flood Authority is responsible for the regulation of ordinary watercourses to ensure that flood risk is managed appropriately. Regulation consists of two elements:

- Issuing of consents for any changes to ordinary watercourses that might obstruct or alter the flow of an ordinary watercourse.
- Enforcement action to rectify unlawful and potentially damaging work to a watercourse.

These tasks are currently being undertaken by the Environment Agency, but in keeping with the Pitt Review, which recommended that local flood risk be managed by local organisations, it has been transferred across to the Lead Local Flood Authority.

The Lead Local Flood Authority has the power to apply their own land drainage byelaws, if applicable.

Culverting has many adverse effects and applications will generally only be granted where it has been demonstrated that there is no viable alternative, that there is an overriding need for the works and that suitable mitigations have been proposed and are considered, by the Lead Local Flood Authority, to be acceptable. Byelaws may be introduced to support this position.

Riparian owners will have to apply for consent for works which may affect the flow of water within ordinary watercourses, which include any ditch, stream or sewer that is not designated as a main river (which remains the responsibility of the Environment Agency). They can do this through a [form](#) that is available on the Wigan Council website.

Riparian owners are encouraged to call the LLFA to discuss this. Further byelaws may be enacted to ensure that forms of obstruction which are not covered by the Land Drainage Act but which Wigan Council and its partners believe increase flood risk require consents. Consent on forms of obstruction identified by the Land Drainage Act will be charged at £50. This will be reviewed if and when the Secretary of State changes the regulations determining the price for consents.

LLFAs also have the power to serve notice on riparian owners to remedy the condition of a watercourse which is impeding flow.

Lead Local Flood Authority (LLFA) – Statutory Consultee

Existing national planning policy has been strengthened to make it clear that the government expects sustainable drainage systems (SuDS) to be provided in new developments. To this effect, where planning applications are for major developments, the local planning authority must ensure that SuDS are put in place, unless demonstrated to be inappropriate. As a consequence of this legislative change from the 15 April 2015 all Lead Local Flood Authorities (LLFA's) are to become a statutory consultee regarding major planning developments. As a statutory consultee, the LLFA is expected to provide a substantive response to the Local Planning Authority (LPA) within 21 days of receiving a consultation.

The LLFA recommends that a proof of concept be submitted to include a drainage strategy that complies with the national standards.

Further information on the [technical standards for sustainable drainage systems](#) can be found on the government webpage.

A Major Development is defined as;

- A Residential Development consisting of 10 dwellings or more or residential development with a site area of 0.5 hectares or more where the number of dwellings is not yet known.
- A Non Residential Development with provision of a building or buildings where the total floor space to be created is 1000 m² or more or where the floor area is not yet known, a site area of 1 hectare or more.

These changes came into effect on the 6 April 2015

To comply with the above changes in policy the local list of requirements to accompany planning applications is to be updated as follows:

Pre - Planning Application

National Planning Practice Guidance stresses the importance of pre-application engagement by prospective applicants to improve both the efficiency and effectiveness of the planning application system and improve the quality of planning applications and their likelihood of success. Further information can be found at:

The value of pre-application engagement document.

To ensure early consideration, development of a **Proof of Concept Plan** is recommended at the pre-planning application stage in order to pre-empt and highlight issues that could later arise. If it is anticipated that maintenance issues may be a significant hindrance to and conflict with the ability of a development to incorporate SuDS, advice can and should be sought early.

Development proposals progressed without undertaking this early consultation stage risk the possibility that the proposed layout would not be capable of being drained in a sustainable way, contrary to national and local policy.

Pre-application advice will reduce the risk of subsequent design conflicts and later issues that may arise due to the proposed implementation of SuDS. Development proposals progressed without undertaking a Sustainable Drainage Evaluation and seeking pre-application advice run the risk that the proposed layout may not be capable of being drained in a sustainable way.

With reference to pre-application advice the following points should be noted:

- Pre-application advice may be charged for on a cost recovery basis.
- The Environment Agency will continue to provide pre-application advice for developments within Flood Zone 2 or 3.
- The developer should identify, at a pre-application stage, if they propose the use of conditions or a section 106 agreement. This will ensure that early discussions may take place and the most suitable mechanisms, respective to the developers' choice, can be determined, taking into account the particular circumstances of the development.

Major Development - Outline Planning Application

To ensure a satisfactory consultation with the council as Lead Local Flood Authority, applications must be submitted with a Proof of Concept plan.

The proof of concept plan is to be based on a constraints plan that includes the existing natural flow paths and the proposed Blue Corridors across the site together with any discharge restrictions, maintenance restrictions and access issues.

It is recommended that the proof of concept plan is created before considering the development layout, to ensure that the proposals maximises the development opportunity without having potential adverse effects on the area.

The developer should provide the following information as part of the proof of concept plan:

- Site location and layout plans.
- Topographical survey of the existing catchment of the site to include contours at 1 metre interval and existing surface water flow routes, drains, sewers and watercourses.
- Site plan showing areas of Main River and surface water flooding.
- Flood Risk Assessment.

- Site Drainage Strategy to include:
 - SuDS proposals.
 - Infiltration test results.
 - Outfall locations.
 - Rates of discharge.
 - On-site storage requirements.
- Operational Maintenance Plan as detailed below.

Only when a proof of concept plan has been agreed in principle, can it be used to inform the site masterplan. Then only once the masterplan has been agreed, the detailed SuDS design can commence.

Major Development - Full Planning Application, Reserved Matters, Discharge of Conditions

To ensure a satisfactory consultation with the council as Lead Local Flood Authority, the following information is required in addition to that required with the proof of concept plan for the outline application:

- Proposed site plan showing exceedance flow routes.
- Drainage layout plan (to include all SuDS, sewers, drains and watercourses).
- A condition survey of any existing drainage assets, infrastructure or watercourse to be utilised.
- Design calculations as necessary to demonstrate the functionality of the SuDS.
- Detailed design drawings.
- SuDS flow calculations (.mdx files compatible with WinDes Micro drainage software if that software has been used).
- Cross sections including design levels.
- Specification of materials.
- Phasing of development including Construction Management Plan.
- Construction phase Surface Water Management Plan.
- Construction details.
- Details of inlets and outlets and flow controls.
- Operational Maintenance Plan as detailed below.
- Health and Safety Risk Assessment for construction, operation and maintenance of the SuDS.

For clarification, for a full planning application submitting without a relevant outline planning permission, the requirements for a proof of concept plan will need to be submitted with the full planning application alongside all of the details otherwise required at that stage.

Operation and Maintenance

A major consideration when designing and implementing SuDS is to ensure that the solutions proposed can be maintained easily over the lifetime of the development, and that maintenance considerations and costs are planned for upfront.

Planning Practice Guidance - (Reducing the causes and impacts of flooding - Paragraph: 085 Reference ID: 7-085-20150323 - updated 23/03/2015) states *'When planning a sustainable drainage system, developers need to ensure their design takes account of the construction, operation and maintenance requirements of both surface and subsurface components, allowing for any personnel, vehicle or machinery access required to undertake this work.'*

Ease of maintenance will impact on any adoption process and will affect the determination of planning applications.

In considering planning applications, the council as Local Planning Authority must ensure through the use of planning conditions or planning obligations that there are clear arrangements in place for ongoing maintenance over the lifetime of the development.

Operation and Maintenance Plan

An operation and maintenance plan is required to be developed and submitted with all proposed developments at **all levels** of application.

Outline Planning Applications

An outline planning application should include as much detail as possible covering the points highlighted for full applications. As a minimum it should outline an understanding of inspection and maintenance tasks that would be required. It should also provide information regards potential parties / organisations responsibilities for SuDS maintenance, adoption and ownership, but these do not need to be have been confirmed at this stage. It is unlikely that a specification for inspection and maintenance would be available at this stage.

Full Planning Applications

An operation and maintenance plan for a full planning application should include:

- Whole life cycle costing for the SuDS including replacement cost.
- Details of funding arrangements for SuDS maintenance.
- Details of the party / organisation responsible for, and maintenance of, each feature.
- Maintenance and operation manual for the SuDS including the specification for inspection and maintenance actions, including frequency of maintenance tasks required for each proposed SuDS, setting out a minimum standard to which the SuDS system must be maintained.
- Details of additional cleansing, repair and maintenance following flooding events where SuDS features are located in a designated flood zone.
- Proposed arrangements for adoption / ownership to secure the operation of the scheme throughout its lifetime, including physical access arrangements for maintenance and establishment of legal rights of access in perpetuity.
- Where SuDS features are attached to private property, confirmation of any associated maintenance / adoption / ownership requirements should be provided. For example, if SuDS features are to be included in property deeds, or if householders are required to pay into a communal fund to fund ongoing maintenance.
- Details of proposed contingency plans for failure of any part of the drainage system that could present a hazard to people.

Maintenance Options, Risks and Safeguards

There are many options that will allow the successful operation and maintenance of a SuDS feature for the lifetime of the development. Wigan Council defines the lifetime of a development as 100 years (supported by the national planning policy definition), or until the development is redeveloped or significantly re-engineered so as to alter the surface water discharge regime

With each maintenance option there may be associated risks for the onsite and surrounding land, property owners, the Local Planning Authority, Local Highway Authority and Lead Local Flood Authority should the chosen maintenance option become compromised. Wigan Council encourages developers to determine the most appropriate maintenance option reflective of the site-specific SuDS features.

In an effort to mitigate the associated risks with some maintenance options the LPA may require a number safeguards to be implemented. For example, where SuDS systems are provided within private property, the LPA may require that the SuDS system be incorporated into the property deeds.

Safety and Access

Consideration should always be given to safety in design and appropriate consideration of access during the design of SuDS. CDM Regulations 2015 must also be considered and applied to the planning, design and construction and long term maintenance of SuDS systems.

Major Development applications will not be made valid after 6 April 2015 onwards unless accompanied by the above requirement.

Minor Development applications (i.e. development below the thresholds set out above)

We will not require particular drainage submissions to make an application valid but we encourage evidence that SuDS drainage has been considered. A proof of concept approach could assist in producing an acceptable planning application. Please ensure that Part 12 of the application form is completed accurately. It is our intention to consult the LLFA where the development is proposed to drain to a SuDS system, existing watercourse or pond/lake. We will consult the LLFA on all proposed major developments.

[Wigan Council Planning Guidance](#)

[Advice on land drainage from the LLFA](#)

[Advice on flooding from the LLFA](#)

Additional guidance on specific elements of SuDS development (e.g. SuDS Manual) etc can be found at:

[Susdrain.org](#)

[The SuDS Manual](#)

Emergency Planning

The council maintains an integrated approach to emergency planning across all local authority services, and works with police, fire ambulance and health services, as well as the utility companies and voluntary organisations, and has developed plans to ensure the best response possible. The council also works with the other Greater Manchester Local Authorities so that they can provide mutual support if necessary, and to ensure their plans work well, staff are specially trained and periodic tests and exercises are carried out.

Visit the [emergency planning](#) page for more information.

Flood Risk and the Historic Environment

The historic environment comprises historic landscape, historic built environment and buried archaeological deposits. The Greater Manchester Archaeological Advisory Service (GMAAS) advises on planning and other land management decisions such as flooding to avoid or mitigate damage to the historic environment.

The Greater Manchester Archaeological Advisory Service (GMAAS) maintains the Historic Environment Record which is the most complete record of all historic assets within the Borough and ensures that the advice provided has a sound knowledge base. This knowledge is used to advise on the impact of proposed schemes including for instance flood storage areas, swales and SuDS.

Planning Authority

Wigan's Local Plan Core Strategy sets the planning policy framework within which developments are delivered. This allows infrastructure and service providers, as well as other developers, to plan investments. It provides certainty for those wanting to develop and those wanting to conserve places.

It ensures that planning applications are considered on a consistent and fair basis, balancing the interests of the site owner or developer with the interests of others. The interests of others will always include owners and occupiers of neighbouring properties, but it can also include the interests of the Borough as a whole and for some developments, potentially the interests of the region or even the national interest. And significantly, it enables people to get involved in the process that will shape the future of the Borough.

Policies relating to flooding and water are contained within the Core Strategy, which was also subject to Strategic Environmental Assessment (SEA). This SEA included consideration of the impact on flooding and water.

Highways Authority

Wigan Council is responsible for maintaining the roads and pavements of adopted highways in the Borough. An adopted highway is one where the local authority has taken on the legal responsibility for maintenance.

The Council is responsible for the drainage of surface water from the adopted highways. In addition to this regular cleaning programme, the Council will attend to any reports of blocked gullies to investigate the problem and take remedial action to restore them.

Sometimes the gully may appear to be blocked, but the problem could be with the drain into which the gully is connected. Gullies are usually connected to sewers, which are the responsibility of United Utilities, or highway drains that belong to the Council. Should these sewers or drains become blocked, or in times of heavy storms become overfull, the gully will appear to be blocked.

If a United Utilities foul sewer becomes blocked or overfull, sewage could come from it. United Utilities are responsible for clearing any blockage, and in both cases cleaning the resultant sewage up.

The Council is also responsible for maintaining culverted watercourses that run under the adopted highway. These were once ditches that have been piped to allow the highway to be built over them.

Highways Authorities currently have the power to adopt SuDS that serve the highway through Section 38 of the Highways Act but are under no obligation to do so. Under the Flood and Water Management Act, highways authorities will be required to adopt any SuDS approved by the SuDS Approval Body which exists within the highways boundary.

Highways Authorities are Risk Management Authorities in their own right according to the Flood and Water Management Act and must adhere to all the responsibilities of Risk Management Authorities.

Land Drainage Act responsibilities

Wigan Council has the following powers and responsibilities under the Land Drainage Act:

- Power to carry out flood risk management work provided that it is consistent with the local flood risk management strategy and is either to manage flood risk from an ordinary watercourse or to maintain or operate existing works to deal with flood risk from the sea.
- Powers to serve notice requiring necessary works be undertaken. Failure to comply with such a notice may result in the Council undertaking the work and recharging the owner the costs of doing so.

The Council also has responsibility as riparian owner for any land they own.

Maintaining Public Spaces

The Council has the responsibility of maintaining some parks and public spaces. Good maintenance practices can help to reduce flood risk, for instance by ensuring that rubbish and leaves are not tidied into watercourses or drains. For new public spaces which are under the control of a management company, these activities should be included in the management contract.

Wigan Council may also be a riparian owner of both ordinary and main watercourses and as such should carry out the duties imposed on riparian owners by the Land Drainage Act. They should maintain all assets in their ownership.

United Utilities

Water Supply

In respect of water supply, United Utilities are not classed as a Risk Management Authority but will be required to provide information related to flood risk to the Council and the Environment Agency. They will be affected by changes to the Reservoirs Act 1975 which has been amended to state the following:

- All undertakers with reservoirs over 10,000m³ must register their reservoirs with the Environment Agency as they are subject to regulation.
- All undertakers must prepare a reservoir flood plan.
- All incidents at reservoirs must be reported.

Wastewater and Sewage

United Utilities as a provider of wastewater and sewage service have the following responsibilities:

- Respond to flooding incidents involving their assets.
- Maintenance of a register of properties at risk of flooding due to a hydraulic overload in the sewerage network (DG5 register).
- Undertake capacity improvements to alleviate sewer flooding problems on the DG5 register.
- Provide, maintain and operate systems of public sewers and works for the purpose of effectually draining an area.
- Have a duty to co-operate with other relevant authorities in the exercise of their flood and coastal erosion risk management function.
- Must have a regard to national and local flood and coastal erosion risk management strategies.
- May be subject to scrutiny from Lead Local Flood Authorities democratic processes.
- Have a duty for the adoption of private sewers.
- Statutory consultee to the SAB when the drainage system is proposed to communicate with the public sewer.

The DG5 Register

The DG5 register is a register of properties and areas that have suffered or are likely to suffer flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant period. It is also worth noting that properties will be removed from the register once a solution is in place.

Tackling Sewer Flooding

As part of their obligation to Ofwat, water and sewage companies are required to undertake capacity improvements to alleviate sewer flooding problems on the DG5 register during the current Asset Management Period (2010 – 15) with priority being given to more frequent internal flooding problems. It is important to identify solutions that are robust and cost beneficial.

System of Public Sewer and Works

An essential flood risk management duty is defined under the Section 94 of the Water Industry Act 1991, which states that Water and Sewerage Companies (WaSCs) have a duty to provide, maintain and operate systems of public sewers and works for the purpose of effectually draining an area. WaSCs also have a duty under the Water Industry Act 1991 relating to premises for 'domestic sewerage purposes'. However, there is no legal duty or responsibility relating to highway drainage, land drainage and watercourses, with the exception of that WaSCs can accept highway drainage by agreement with a Highway Authority.

Water Companies have no powers to prevent new foul connections to its network even if they know it will cause flooding to customers. This is why water companies actively seek engagement with the planning process, even though they are not statutory consultees. This is to ensure infrastructure can be provided at the appropriate time to adequately serve new development.

The Flood and Water Management Act (2010) amends section 106 of the Water Industry Act. Therefore, the approval to connect to the surface water sewer will be granted by the SuDS Approving Body. Water companies will be statutory consultees to the SuDS Approving Body.

Environment Agency

National Strategic Role

The Environment Agency is required to publish the National Strategy which seeks to provide a clear national framework for all forms of flood and coastal erosion risk management. This fulfils a requirement in the Flood and Water Management Act 2010, which gave the Environment Agency a 'strategic overview' of flood and coastal erosion risk management and in turn takes forward a recommendation from Sir Michael Pitt's inquiry into the 2007 floods.

The National Strategy identifies the following strategic actions for the Environment Agency:

- Use strategic plans like the Catchment Flood Management Plan and the Shoreline Management Plan to set the direction for Flood Risk Management.
- Support the creation of Flood Risk Regulations by collating and reviewing the assessments, plans and maps that Lead Local Flood Authorities Produce.
- Providing the data, information and tools to inform government policy and aid Risk Management Authorities in delivering their responsibilities.
- Support collaboration, knowledge-building and sharing of good practise including provision of capacity-building schemes such as trainee schemes and officer training.
- Manage the Regional Flood and Coastal Committees and support their decisions in allocating funding for flood defence and flood resilience schemes.
- Report and monitor on flood and coastal erosion risk management.
- Provide grants to Risk Management Authorities to support the implementation of their incidental flooding of environmental powers.

Local Operational Role

The Environment Agency's Local Operational Role includes being a coastal erosion Risk Management Authority, emergency planning, advising on the planning process and managing flooding from main rivers, reservoirs and the sea.

Emergency Planning

The Environment Agency contributes to the development of multi-agency flood plans, which are developed by the Civil Contingencies Service and local resilience forums to help the organisations involved in responding to a flood to work better together. It also contributes to the National Flood Emergency Framework for England which includes guidance on developing and assessing these plans.

It works with the Met Office to provide forecasts of flooding from rivers and the sea in England and has a responsibility to communicate flood warnings to the public, the media and to professional partner organisations.

The Environment Agency and other asset operating authorities also have a role in proactive operational management of their assets and systems to reduce risk during a flood incident.

Planning Process

Since October 2006, the Environment Agency in England has been a statutory consultee for all planning applications (other than minor development) in areas where there is a risk of flooding and for any site greater than 1 hectare in size. Local Planning Authorities must consult the Environment Agency before making any significant decisions on new development in flood risk areas. The Agency will provide advice on Flood Risk and help the local planning authority to technically interpret developer's flood risk assessments that have been submitted as part of the evidence base in support of a planning application.

Main Rivers

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

It can also bring forward flood defence schemes through the Regional Flood and Coastal Committees, and it will work with Lead Local Flood Authorities and local communities to shape schemes which respond to local priorities.

It also has a regulatory role with regard to consenting works carried out by others in, under, over or within 9 metres of a main river or within 8 metres of a main river flood defence to ensure that those works do not adversely affect the operation of the drainage system or cause unnecessary environmental damage.

It has also produced Statutory Byelaws which apply to operations in and around the main river, its flood plain and near to any associated flood defences.

Reservoirs

The Environment Agency enforces the Reservoirs Act 1975, which is the safety legislation for reservoirs in the United Kingdom. The Environment Agency is responsible as the Enforcement Authority in England and Wales for reservoirs that are greater than 10,000m³. As the Enforcement Authority the Environment Agency must ensure flood plans are produced for specified reservoirs. However responsibility for carrying out work to manage reservoir safety lies with the reservoir owner/operator who should produce the flood plans. The Environment Agency is also responsible for establishing and maintaining a register of reservoirs, and making this information available to the public.

It also acts as the enforcement authority for reservoirs with a storage capacity greater than 25,000m³ and, once the relevant parts of the Act have been commenced, reservoirs with a capacity of 10,000m³. Responsibility for carrying out work to manage reservoir safety lies with the reservoir owner/operator.

Appendix C – Flood Investigation Report



AGMA Policy for Investigating Flood Incidents

THE LEGISLATION

Section 19 of the Flood and Water Management Act 2010 states that:

- (1) On becoming aware of a flood in its area, a lead local flood authority (LLFA) must, to the extent that it considers necessary or appropriate, investigate:
 - (a) Which risk management authorities have relevant flood risk management functions, and
 - (b) Whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood
- (2) Where an authority carried out an investigation under subsection (1) it must –
 - (a) Publish the results of its investigation, and
 - (b) Notify any relevant risk management authorities

NB. The term 'flood' includes any case where land not normally covered by water becomes covered by water (from natural sources). It does not include flooding from a burst water main or any part of the sewage network (unless caused by the volume of rainwater entering the system).

1.0 RATIONALE

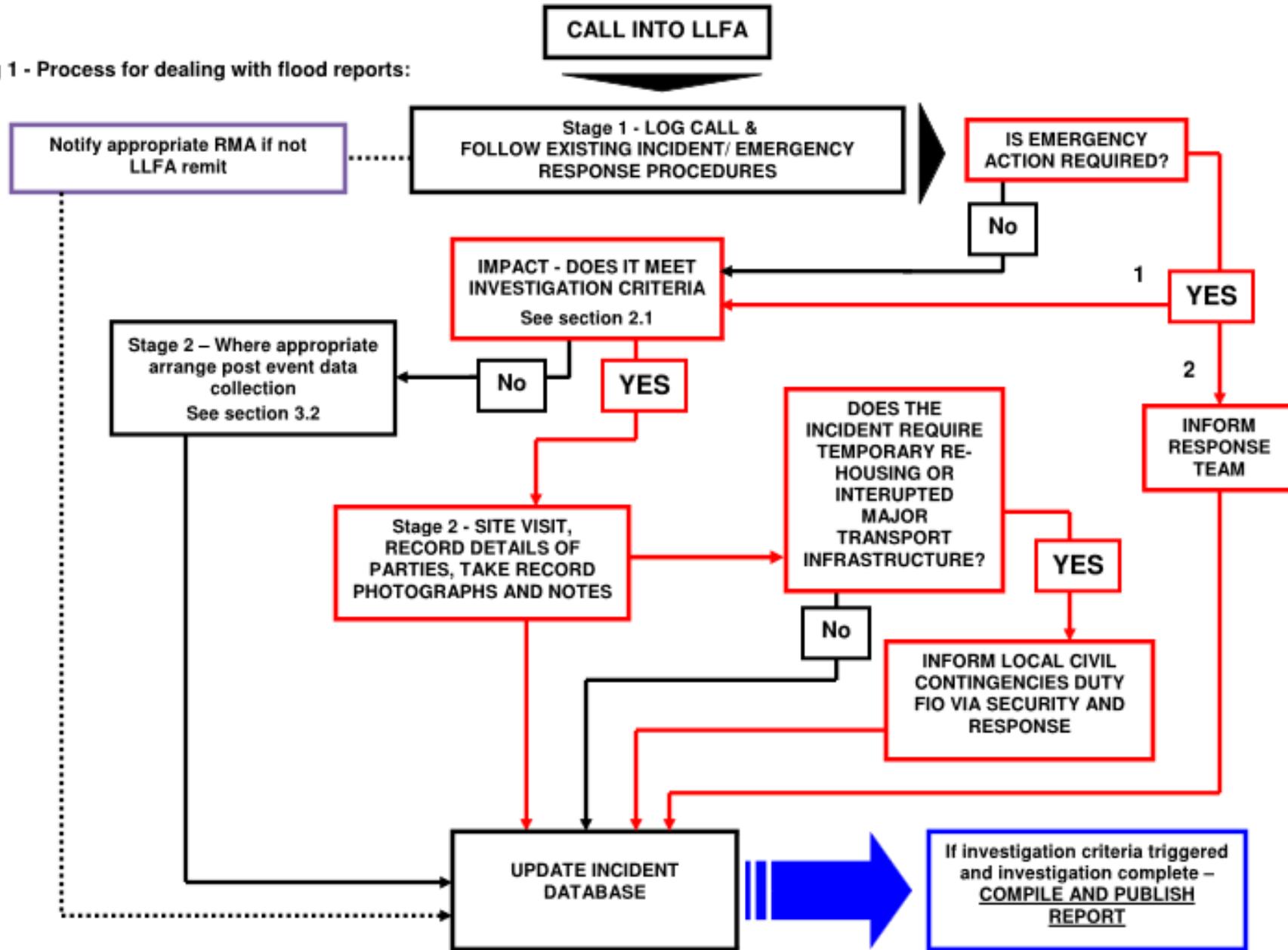
There has been no guidance provided on how to discharge this duty and many elements remain highly subjective. As a result, and to avoid inconsistency across the conurbation; this policy has been drafted for local implementation to improve the understanding of flood risk and flood risk management uniformly.

The focus of this policy is not solely around the identification of the necessity to instigate an investigation but to ensure that a process is in place to gather supporting evidence. Initially from the information received relating to a flood incident it may be deemed a full investigation is not appropriate but by having a process in place as outlined in this document the supporting evidence is in situ if the incident escalates to one of much greater significance once the impact of the flooding is known.

1.1 REPORTING PROCEDURES

Depending on the circumstances, flooding may be reported to the LLFA through a number of different sources, including: The Contact Centre; Highways and Engineering Service; Emergency Planning Service; Housing Management Services and the Emergency Services, any of which may take the initial notification of the incident. It is therefore vital to ensure that one nominated contact (the Lead Local Flood Officer or the relevant team) is identified, and that training and awareness sessions are put in place to ensure reports and details of the incident are all correctly directed and are not missed. A secondary contact should also be nominated to ensure cover during absences, and a system should also be put in place to cover flood incidents which occur outside of normal office hours.

Fig 1 - Process for dealing with flood reports:



2.0 CRITERIA FOR UNDERTAKING INVESTIGATION

Not all flood incidents will justify a full investigation. Despite this, it is necessary to collect focal information from all incidents, even where the impact of the incident is minimal. All data gathered can be used to inform and predict the consequences of more serious incidents, not doing this may hinder a comprehensive understanding of risk across an LLFA area.

Where the incident has impacted on resources it may be decided that data is gathered post event when resources allow. Information such as photographs, flow paths and sources should be recorded where possible and even if they are not required as part of an investigation will become useful evidence especially to support and quantify the identified risk areas.

If it is found that flooding occurs on a frequent basis to a property/area it may be frequency rather than the scale of the incident that triggers an investigation in the future.

2.1 IMPACT/CONSEQUENCE

It is recommended that an incident be defined as 'significant' based on any of the following factors and would potentially trigger a full investigation (see assessment matrix section 5.0):

Trigger	Consequence.
Risk to life	Death, accident/ injury.
Weight of public, media, political and planning interest	Reputation.
Impact on critical services	Critical services include schools, hospitals, nursing homes and emergency services.
Internal residential property flooding - \geq 5/6	'Internal' flooding includes flooding inside the main property and any outbuildings which provide living accommodation. Any flooding of other outbuildings and garages etc should be classed as 'external', except where they are integral to the main property and accessible via an internal door. – It is important to collect accurate records of internal property flooding, to support any decisions on flood defence funding. This information may be requested in regards to future property purchases, any inaccurate data could potentially prejudice a sale resulting in legal action.
Economic disruption	Consider the relative impacts of flooding of commercial property. In some cases, flooding of a single commercial property could no more warrant investigation than flooding of a single residential property; but in other cases, the serious flooding of a large, single property could be extremely disruptive to the economic functioning of a community or have significant impact on a local or regional economy, and would therefore certainly trigger an investigation. Other causes of economic disruption should be covered by consideration of impacts upon infrastructure.
Impact on critical infrastructure and installations	Critical infrastructure includes motorways, 'A' roads, rail links, port facilities, utility installations, bridges, flood defences etc.
Frequency of flooding	Also consider depth of flooding, were residents displaced and the duration of such.

- Effective deployment of defensive measures should also be recorded.
- Consideration should also be given to any locally significant flood incidents which the LLFA may choose to investigate regardless of the criteria above.

3.0 SCOPE OF EVIDENCE GATHERING

Regardless as to whether a flood incident will result in a full and formal published investigation gathering information relating to the cause and impact of the flooding is necessary at all stages of the event.

Whilst the amount of data required to provide an insight into the cause of the flooding should remain proportionate to the size of the event it is imperative that all LLFA's ensure a process is embedded to support this. It is each districts responsibility to nominate a Lead Flood Officer and provide training and incident response procedures which align with this policy.

If there are issues around the nominated Flood Officer having the capacity or correct training to attend, this should be overcome through training and awareness sessions between all involved directorates and a strong Flood Risk Management Working Group.

Part of the process should also identify the means of capturing this data and in what format it should be recorded and stored to ensure the information can be viewed and shared for use by any relevant parties. This will not only ensure relevant data is captured in a timely manner but evidence is available to support future bids within the GM investment programme.

3.1 STAGE 1 – Incident Recording

The following information should be gathered at the time the incident is reported:

Information type	Information required
<u>Caller details:</u>	<ul style="list-style-type: none">• Name• Address• Telephone number• e-mail
<u>By what route was the call received:</u>	<ul style="list-style-type: none">• Direct from the caller• 3rd party<ul style="list-style-type: none">○ family or friends of the person affected○ other RMA's○ Emergency services○ Councillor on behalf of their constituency○ Other – please state
<u>Incident details:</u>	<ul style="list-style-type: none">• Reference no:• Address/ location:• Date and Time of incident:
<u>What is/has flooded:</u>	<ul style="list-style-type: none">• Property – internal – If Yes, ask whether basement or Ground floor• Property – external• Level of flooding (if already occurred) – approximate depth• Highway• Open space (define)• Other (define)
<u>Where is/was the water coming from:</u>	<ul style="list-style-type: none">• Overflowing Manhole/Drain• Overflow from a river or stream• Water running off the highway• Water running off a field• Other (define)• Don't Know

<u>Additional risk information:</u>	<ul style="list-style-type: none"> • Is/was there a danger to life? (if yes advise caller to contact the emergency services immediately) • Is/was there a foul smell? • Is/was there evidence of sewage in the water? • Is the water still rising? If so, how deep is it? • Is there a watercourse nearby? If so, what is it called? • Is there ongoing traffic disruption? • Other factors (define)
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3.2 STAGE 2 - Site Information Data Gathering

This information whilst again being proportionate to the size of the event is necessary to validate initial reports received from the public or 3rd parties including the media and would be included in the final report if a full investigation is required. Each LLFA should aim to gather the following information:

Information type	Information required
<u>Incident details:</u>	<ul style="list-style-type: none"> • Reference no: • Location: • Date and time of incident: • Date and time of site visit
<u>What is/has flooded:</u>	<ul style="list-style-type: none"> • number and type of receptors affected; • extent, depth and velocity of flooding • extent of damage to critical infrastructure
<u>Where is/was the water coming from:</u>	<ul style="list-style-type: none"> • source and cause of flooding and any interactions with other sources of flooding;
<u>Additional risk information:</u>	<ul style="list-style-type: none"> • duration of event; • topographic / land use / drainage infrastructure information associated with the affected site; • any immediate resolution, and any links to longer term mitigation / management measures; • previous similar and historic incidents • any measures taken during the event to limit damage and their apparent effectiveness • photographic evidence of flooding

4.0 PUBLISHING

If a Formal Investigation has been undertaken, the LLFA has a legal Duty to publish a report of its findings. Local procedures for approval and publishing of public documents should apply.

Special consideration should be made for cross-boundary incidents, and the format of reporting and sharing of information should be agreed between neighbouring LLFAs.

5.0 ASSESSMENT MATRIX

The following table provides guidance as to determine whether a full investigation is required:

NUMBER	FLOODING IMPACT	IF 'YES' GO TO:	IF 'NO' GO TO:
1	Has a flood incident occurred? <ul style="list-style-type: none"> • Internal property flooding - residential/commercial • Economic disruption • Risk to life or public health • Affecting critical services, infrastructure and or installations • Deployment of defensive measures 	4	2
2	Has a flood incident occurred to; <ul style="list-style-type: none"> • Non-priority highways? • Parks, gardens or open space (posing no threat to life or public health)? 	3	---
3	Is there a local/ political desire to investigate the incident?	4	12
4	Have you identified the relevant risk management authority? If necessary, arrange a meeting of the local flood risk management partnership (A meeting may only be necessary for major events – minor events may only need information circulated by phone or email between LLFA, the Environment Agency and United Utilities)	8	5
5	Notify the relevant flood risk management authority	6	---
6	Is the risk management authority exercising their functions in relation to this incident?	7	4
7	Log the correspondence in the incident file and request copies of the outcome if/ when appropriate.	---	---
8	Is there a history of flooding in the area?	9	13
9	Has this been investigated before?	10	13
10	Is the cause and extent the same as previous incidents?	11	13
12	Log incident details; promote self-help and community resilience.	12	---
13	REVIEW SITE VISIT & DATA COLLECTION Is a full investigation required based on information available?	13	11
14	FULL INVESTIGATION – AND PUBLISH <i>Consider scope for Flood Defence Grant in Aid application for property-protection scheme.</i>	---	---

Appendix D – Action Plan

Countrywide Actions – Actions that should be delivered across the country

Actions		Wigan Response	Responsibility
Improving understanding of flood risk	Increasing public and institutional knowledge and awareness	<ul style="list-style-type: none"> Provision of advice and information on flooding issues on the Council website 	Civil Contingencies Response Unit (CCRU)
	Recording and reporting flood incidents	<ul style="list-style-type: none"> Wigan Council will keep an up to date record of all flooding incidents in the borough on a database. Wigan Council will investigate ways that the general public can report flood incidents easily. Flood investigation reports will be used to build up a better understanding of potential mitigation measures. 	LLFA
Adapt spatial planning policy to reflect local flood risk	Introducing a robust Sustainable Drainage System (SuDS) framework	<ul style="list-style-type: none"> A SuDS framework will be introduced 	LLFA
	Including local flood risk concerns in all future Strategic Flood Risk Assessments	<ul style="list-style-type: none"> All Strategic Flood Risk Assessments will be consulted on and incorporate local concerns 	LLFA and Planning Authority.
	Considering the National Planning Policy Framework's advice on flood risk management	<ul style="list-style-type: none"> Spatial plans and planning policy will take into account the NPPF advice 	Planning Authority

Actions	Wigan Response	Responsibility
Raise community awareness through communication activities	<ul style="list-style-type: none"> • Wigan Council will aim to increase knowledge and understanding of flooding and flood risk and inform residents how they can help manage it. • This will tie in with the Council's communication strategy and make use of public consultation events, newsletters and online resources such as the Council website and social media. 	Civil Contingencies Response Unit (CCRU)
Establish working framework between Risk Management Authorities	<ul style="list-style-type: none"> • Wigan Council will use the principles of the Environment Agency/DEFRA guidance to ensure information. • Wigan Council will aim to put in place a clear record of what information has been collected in an overall data register. 	LLFA
Establish working framework with the Canal and River Trust	<ul style="list-style-type: none"> • Wigan Council will liaise with the Trust and its representatives to set up a flood risk warning in the event of a potential breach. 	LLFA

Site Level Specific Management Actions

Action		Wigan Response	Responsibility
Encouraging implementation of flood resilience measures and property protection schemes	Encouraging individual property protection measures	<ul style="list-style-type: none"> Wigan Council will encourage residents to address property resilience through the installation of individual property protection measures, such as raised driveways, the use of flood gates or air brick covers for example. 	LLFA
	Increasing awareness and preparedness for flood events	<ul style="list-style-type: none"> Wigan Council will make use of local media outlets, the Council website and social media to raise awareness of flood events and how people can be prepared. 	Civil Contingencies Response Unit (CCRU)
	Investigating funding opportunities	<ul style="list-style-type: none"> Wigan Council will investigate options for funding of property protection measures, including the possibility of offering grants or subsidies for individual properties who are interested in installing such measures. 	LLFA
	Emergency planning responses	<ul style="list-style-type: none"> Wigan Council will continue to incorporate flooding responses into emergency planning procedures Flooding is one of the main risks to communities and business continuity in Greater Manchester. The Greater Manchester Civil Contingencies and Resilience Unit (CCRU) works with all Greater Manchester local authorities, emergency services and key partners such as the EA and UU to ensure that organisations, people and places are well prepared for an event such as flooding and that appropriate response and recovery plans are in place. The CCRU maintain the Greater Manchester Community Risk Register which lists a range of flood events amongst the key risks to Greater Manchester. Wigan Council has 	Civil Contingencies Response Unit (CCRU) and Planning Authority

		<p>robust response arrangements in place to respond to emergency incidents such as flooding, working closely with its emergency response partners. The LLFA will work closely with the CCRU, ES and emergency services to ensure that organisations, businesses and communities are well prepared for flooding with appropriate response and recovery plans in place. The LLFA will ensure that flood risk assessment data and reports of flood event investigations are shared effectively and will help to target communities and properties at significant risk of flooding. The LLFA will also work with CCRU to increase awareness and preparedness through work with the EA and the National Flood Forum.</p>	
<p>Implementing sustainable drainage and source control measures and management of overland flow paths</p>		<ul style="list-style-type: none"> • Sustainable drainage measures will be implemented for new developments and encouraged where possible elsewhere • Property owners will be encouraged to install simple systems such as water butts to capture roof runoff which would reduce the amount of surface water entering the drainage system. • Ensure that all works on watercourses which could affect flood risk management have formal consent of the LLFA where required and that appropriate enforcement action is taken to ensure that unauthorised works are made compliant or are removed. 	<p>LLFA and Planning Authority</p>

Actions		Wigan Response	Responsibility
Land management	Providing guidance to land owners	<ul style="list-style-type: none"> Wigan Council will liaise with landowners and representative groups to disseminate information on effective land management to reduce flooding 	Planning Authority
	Reviewing land management methods and altering agricultural practices	<ul style="list-style-type: none"> Landowners will be encouraged to manage their land so as to reduce water run-off e.g. improved tree coverage and different ploughing practices. 	Planning Authority
Reviewing asset management and maintenance methods.		<ul style="list-style-type: none"> Wigan Council will maintain an asset register and review management and maintenance to ensure flood issues are addressed Wigan Council will provide advice and guidance for asset owners on effective maintenance and management 	LLFA

Appendix E – Flooding Hotspots

High priority assets, areas that have experienced flooding on more than one occasion within the last 12 months

Address/Location	Type	Nature of Flooding
A580 East Lancs Road	Surface	Highway
St Ambrose Road, Tyldesley	Combined Sewer	Internal / Gardens
Park Road, Hindley	Surface	Highway / Fields / Leisure Park
Saddle Junction	Surface	Highway
Smethurst Road/Upholland Road, Billinge	Surface	Cellar and garden
Loire Drive Roundabout	Surface	Highway
Abbey Lakes (The Raj), Orrell Road, Orrell	Surface	Car park
Scot Lane opp. Martland Mill Lane	Surface	Highway
Dean Brook Bridge, Orrell Road	Surface	Garden and Cellar

Medium priority assets, areas that have experienced flooding between 2010 and 2013

Address/Location	Type	Nature of Flooding
Victoria Terrace, Bickershaw	Surface / Foul	Internal
Beresford Street, Wigan	Foul	Internal
Gorman Street, Wigan	Foul	Internal
Bolton Road/Lily Lane, Byrn Gates	Surface	Highway
White Crow Public House, Standish	Surface	Internal
Blenheim Road, Ashton	Surface	Internal
Eleanor Street, Wigan	Surface	Internal
Eskdale Road, Ashton	Surface	Internal
Hazelmere Gardens, Hindley	Surface	Internal

Address/Location	Type	Nature of Flooding
Liverpool Road, Hindley	Foul	Rear Yards
Nook Lane, Lowton	Surface	Internal

Low priority assets, areas that have flooded prior to 2010.

Address/Location	Type	Nature of Flooding
Merton Grove, Tyldesley	Foul	Internal / Gardens
Rear of the Avenue, S.L.Ground	Surface	Internal / Gardens / Garages / Open Land
Marmion Close (at junction with Scot Road, Lowton), Lowton	Surface	Internal / Gardens / Highway
Havenwood Road, Whitley	Foul	Internal
The Dell, Appley Bridge	Surface	Internal / Gardens
Bowland Avenue, Ashton	Surface	Internal
North Lane, Astley	Surface	Internal / Gardens
Parsons Walk, Wigan	Foul	Internal
Karen Road, Ince	Surface	Garden / Highway
Old Pepper Lane, Standish	Surface / Foul	Garden / Highway
Monmouth Crescent, Ashton	Surface	Internal
Lincoln Drive, Ashton	Surface	Internal
Lily Lane, Bamfurlong	Surface	Highway
Chester Drive, Ashton		

Appendix F – Highways Direct Labour Organisation Flooding Response

Phases	Local Conditions	Environment Agency	Met Office	Operational Response
Be Aware	Rain or rain likely		Severe Weather Alert (Yellow)	Communicate Met Office warning to Operational Mgrs / Tech Supervisors Check equipment including pumps and vehicles
Monitor and Prepare	Heavy Rainfall Minor Impact Flooding	 Flood Alert	Severe Weather Alert (yellow / Amber)	Prepare operational resources / Fleet and Equipment Brief operatives of emerging conditions including on call team and Winter Maintenance team (April to Oct)
Activate & Take Action	Rising River Levels Flooded properties Large volume of calls to the Council	 Flood Warning	Severe Weather Alert (Amber / Red)	Hold response meeting to deploy resources to hot spot areas Email flood group with action to be taken Implement traffic management Contact EA to coordinate response to flooded areas
	Risks to key Infrastructure	 Severe Flood Warning	Severe Weather Alert (Amber / Red)	Attend meeting with civil contingencies Prioritise response based on emerging situation.

What are we doing differently since winter 2015?

Flood Response

- The Council's reactive maintenance group have purchased an additional high volume pump to be deployed in a flood event.

Winter Maintenance

- Increased cyclic maintenance increased in hot spot areas.
- Changed from none treated 10mm thawrox salt to treated 6mm thawrox salt.
- Sold seven of our ageing fleet and improved by hiring nearly new vehicles from Econ, with more advanced technology.
- Added the newly built Leigh Guided Bus route to our primary route network.
- Purchased through AGMA 10 authorities group the Vaisala Weather monitoring and management system.
- In the process of constructing a winter maintenance vehicle wash off bay.

Civil Contingency

- Post Storm Eva; the Council has tested its emergency response to flooding as part of a multi-agency regional exercise, Triton II, in July. This included activating and testing the Council's Command and Control structure, Emergency Control Centre and systems for establishing a rest centre.
- The Council continues to dial into the multi-agency Flood Advisory Service telephone conferences for both the Lancashire and Greater Manchester regions - Flood Advisory Service telephone conferences are called by the EA as and when required, subject to both existing and predicted weather conditions.
- The Council is currently developing a scheme to increase the resilience of the borough via Community Emergency Response Volunteers:
 - improving knowledge and information;
 - enabling increased resident involvement in responding to emergencies;
 - encouraging self-help and resilience.
 - It is envisaged the scheme will be a combination of learning from national schemes such as Snow Angels and Flood Wardens.

What have we done

In 2017 funding was received from the Environment Agency for works to the assets highlighted as in poor condition. JFlow modelling for all the assets in Wigan has been completed by JBA Consulting. Using the JFlow data, 6 assets were chosen based on the total damage cost and number of properties affected. The funding was used to further map and model the assets to gain a better understanding of the risk of flooding due to these assets, including a CCTV survey of each asset. This is to be an ongoing works package with each asset identified as in poor condition being assessed. The Council will apply for the funding for this through the Environment Agency each financial year.

Lanes for Drains have been carrying out works to investigate the location, condition and connections of all the highway gullies within the Wigan Borough. The first works package includes all the gullies on the A-roads and in known flood hotspot areas. Works package 2 includes all the B roads, with works package 3 including the remainder C roads. Following these works we will have a better understanding of where the highway gully network connects to and can look if there are any opportunities to reconnect the network in order to reduce flooding to the highway.

What could we do more of?

- Engagement and training of Community Emergency Response Volunteers as above
- Promote the winter service to schools and local businesses.

What one thing could we do together that would make the biggest difference?

- Communication between AGMA authorities and inclusion at CCRU strategic co-ordination of AGMA members in a flood event to discuss best utilisation of resources.
- Collaborative working with local authorities.
- Large scale route optimisation throughout the 10 AGMA authorities and also adjoining authorities.